

#17914 : Prognostic factor for sepsis in Korean traumatic patients**Authors:**

Sung-Joon Park (1), Sung-Hyuk Choi (2), Kim Kyung-Hwan (3), Cho Young-Duck (2)

1. department of emergency medicine, College of Medicine, Korea University Guro Hospital, Seoul, Korea, Seoul, KOREA
2. Department of emergency medicine, College of Medicine, Korea University Guro Hospital, Seoul, Korea, Seoul, KOREA
3. Department of emergency medicine, Inje university Il-San Baek hospital, Il-San, KOREA

Keywords: Sepsis, Trauma, Prognosis

Abstract :**Background**

Many patients die from sepsis and multiple organ failure, even after primary surgery by trauma. Early diagnosis of sepsis in traumatic patients is important and used in various ways, such as CRP and WBC, but it is incorrect. Recently, procalcitonin (PCT), macrophage migration inhibitory factor (MIF) have emerged as predictive factors. Our study aims to explore the significance of PCT and MIF as a predictor of sepsis in trauma patients.

Methods

This study was conducted on prospective observational study patients who visited an emergency medical center in a university hospital from March 2014 to February 2016 and were intended for severe trauma patients aged 15 or older. We measured the WBC, the CRP, the lactate, PCT, and MIF with serum taken from the patient's blood within 1 hours. The definition of post traumatic sepsis was defined as being part of SIRS criteria with infections within a week.

Results

There were 132 patients in the study, 112 men, 20 women, and mean age were 48.2 ± 8.8 years old. The mean injury severity score (ISS) was 18.1 ± 7.6 , the high ISS group ($ISS \geq 15$) had 58 patients and the low ISS group ($ISS < 15$) had 74 patients. The high ISS group had a higher MIF, lactate and PCT than the low ISS group, and showed a correlation between ISS and PCT (0.207), MIF (0.141). There were 38 post-traumatic sepsis patients, 28 of whom were in the high ISS group and 10 from the low ISS group. MIF showed statistically high levels in sepsis patients among severe traumatic patients.

Discussion & Conclusions

ISS > 15, MIF, and PCT are possible as predictors of sepsis in severe trauma patients, However, further studies are needed as MIF, PCT is increased depending on the severity of the trauma.

Trial Registration / Funding Information (only) :

This study used in hemorrhagic shock patients (#132) This research was supported Basic Science research program through the National Research Foundation (NRF) funding by the Ministry of Education, Science and Technology (R1804431), and was partially supported a Korea University Grant This study protocol and informed consent documents were reviewed and approved of Korea University Guro Hospital (IRB No. 2018GR0155)

#17915 : Significance of macrophage migration inhibitory factor for sepsis in hemorrhagic shock patients**Authors:**

Kim Kyung-Hwan (1), Sung-Hyuk Choi (2), Yoon Young-Hoon (3), Jung-Youn Kim (4)

1. Department of emergency medicine, Inje university Il-San Baek hospital, Il-San, KOREA
2. Department of emergency medicine, College of Medicine, Korea University Guro Hospital, Seoul, Korea, Seoul, KOREA
3. Department of emergency medicine, College of Medicine, Korea University Guro Hospital, Seoul, Korea, seoul, KOREA
4. department of emergency medicine, College of Medicine, Korea University Guro Hospital, Seoul, Korea, seoul, KOREA

Keywords: Hemorrhagic shock, Macrophage migration inhibitory factor, sepsis

Abstract :**Background**

Many patients die from sepsis and multiple organ failure, even though proper management in hemorrhagic shock patients. Early diagnosis of sepsis in hemorrhagic shock patients is important and used in various ways, such as CRP and WBC, procalcitonin (PCT), but they have some problems. Recently, macrophage migration inhibitory factor (MIF) have emerged as predictive factors. Our study aims to explore the significance of MIF as a predictor of sepsis in hemorrhagic shock patients.

Methods

This study was conducted on prospective observational study patients who visited an emergency medical center in a university hospital from March 1, 2018 to December 31, 2018 and were intended for hemorrhagic shock patients aged 15 or older. We measured WBC, CRP, PCT, MIF, TNF- α , Interleukin-6 (IL-6), and lactic acid with serum taken from the patient's blood. The definition of sepsis was defined as being part of SIRS criteria with infections within a week.

Results

180 hemorrhagic shock patients were registered in emergency department, 28 of whom had sepsis within a week. The CRP, WBC, TNF- α , IL-6 did not differ in the comparison between sepsis and non-sepsis patients, while the PCT was somewhat high in sepsis patients ($0.24 \pm 0.1 \text{ ng/mL} > 0.18 \pm 0.07 \text{ ng/mL}$), but with had no statistical significance. However, MIF was significantly elevated in sepsis ($2633 \pm 710 \text{ pg/mL}$) to non-sepsis group ($1460 \pm 680 \text{ pg/mL}$). There was no correlation between MIF and lactic acid, which is the diagnostic criteria of shock.

Discussion & Conclusions

It is believed that MIF may be used as a measure of sepsis in hemorrhagic shock patients. However, more research on the occurrence of MIF is thought to be necessary.

Trial Registration / Funding Information (only) :

This study used in hemorrhagic shock patients (#180) This research was supported Basic Science research program through the National Research Foundation (NRF) funding by the Ministry of Education, Science and Technology (R1804431), and was partially supported a Korea University Grant This study protocol and informed consent documents were reviewed and approved of Korea University Guro Hospital (IRB No. 2018GR0155)

#17916 : The impacts of oxygen and medicine in immune cells in hypoxic condition**Authors:**

Cho Young-Duck (1), Sung-Hyuk Choi (1), Kyung-Hwan Kim (2), Han-Jin Cho (3), Hur Kwang-Yeol (4), Shim Bo-Sun (4)

1. Department of emergency medicine, College of Medicine, Korea University Guro Hospital, Seoul, Korea, Seoul, KOREA
2. department of emergency medicine, Inje university Ilsanbaek hospital, Ilsan, republic of Korea, Ilsan, KOREA
3. department of emergency medicine, college of Medicine, Korea university ansan hospital, ansan, korea, ansan, KOREA
4. Department of emergency medicine, College of Medicine, Korea University Guro Hospital, Seoul, Korea, seoul, KOREA

Keywords: Oxygen, Hypoxia, Pentoxifylline

Abstract :**Background**

Many patients admit the emergency department due to trauma. These patients with massive hemorrhage, respiratory failure, and further that the experience can fall into hypovolemic shock. In the treatment of shock patients, airway maintenance and oxygen supply are known to be of paramount importance. Therefore, this aim of study was to investigated to effects of oxygen supply and variable medication in hypoxic condition. We conducted an experiment to determine effect of oxygen and variable medication in iNOs, macrophage migration inhibitory factor (MIF) as an inflammatory cytokine of macrophage, in T cell viability (MTT), IL-2, IL-8 as an immune marker of T cells proliferation and T cells in hyperinflammatory condition by the using coculture.

Methods

The experiments were performed with THP-1 derived macrophage and Jurkat cells. First, macrophage cells put through normoxic state, hypoxic state, oxygen supply and variable medication, and measured the iNOs, MIF by western blots. Second, Jurkat cells also were incubated in the same way as in the first instance, and measured MTT, IL-2 and IL-8. Third, in co-culture, after Jurkat cells under hyperinflammatory macrophage cells were incubated through hypoxic state, oxygen supply and variable medication, and measured MTT, IL-2.

Results

1. iNOs and MIF increased in hypoxic state in macrophage cells. Pentoxifylline (PTX) under oxygen supply condition restored iNOs in stimulated macrophage.
2. MTT and IL-2 decreased in hypoxic condition, however PTX restored T cell viability, regardless of oxygen supply. IL-8, MIF increased in hypoxic condition, however PTX and steroid restored IL-8, MIF.
3. In coculture condition, oxygen supply and pentoxifylline more increased MTT, IL-2 than PTX in hypoxic state,

Discussion & Conclusions

Hypoxia decreased T cell viability. iNOS, MIF and IL-8 increased in hypoxic state rather than normoxic state. However, PTX restored T cell viability, IL-2 in oxygen supply condition than the hypoxic state.

Trial Registration / Funding Information (only) :

This study used commercially purchased cells (no patient study) This research was supported Basic Science research program through the National Research Foundation (NRF) funding by the Ministry of Education, Science and Technology (R1804431), and was partially supported a Korea University Grant This study protocol and informed consent documents were reviewed and approved of Korea University Guro Hospital (IRB No. 2017GR0098)

#17917 : Triage of severity of patients in emergency department

Authors:

Sung-Hyuk Choi (1), Kyung-Hwan Kim (2), Sung-Joon Park (3)

1. Department of emergency medicine, College of Medicine, Korea University Guro Hospital, Seoul, Korea, Seoul, KOREA
2. department of emergency medicine, Inje university Ilsanbaik hospital, Ilsan, republic of Korea, Ilsan, KOREA
3. department of emergency medicine, College of Medicine, Korea University Guro Hospital, Seoul, Korea, Seoul, KOREA

Keywords: Trage, Factor, Severity

Abstract :

Background

It is important to recognize of patients in the emergency department who need prompt treatment by visiting many patients simultaneously. Many countries use a variety of patient classification methods to identify severity, but they still have many problems. Therefore, we would like to find out the usefulness of a patient's severity assessment in a new way that gives appropriate values to the factors that can be obtained in the emergency department.

Methods

We collected a variety of factors that could be obtained from patients during visits to the emergency department from January 1, 2017 to December 31, 2017. In addition, by using approximately 600,000 data from the National health insurance service in Korea, the proper value was obtained for frequency using the Rash analysis method. Using the proper values of various factors obtained from the Rash analysis method, the cutoff value for determining the patient's admission and discharge was determined by applying the appropriate value of the factor to about 60,000 patients visiting the emergency department from 1 January to 31 December 2017. Accordingly, we evaluated the accuracy of the program as to whether the decision to be admitted and discharged from program is consistent with actual hospitalization and discharge in patients who are visiting the emergency department from 1 January to 31 December 2018

Results

To evaluate the significance of the program, we collected various factors, including age, sex, past history, blood pressure, pulse rate, respiration rate, body temperature, and state of consciousness of patients that could be obtained at the beginning of the visit, as well as blood sugar, hemoglobin, white blood cells, electrolytes, etc. In order to evaluate the severity at the early stages of patients' visits, the accuracy of the program was analyzed by a combination of factors that could be obtained in early stages of patient's visits among various factors. 22,782 patients registered for experiment, and when the cutoff value was set at 148, the sensitivity of hospitalization was 80% and positive predictive value of discharge from a hospital was 78%.

Discussion & Conclusion

The initial severity evaluation of patients in the emergency department is very important for the medical staff, and this study was shown to be significant. With the use of more factors, accuracy will be improved. In addition, a combination of appropriate factors in certain diseases, such as severe trauma, will contribute a lot clinically.

Trial Registration / Funding Information (only) :

This study was prepared on chart of patients. (#22782) This research was supported research program through the National IT Industry Promotion Agency (NIPA) funding by the Ministry of Science and ICT and the Ministry of Health and Welfare (J170073), and was partially supported a Korea University Grant This study protocol and informed consent documents were reviewed and approved of Korea University Guro Hospital (IRB No. 2017GR0346)

#17920 : Infectious outbreaks in Lebanon since the Syrian crisis.**Authors:**

Mariana Helou (1), Gerlant van Berlaer (2), Kayssar yamine (3)

1. Department of Emergency Medicine, Lebanese American University Medical Center, beirut, LEBANON
2. Department of Emergency Medicine and Research Group on Emergency and Disaster Medicine, Universitair Ziekenhuis Brussel, brussels, BELGIUM
3. Department of Orthopedic Surgery, Lebanese American University Medical Center, beirut, LEBANON

Keywords: Syrian war, Syrian crisis, outbreaks, Lebanon, infections

Abstract :

INTRODUCTION Since the start of the Syrian crisis in 2011, the region has witnessed a major population displacement. Lebanon, a country with a population of 4.2 million, has welcomed around 1 million refugees. A rise in the incidence of Measles, Hepatitis A and Leishmaniosis was noted at that time. This paper aims to document the incidence of outbreaks along with the factors that contributed to their emergence in Lebanon. **METHODS** This is a comprehensive literature review. Inclusion criteria were studies reporting the state of Syrian refugees in Lebanon and those reporting the prevalence and incidence of Measles, Hepatitis A, and Leishmaniosis outbreaks in Lebanon and Syria. **RESULTS** Lebanon received a total of 1.067.785 refugees on its soil, with the largest numbers in Akkar and Bekaa region. The incidence of Measles, Hepatitis A and Leishmaniosis had risen in Lebanon just after the start of the Syrian migration. Many factors were found that could have contributed to the emergence and dissemination of the outbreaks: poor housing conditions, bad sanitation, inadequate sources and contamination of water, poor nutritional state, waste management crisis, low immunization rate, the quality of the Lebanese healthcare system and the poor economic status of the refugees within the country. **DISCUSSION** Lebanon was found to have the highest Syrian refugee density in the Middle East area, with a population increase of 30 %. This has led to important impact on the demographic, economic, political and health systems. Outbreaks of Measles, Hepatitis A and Leishmania were recorded among Syrian refugees followed by an increase of the incidence of the same infections among the Lebanese population. Local factors inherent to Lebanon political and economic status also contributed to the emergence and spread of these infections. In coping with the overwhelming immigration from Syria, the Lebanese healthcare system and humanitarian relief efforts should focus on proper housing conditions, immunization campaigns among both the local population and immigrants, provision of safe drinking water, and improving the access to unrestricted basic health care services.

#17921 : Decision making and prehospital management of labour a obstetric complications

Authors:

Daniel Brynda (1), Katarina Vesela (2), Petr Kolouch (3)

1. Dept. of gynaecology and obstetrics, University hospital Kralovske Vinohrady, Prague, CZECH REPUBLIC

2. , Zdravotnická záchranná služba hl. města Prahy (EMS Prague), Praha 10, CZECH REPUBLIC

3. , Zdravotnická záchranná služba hl. města Prahy (EMS Prague), Prague, CZECH REPUBLIC

Keywords: decision making, labour, obstetrics, prehospitalcare

Abstract :**Decision making and prehospital management of labour a obstetric complications**

D. Brynda^{1,2}, K. Vesela^{2,3,4}, P. Kolouch⁴, M.J.Halaška^{1,2}

¹Department of Gynaecology and Obstetrics, Third Faculty of Medicine, Charles University and FNKV University Hospital, Prague

²Third Faculty of Medicine Charles University, Prague

³Department of Anaesthesia and Intensive Care medicine, Third Faculty of Medicine, Charles University and FNKV University Hospital, Prague

⁴EMS Prague

Background

Life as an emergency physician is crammed full of decisions and therefore full of judgement. The world of the emergency physician is an uncertain one, where we are required to make difficult decisions on a daily basis.

Method

The protocol was developed by analysing individual indicators during childbirth that together summarise and create a decision-making chain.

Results

It is a unique algorithm of the decision-making process related to problems in childbirth and obstetric problems and aids their resolution during urgent care in hospital. The protocol enables a doctor to come to a decision as to whether a woman in labour should be transported to hospital or if it is necessary for delivery to be carried out on the spot. It gives a practical introduction how to master a physiologic birth and possible complications such as a shoulder dystocia or a breech presentation. ...

Conclusion

It was found that correct and effective usage of protocols and check lists can lower mistakes made when examining a patient, raise the quality of pre-hospital urgent care, and also improve the prognosis and outcome of the patient.

#17922 : What is the inter-rater agreement of injury classification using the WHO minimum data set for emergency medical teams?**Authors:**

Anisa Jabeen Nasir Jafar (1), Jamie C. Sergeant (2), Fiona Lecky (3)

1. University of Manchester, NHS, Manchester, UK

2. Centre for Biostatistics, University of Manchester, Manchester Academic Health Science Centre, Manchester, UK, Arthritis Research UK Centre for Epidemiology, Centre for Musculoskeletal Research, Manchester Academic Health Science Centre, University of Manchester, Manchester, UK, Manchester, UK

3. Emergency Medicine, CURE, Sheffield, UK

Keywords: minimum data-set; emergency medical teams; inter-rater agreement; injury score

Abstract :

Background

The year 2013 saw the publication of minimum standards for medical teams working internationally in response to disasters. This has been a true game-changer and pivot point for emergency medical team (EMT) practice worldwide and has set in motion a process of world health organisation (WHO) verification which seeks to ensure that EMTs are working to a minimum acceptable standard and when called upon to assist a foreign government with a disaster, they are actually able to perform as expected. Within this process it was recognised that in order for EMTs to develop to this standard, certain guidelines for best practice would be needed. One area which warranted its own working group was the minimum data set (MDS) for daily reporting. In 2017 the WHO produced its first MDS for EMT daily reporting during sudden onset disasters (SODs), following expert consensus. The initial challenge lies in ensuring EMTs adopt this MDS under the direction of in-country ministries of health (MoHs). However the subsequent challenge is understanding the utility of the data to help resource-manage an acute response. This study looks at the specific coding of injuries to determine how reproducible the coding of severity is between practitioners using the WHO EMT MDS.

Methods

25 clinical case vignettes were developed to reflect potential injuries encountered in a SOD. These were presented in an online format between April and July 2018 to practitioners who have experience of/training in managing patients in SODs. The pool of participants was derived from three sources: UK-Med's register members, the Australian Medical Assistance Team (AUSMAT)'s Northern Territory members and the New Zealand Medical Assistance Team (NZMAT) clinical members. UK-Med hosts and trains National Health Service (NHS) medical staff for the UK Emergency Medical Team (UK EMT) and both AUSMAT and NZMAT have a register of practitioners engaged in and interested in disaster response. The participant pool was restricted to those who encounter injured patients in their clinical practice. Practitioners were asked to code each injury according to the WHO EMT MDS case classifications. Randolph's kappa statistic for free-marginal multi-rater data was calculated for the whole data-set as well as subgroups to ascertain inter-rater agreement

Results

86 practitioners responded, giving >2000 individual case responses. Overall agreement was moderate at 67.9% with a kappa of 0.59 [CI 0.49,0.69]. Despite subgroups of paramedics (kappa 0.63 [CI 0.53,0.72]), doctors (kappa 0.61 [CI 0.52, 0.69]) and those with disaster experience (kappa 0.62 [CI 0.52, 0.71]) suggesting slightly higher agreement, their CIs (and those of other subgroups) suggest overall similar and moderate levels of practitioner agreement in classifying severity of injury.

Conclusions

An inter-rater agreement of 0.59 is considered moderate, at best, however it gives MoHs some sense of how tightly they may interpret injury data derived from daily reports using the WHO EMT MDS. Similar studies, with weighting for injury likelihood using sample data from true SODs would further refine the level of interrater agreement to be expected. Consequently MoHs may develop appropriate frameworks of resource allocation during SODs.

Trial Registration / Funding Information (only) :

AJNJ is undertaking a PhD funded by the Royal College of Emergency Medicine & Hong Kong Jockey Club Charities Trust however JCS and FL have no funding sources to declare.

#17923 : The Effect of Inferior Vena Cava Flatness Index Measurement On Computed Tomography On Clinical Outcome and Comparison With Shock Parameters In Multi-trauma Patients**Authors:**

Nazlı O Yazlamaz (1), Engin Ozakin (1), NURDAN ACAR (2), EVVAH KARAKILIC (3), Filiz B Kaya (4), Betül T. Bastug (5)

1. Department of Emergency Medicine, Eskisehir Osmangazi University/ Faculty of Medicine, Eskisehir, TURKEY
2. Department of Emergency Medicine, EMERGENCY DEPARTMENT, ESKİŞEHİR, TURKEY
3. ESKİŞEHİR OSMANGAZI UNIVERSITY FAVULTY OF MEDICINE , EMERGENCY DEPARTMENT, ESKİŞEHİR, TURKEY
4. Department of Emergency Medicine, Eskisehir Osmangazi University/ Faculty of Medicine, Emergency Department, Eskisehir, TURKEY
5. Department of Radiology, Eskisehir Osmangazi University/ Faculty of Medicine, Eskisehir, TURKEY

Keywords: Multi-trauma, hypovolemic shock, flatness index of inferior vena cava, computed tomography

Abstract :**Background:**

This study aimed to determine the flatness index of IVC on computed tomography and to investigate some variables associated with this index that were thought to be related to the diagnosis of intravascular volume depletion in multi-trauma patients.

Methods:

This is a prospective cross-sectional study. This study included adult multi-trauma patients who were admitted to the Emergency Department of Eskişehir Osmangazi University between December 1, 2017, and September 5, 2018, and underwent a thoracoabdominal computed tomography. The demographic features of the patients, trauma mechanisms, clinical outcome, laboratory results, the transverse and anteroposterior diameters of IVC and the flatness index of IVC were recorded prospectively, in our study. The variables related to the flatness index of IVC were compared using the Mann-Whitney U and Kruskal-Wallis test.

Results:

During the study period, 327 patients (89.6%) met the inclusion criteria. 229 (70.0%) were male and 98 (30.0%) were female. The mean age of the cases included in the study was 40.90 ± 17.93 (range, 18-95).

The mean transverse and anteroposterior diameters of the IVC were 30.0 ± 4.8 mm (range, 15.7-46.7 mm) and 16.7 ± 5.7 (range, 3.3-33.0 mm) respectively. Distribution of patients according to shock stages were 262 (80.1) for stage 1, 54 (16.5) for stage 2 and 11 (3.4) for stage 3, stage 4 patient stage 4 patients did not exist in our study.

The mean flatness index of IVC was 2.1 ± 1.1 , ranged between 0.7-9.7. The median value was 1.8.

The flatness index of IVC was significantly higher in patients with stage 3 shock, who needed surgery, blood/fluid replacement and intubation within the first 24 hours. In our study, the IVC flattening index was lower in the patients discharged than in hospitalised patients.

Also, using the Spearman Correlation test, the negative relationship with systolic blood pressure, pulse rate, spO_2 and positive relationship lactate values were statistically significant.

When the blood/fluid support requirement was considered within 24 hours, the cut-off value was found to be > 1.7 with a sensitivity of 68.0% and a specificity of 53.5% for IVC flattening index.

When the need for the operation was considered within 24 hours, the predictive value was found to be > 1.59 with a sensitivity of 83.3% and a specificity of 38.7% for IVC flattening index.

When the intubation requirement was considered within 24 hours, the cut-off value with the sensitivity of 87.5% and the specificity of 66.1% was found to be > 1.95 for IVC flattening index.

Discussion and Conclusion:

There is a need for new methods for early diagnosis of hypovolemic shock. IVC diameter measurement in trauma patients may be one of these methods. The flatness index of IVC on CT is a helpful method in multi-trauma patients to predict the intravascular volume.

#17925 : Safety and Patient Satisfaction of Intranasal Diamorphine for pain relief in children in a rural (Type I) Emergency Department**Authors:**

Lyndon Wells (1), Rachel Underwood (1), Emma Underdown (1), Tom Boon (1)

1. , William Harvey Hospital , Ashford, UK

Keywords: Safety, 'Patient Satisfaction', 'Intranasal Diamorphine' , pain, children

Abstract :**Aim:**

To assess the safety events and child/carer experience following the new introduction of Intranasal Diamorphine.

Background: Royal College of Emergency Medicine recommend considering Intranasal Diamorphine for severe pain rating 7-10 and state pain relief is related to patient satisfaction ⁽¹⁾. In November 2017, Intranasal Diamorphine was introduced into our Emergency Department using the established Evelina Children's Hospital formulary. The patient experience has been favourable in large multicentre studies with serious adverse events such as respiratory and central nervous system depression reported as less than 18 in 1000 ^(2,3). The most common mild adverse events side are nasal irritation and GI discomfort ⁽²⁾. We decided to study these parameters in our rural ED setting.

Methods:

Single Centre retrospective cohort study; every patient aged 1-16 who received Intranasal Diamorphine in the Paediatric Emergency Department (as recorded in controlled drugs book from November 2017 to August 2018). We recorded, age, presentation and initial pain score.

Weight and dose given were recorded and any documented adverse effects. A trust wide DATIX search of key words 'Intranasal' or 'Diamorphine' was performed for any undocumented adverse effects including feedback from paediatric pharmacist and staff.

We contacted all children/carers by telephone interview with subsequent letter for non-responders and asked for both qualitative and quantitative feedback regarding their experience of Intranasal Diamorphine.

Results:

Data was collected for 80 children, mean age was 7 years old, 80% presented due to limb trauma, 13% due to burns, 7% other. The initial pain score was documented in 89%, with average score of 7.1.

Safety: No serious adverse events were recorded and no DATIX reports identified. There were 2 (2.5%) cases of vomiting/sickness reported post administration. The correct dose as per departmental guideline was given in 66 out of 80 cases. 10 had too small a dose prescribed (max error 1mg) and 4 had too large a dose (max error 0.5mg).

Patient/carer satisfaction: Child and parent satisfaction was on average 4.6 out of 5. Comments included "easy to administer", "helped a lot", "quick and effective" and "very helpful before manipulation".

Conclusion:

Following recent introduction to our emergency department, our study shows that use of Intranasal Diamorphine is safe with minimal reported side effects and importantly achieves a high level of child/carer satisfaction in the Emergency Department. Further governance will focus on reduction of prescribing errors.

Trial Registration / Funding Information (only) :

Trial Registration- no appropriate register, non clinical work, This study did not receive any specific funding Ethical approval and informed consent: « Not needed. »

#17926 : A new risk assessment model for the stratification of the thromboembolism risk in medical patients**Authors:**

giovanni maria vincentelli (1), sergio timpone (2), giuseppe murdolo (3), Iginio Fusco Moffa (4), Paolo diego L'angiocola (5), francesco borgognoni (6), manuel monti (7)

1. emergency, fatebenefratelli, rome, ITALY
2. emergency, fatebenefratelli rome, Rome, ITALY
3. internal medicine, Perugia Hospital, perugia, ITALY
4. Department of Public Health, Usl Umbria 1 , perugia, ITALY
5. cardiology, Gorizia hospital, gorizia, ITALY
6. emergency, perugia, perugia, ITALY
7. emergency, Usl Umbria 1 , Assisi, ITALY

Keywords: venous thromboembolism, thromboembolism risk , pulmonary embolism ,thromboprophylaxis.

Abstract :

BACKGROUND: In hospitalized medical patients, the venous thromboembolism (VTE) risk is notable. Nevertheless, the available assessment model (TPF) is generally underused. In this work, we propose an ex novo risk assessment model based on the elaboration of the clinical data exhibited by the VET patients. Differently from previous studies, the proposed approach does not exploit pre-established models, resulting in a more valid and easy-to-use score.

METHODS: We performed a double case-control observational study. For each case of VTE, we enrolled two consecutive patients without VTE of equal sex and age group.

RESULTS: We analyzed the data of 1215 patients, 409 with VTE and 806 case-control. 365 patients (30%) were in charge to the EM department, while 850 patients (70%) to the IM one. The VTE risk factors with more statistical significance ($P < 0.01$) are: previous VTE, active cancer, known thrombophilic condition, immobilization, chronic venous insufficiency, hyperhomocysteinemia, central venous catheter, recent hospitalization. Obesity, recent surgery, family history of VTE, hormone therapy and treatment with drugs that stimulate hematopoiesis are resulted at intermediate statistical significance ($P < 0.05$ but > 0.01). A multiple logistic regression was used with robust standard errors and forward selection of the candidate variables using the Bayesian information criterion. A new score is developed, the "TEVere Score", which shows a higher specificity and sensitivity (respectively 43.3 and 87.5, with accuracy 72.1) compared with the Padua, the Kuscer and the Chopard Score. TEVere Score also exhibits a greater predictive validity for thromboembolism risk (AUROC 0.7266; 95% CI: 0.71 to 0.73) than the Kuscer Score (AUROC 0.6891; 95% CI: 0.67 to 0.70) ($P = 0.0093$).

CONCLUSIONS: The TEVere Score has proven to exhibit a higher accuracy than the other scores commonly used in clinical practice to stratify the thromboembolism risk.

Trial Registration / Funding Information (only) :

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported. Informed consent was obtained from all the subjects or their relatives. The protocol was approved by the Fatebenefratelli Hospital Ethics Committee

#17927 : Physician initial assessment times based on CTAS scores - are we meeting the recommendations?**Authors:**

Sneha Lohan (1), Ryan Ramos (2), El-Baba Mazen (3), Leila Salehi (4), Qamar Amin (5), Rahim Valani (5)

1. Family Medicine, McMaster University, Toronto, CANADA
2. Faculty of Medicine, University of Toronto, Toronto, CANADA
3. Faculty of medicine, University of Toronto, Toronto, CANADA
4. Emergency Medicine / Family Medicine, McMaster University, Toronto, CANADA
5. Emergency Medicine, University of Toronto, Toronto, CANADA

Keywords: CTAS Physician assessment guidelines

Abstract :

Background: The Canadian Emergency Department Triage and Acuity Scale (CTAS) was developed to prioritize patient care in the Emergency Department (ED). Physician initial assessment (PIA) time recommendations are based on the CTAS number assigned to a patient. In the optimal setting, these guidelines have clinical and operational benefits by improving patient outcomes and workflow within the ED. However, with increasing ED visits, overcrowding, and complex patient care, the recommended PIA times may not be achievable. The purpose of this study was to determine whether CTAS PIA times were met in a sample of EDs in Ontario, Canada.

Methods: This was a retrospective review of adult patients, > 18 years of age, who presented to the ED from January 2016 to December 2017. The four EDs in this study had a fee-for-service physician payment model. Patient demographics, date and time of visit, and physician initial assessment times were recorded. Data was analyzed based on CTAS score and further stratified by time of visit during the day, season, and age.

Results: There were 578,863 visit encounters over the two years. 50,700 were excluded due to incomplete data. The average age of the patient was 50.7 years (SD = 20.7) and 53.6% were female. The majority of the patients were in their sixth decade of life. The encounters representing CTAS I-V were 1.3%, 32.9%, 51.0%, 13.3%, and 1.5% respectively. Only 30.6% with a CTAS I met the recommendations, with a median PIA time of 7.8 min (IQR: 1.2-23.0). CTAS II patients had the lowest compliance at 11.5% (median 73 min, IQR: 31.8-138.0) and CTAS V was the highest at 81.6% (median 54 min, IQR: 25.8-101.0). CTAS II patients in the winter season showed the greatest deviation away from recommended PIA with only 9.2% compliance (median 81 min, IQR: 37.8-147.0).

Conclusion: The CTAS target times were not met in four EDs in Ontario. To optimize the functional flow of EDs and ensure an equal standard of care across all EDs, a change in the guidelines is suggested. This change must be considered in light of increasing patient ED visits, overcrowding, bed-boarding, and health complexity. The question remains of whether policy makers ought to review guideline targets or offer alternative strategies to ensure performance compliance.

Study approved by Hamilton integrated research ethics board (McMaster University). Project number 2018- 5134-C. Approval granted October 22, 2018.

Trial Registration / Funding Information (only) :

Funding: This study did not receive any specific funding.

#17929 : What is the impact of an early holistic patient assessment by a nurse practicing an advanced practice role of case manager in an Emergency Department

Authors:

Yves MAULE (1)

1. Médecine Critique, CHU BRUGMANN, Bruxelles, BELGIUM

Keywords: Emergency services, Nurse Case Manager, Impact, Outcome, Competences, Advanced Nurse Practice, AACN Synergy Model for Patient Care

Abstract :

One of the major challenges facing public health is the continuing increase in the attendance of emergency services that leads to chronic congestion and has a significant impact on the quality and cost of care provided in these services.

Various initiatives have been taken with the aim of controlling this increase in activity without any convincing results (triage system, redesign ED, addressing patient to First line medicine,...).

This increase in activity exists all over European countries and an effective adaptation in some countries is the emergence in the ED of advanced nurse practice through the creation of new functions entrusted to nurses who have followed a specific education program.

The objective of this pre-experimental mono-centric research is to assess the impact of the implementation of an advanced practice function nurse represented by case management within an emergency department in a country without experience in this area of practice.

The results of this research, which have as a conceptual framework the American Association of Critical care nurses "synergy model for patient care" demonstrate for patient with determined characteristic that there is a statistically positive impact on the time of first contact with the doctors, the length of stay in the emergency room, the times to hospitalization and the rate of patient referred to an external service but also concerning the skills implemented by the nurses placed in a function of Case manager.

#17939 : What is the impact of an early holistic patient assessment by a nurse practicing an advanced practice role of case manager in an Emergency Department**Authors:**

Yves MAULE (1)

1. Médecine Critique, CHU BRUGMANN, Bruxelles, BELGIUM

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#17931 : An observational study in emergency department- what future nurses need to know and do**Authors:**

Fatjona Kamberi (1), Enkeleda Sinaj (2)

1. PhD,Lecturer, Faculty of Public Health,University of Vlore , Vlore, ALBANIA

2. PhD,Lecturer, Faculty of Technical Medical Sciences, University of Medicine, Tirana, Albania, Tirana, ALBANIA

Keywords: emergency department, nurse, gender differences, cardiac and respiratory complaints.

Abstract :**Introduction**

To enhance the quality of care to their patients' nurses in emergency department need to have the capacity for rapid assessment and treatment to patients in the initial phase of illness/trauma or in life-threatening situations as well in helping physicians in treating patients appropriately.

Methods

The aim of this study was to take an overview of complex more frequent health problems presented in the emergency department and to explore gender differences in patient characteristics presented complaints. The study took place in December 2017, at Vlore Regional Hospital, Albania and the observation lasted about two weeks.

Results

The mean age of patients were 51.84years, SD \pm 19.19, age interval [14-78] with the most frequent age 60. In total were presented 25 patients, 48% female, and 52% male. Most prevalent complaints presented were appendicitis acute (16%); 95%CI [4.54-36.08] and all patients were women. Male patients with cardiac and respiratory complaints respectively (12%); 95%CI [2.55-31.22] and acute cholecystitis with prevalence in man (67% versus 33%); 95%CI [9.43-99.16] versus 95%CI [0.84-90.57]. Other health conditions were acute pancreatitis and intoxications.

Conclusion

The results evidenced that most prevalent complaints were non-communicable conditions in man and diagnosis which need chirurgical treatment with no gender differences. Future nurses must be prepared to recognize and address actively and efficiently in a timely manner to health issues as they emerge as well to address non-communicable conditions for prevention and better management.

#17935 : Grey-white matter ratio measured using early unenhanced brain computed tomography shows no correlation with neurological outcomes in patients undergoing targeted temperature management after cardiac arrest**Authors:**

Jun Young Hong (1), Dong Hoon Lee (1), Je Hyeok Oh (1), Sun Hwa Lee (1), Yoon Hee Choi (1), Soo Hyun Kim (1), Jin Hong Min (2), Su Jin Kim (1), Yoo Seok Park (1)

1. , none, Seoul, KOREA

2. , none, Daejeon, KOREA

Keywords: Grey-white matter ratio, Cardiac arrest, Neurological outcome, Targeted temperature management, Post-cardiac arrest syndrome, Prognostic factor

Abstract :

Background: Unenhanced brain computed tomography (CT) is frequently performed to evaluate the cause of cardiac arrest in the early stages following the return of spontaneous circulation (ROSC). Accordingly, numerous studies on have been performed on associations between poor neurological outcome in patients with PCAS and evaluative modalities grey-white matter ratio (GWR) measured by brain CT. However, these previous studies and guidelines were subject to several limitations: (1) Because the cut-off values of the GWR varied for predicting poor outcomes, they are difficult to apply in clinical settings; (2) the time from cardiac arrest to brain CT following the ROSC was inconsistent; and (3) prior investigations were mostly retrospective, single-centred, and featured small sample sizes.

Aim: This prospective, multi-centred, observational study evaluated whether GWR assessed via early CT within 2 hours after the return of spontaneous circulation (ROSC) following cardiac arrest is associated with poor neurological outcomes after 6 months in post-cardiac arrest patients treated with targeted temperature management (TTM).

Methods: This study used data from the Korean Hypothermia Network prospective registry obtained from November 2015 - October 2017 to assess patients with out-of-hospital cardiac arrest (OHCA) who underwent brain CT within 2 hours following the ROSC. The primary endpoint was the neurological outcome 6 months post-cardiac arrest (cerebral performance category; CPC). The GWR was measured using early brain CT images. The subgroup analysis examined the difference in GWRs obtained from early and repeated brain CT.

Results: During the study period, 731 patients were enrolled in 20 hospitals, and the corresponding data were recorded in the KOHRN-pro registry. Of the enrolled patients, 219 were excluded. Five-hundred-twelve patients were enrolled. Good (CPC 1-2) and poor (CPC 3-5) neurological outcomes were observed in 162 (31.6%) and 350 (68.4%) patients, respectively. The multivariate logistic regression analysis revealed that the GWR measured using early brain CT was a statistically non-significant predictor of poor neurologic outcomes ($p = 0.727$). Of the 77 patients who received repeated brain CT within 7 days of admission, 25 (32.5%) and 52 patients (67.5%) showed good and poor outcomes. In patients with poor outcomes, the mean GWR obtained from early and repeated CT images were 1.171 ± 0.058 and 1.091 ± 0.133 , respectively ($p < 0.001$). However, there was no statistically significant difference between the GWRs in patients with good outcomes.

Conclusion: The GWR measured using early brain CT within 2 hours after the ROSC was not an independent factor predictive of poor neurologic outcomes at 6 months in post-OHCA patients treated with TTM. In patients with poor neurological outcomes, repeated CT GWRs were lower than early brain CT GWRs.

Trial Registration / Funding Information (only) :

Trial Registration: ClinicalTrials.gov (Identifier: NCT02827422) **Funding:** none **Ethical approval and informed consent:** This study was approved by the Institutional Review Board (IRB) of each hospital and was registered to the clinical trial registry platform. Informed written consent was obtained for all patients enrolled in this study, and the protocol was approved by the IRB.

#17936 : The management of late presentation head injury in the Emergency Department**Authors:**

Donna Clark (1), Carlyn Davie (1), Gregor Campbell-Hewson (1)

1. Royal Infirmary of Edinburgh, NHS Lothian, Edinburgh, UK

Keywords: Head injury, delayed

Abstract :**The management of late presentation head injury in the Emergency Department.**

Clark D, Davie C, Campbell-Hewson G

Emergency Department, Royal Infirmary Edinburgh

Emergency Department, St Johns Hospital Livingston

Objectives

To evaluate the epidemiology, management and outcome of a consecutive sample of adult patients presenting to the Emergency Department more than 18 hours after sustaining a traumatic brain injury.

Methods

It is common for patients to present to the Emergency Department (ED) a significant time after sustaining a head injury. There are limited data about this group and a lack of evidence based guidelines for their assessment, investigation and management.

We conducted a retrospective, consecutive analysis of all adult patients (>16 years of age), attending the EDs of a large teaching hospital and a district hospital, with a delayed presentation after head injury over the year 2015.

ED electronic records were searched using a sensitive keyword free text search. Data were collected including; routine demographics, how they presented to the ED, the time since injury, the mechanism of injury, presenting symptoms, co-morbidities (specifically liver disease, AVMs, thrombocytopenia, haemophilia or previous significant head injuries), significant medications (warfarin, clopidogrel, NOACs, dipyridamole or aspirin), significant examination findings, type and results of any the imaging, the total length of stay in ED, the discharge diagnosis and outcome.

Results

674 patients with traumatic brain injury more than 18 hours after injury were identified for analysis. Of these patients, the median age was 34 years (Male: female – 1:1). The most common mechanism of injury was a fall less than 2 metres. The majority of patients had headache as one of their symptoms. 224 (33%) had a CT after ED assessment, with only 14 abnormal results reported. None of these patients required any neurosurgical intervention. The developed regression model shows that delayed presentation patients with symptoms of vomiting and amnesia were more likely to have an acutely abnormal CT scan. The odds ratio was 2.98 for vomiting (95% CI 1.001-- 9.02) and odds ratio of 5.47 for amnesia (95% CI 1.51.78)

Conclusions

This analysis has demonstrated that delayed presentation is common after head injury. CT imaging had a low diagnostic yield in this cohort and did not lead to a change of management in any case. In the study population patients with a delayed presentation after head injury did not appear to be a high risk group for serious pathology. The findings suggest that there should be a comparatively high threshold for CT scanning in such

patients. The model demonstrates that amnesia was the symptom most associated with acutely abnormal CT findings, with vomiting also associated with positive scan result.

Disclosure of Interest: None declared

#17937 : Comparative analysis of cerebral oximetry readings as a predictive analytic tool to differentiate Todd's paralysis and ischemic stroke patients in a PED Stroke Alert.

Authors:

Thomas Abramo (1), Zena Leah Harris (2), Hailey Hardgrave (3), David Williams (4)

1. Pediatrics, UAMS, Apex, USA
2. Pediatrics, Lurie Children's Hospital, Chicago, USA
3. Pediatrics, UAMS, Littel Rock, USA
4. Pediatrics, UAMS, Little Rock, USA

Keywords: Cerebral Oximetry, Pediatric Stroke

Abstract :

Background: Recognizing acute pediatric stroke requires a high index of suspicion. Seizures occur in 20-48% of stroke cases, while 33% of acute focal neurologic deficits (Todd's Paralysis) have non-ischemic pathologies that mimic stroke.

Cerebral Oximetry can detect stroke location and type (ischemic or hemorrhagic), with hemispheric r_cSO_2 readings $<49\%$ and r_cSO_2 discordance > 10 having a 100% positive predictive value. Hemispheric r_cSO_2 readings of $< 60\%$ or $>80\%$ during seizures correlate with generalized and focal seizures. Post-seizure r_cSO_2 readings return to pre-seizure readings. Ipsilateral focal seizure r_cSO_2 readings correlate to the focal side and show wide interhemispheric r_cSO_2 discordance.

Todd's paralysis is a common post-seizure activity, a stroke mimic, is often a trigger for stroke alerts, and lacks cerebral physiological objectivity. Investigating cerebral physiology via cerebral oximetry to differentiate between ischemic stroke and Todd's paralysis is highly valuable.

Purpose: Comparative correlational analysis of bi-hemispheric r_cSO_2 readings in Todd's paralysis and ischemic stroke patients in a Pediatric Emergency Department (PED) stroke alert system.

Method: Observational PED stroke alert system case analysis of Todd's paralysis and ischemic stroke patient's bi-hemispheric r_cSO_2 readings (60 minutes, 5 seconds readings).

Result: All 148 patients triggered a PED stroke alert from 2012-18. Age: Todd's 5.6 ± 3.3 SD, Ischemic stroke 5.9 ± 3.5 . Todd's paralysis seizure prior to PED (N=77) mean -23.9 minutes (95%CI 6.9,30.5). PED seizure activity (N=21) mean 12.3 minutes (95%CI 5.6,29.1). During PED seizure Left r_cSO_2 readings mean 46.2% (95%CI 36.5,53.5), Right r_cSO_2 readings mean 42.6% (95%CI 32.4, 47.8).

Todd's paralysis lasted mean 4.28 hours (95%CI 1.9,4.7), Ischemic Stroke weakness prior to PED arrival mean 3.1 hours (1.9, 6.9).

Left Side Weakness	Disease State	N	Mean	95%CI	P Value
Left r_cSO_2	Todd's Paralysis	46	71.4%	(69.5,75.3)	<0.0001
	Ischemic	25	49.6%	(46.8,52.4)	
Right r_cSO_2	Todd's Paralysis	46	70.5%	(68.9,72.6)	0.85
	Ischemic	25	74.2%	(71.9%,75.5)	
Interhemispheric r_cSO_2 readings discordance: Left -Right r_cSO_2 readings -					
	Todd's Paralysis	46	0.45	(-2.9,3.8)	0.9
	Ischemic Stroke	25	-24.6	(-29.5,-19.7)	<0.0001
Right Side Weakness(Disease State	N	Mean	95%CI	P Value
Left r_cSO_2	Todd's Paralysis	46	71.5%	(69.8,71.9)	0.87
	Ischemic	25	74.6%	(71.8,77.3)	
Right r_cSO_2	Todd's Paralysis	46	70.5%	(68.9,73.6)	<0.001
	Ischemic	25	49.2%	(46.9,51.5)	
Interhemispheric r_cSO_2 readings discordance: Left -Right r_cSO_2 readings-					
	Todd's Paralysis	46	1.1	(-2.1,4.2)	0.9
	Ischemic Stroke	25	-25.3	(-20.4,-30.2)	<0.0001

All Todd's paralysis patient's PED seizure activity was generalized, and their seizure bi-hemispheric r_{c,so_2} readings were significantly less than post-seizure reading $p < 0.001$. Todd's r_{c,so_2} reading discordance difference was not significant. Comparing Todd's weakness to ipsilateral Ischemic stroke r_{c,so_2} readings, stroke r_{c,so_2} readings had lower r_{c,so_2} readings ($p < 0.001$).

Conclusion: During Todd's paralysis, Todd's paralysis weakness side their corresponding ipsilateral r_{c,so_2} readings showed non-cerebral pathological r_{c,so_2} readings, signifying normal ipsilateral cerebral physiology. Comparing Todd's paralysis weakness's ipsilateral r_{c,so_2} readings versus Ischemic stroke's weakness ipsilateral r_{c,so_2} readings, ischemic stroke r_{c,so_2} readings were significantly lower than the Todd's paralysis weakness's ipsilateral r_{c,so_2} readings. Hemispheric cerebral oximetry monitoring has shown its functionality for differentiating between ischemic stroke and a stroke mimic Todd's paralysis, further validating cerebral oximetry's role in the initial assessment for pediatric strokes and neurological emergencies.

#17943 : Horizontal Violence in the Emergency Department: A reality within our shores?**Authors:**

Francesca Spiteri (1), Rene Camilleri (2)

1. , Mater Dei Hospital, Malta, Tal-Qroqq, MALTA

2. , Mater Dei Hospital, Msida, MALTA

Keywords: Horizontal violence, bullying, discrimination, harassment

Abstract :

Every health professional has a right to work in a safe, supportive workplace free of harassment. Bullying and discrimination have no place in any aspect of emergency medicine. The Emergency Department is a highly stressful environment and as a result it is possible that bullying and harassment under the umbrella of Horizontal violence (HV) can occur. (*Jamieson, 2015*). In 2017 the Australasian College of Emergency Medicine (ACEM) has published a damning report regarding Discrimination, Bullying and Sexual Harassment (DBSH) Emergency physicians face at work from their peers and colleagues. The survey had an overwhelming response of over 2100 physicians and was also given exposure through various media. Emergency Departments in other counties including US and UK, are also publishing studies regarding this serious and growing problem (*Li SF, 2015*). In view of this a similar study was carried out within the Emergency Department at Mater Dei Hospital, Malta. The aim of the audit is to see whether bullying, discrimination and harassment (BDH/ Horizontal violence) is also a reality within the Emergency department (ED) in Malta and what can be done to ensure that a safer environment is provided to all trainees and physicians within the department. An online questionnaire (via GoogleForms) modelled around the one utilised by the Australasian College for Emergency Medicine (ACEM) titled the Discrimination, Bullying and Sexual Harassment (DBSH) project was distributed amongst doctors (n=68) working in the Emergency Department ranging from Consultants to Foundation Doctors between April and May 2018. This was anonymous and randomised and asked a series of questions regarding experience of bullying, discrimination and harassment they incurred within the ED, as well as the frequency, and the results were then compared with the Australasian Cohort. Ethical approval was also obtained. 49.8% of the Australasian cohort stated they experienced Discrimination, Bullying, Harassment (DBSH) when compared to 84% of the Maltese Cohort. 68.3 % of the Maltese ED responders experienced bullying from other specialities. 70% of the Australasian cohort stated it happened within the ED. The department from which the bullying majorly stemmed from was General Medicine (40.7%) in the case of the Maltese responders. 90% of the Maltese ED cohort felt they were discriminated against when they were not allowed to perform, or at least assist in practical procedures within the ED thus affecting training. Horizontal violence in the ED is a stark reality. A strict non tolerance policy with regards to these negative behaviors need to be implemented with clear cut reporting pathways so as to encourage physicians in the ED to flag these negative behaviors thus ensuring a safer environment for all.

Trial Registration / Funding Information (only) :

Ethical approval obtained

#17944 : Managing septic shock in MDH Emergency Department: Are we following guidelines?**Authors:**

Francesca Spiteri (1), Sarah Vella (2)

1. , Mater Dei Hospital, Malta, Tal-Qroqq, MALTA

2. , Mater Dei Hospital, Msida, MALTA

Keywords: Sepsis, shock, Mater Dei Hospital,

Abstract :

The overall mortality rate for patients admitted with severe sepsis in the UK is about 35%. This is approximately 5 times higher than that of ST elevation myocardial infarction and stroke. Severe sepsis is a time sensitive condition which is often poorly recognized and treated and, when it comes to septic shock, one study showed that for every hour appropriate antibiotic administration is delayed, there is an 8% increase in mortality. "Surviving Sepsis Campaign" recommendations include early fluid resuscitation and antibiotic administration. This Cross-sectional audit was carried out at Mater Dei Hospital Emergency Department, Malta to determine whether international standards of care are being met at our Emergency Department (ED) and to benchmark current performance against clinical standards and to identify areas in need of improvement. Data was gathered from admission sheets and documents of patients admitted with septic shock in February & March 2018. Data collected from medical notes included demographics, comorbidities, triage score, parameters, lactate, time to fluids, oxygen, antibiotics & blood cultures. Data was then collected with regards to qSOFA score, time of first antibiotic dose and appropriateness of empirical therapy, fluid/inotrope administration, source control and mortality rate. The audit involved 105 patients with a mean age of 74 years - 61 males. qSOFA calculated for 67 patients – no GCS documented in the remainder of cases. There was a good correlation found between triage score and qSOFA – none of the qSOFA-3s were triaged lower than ESI-2. Only 2 patients required ICU admission; both triaged ESI-2. Senior medical staff reviewed 81.9% of cases. 30-day mortality was 21.9%. The average time to antibiotics was 183 minutes (95%CI 182.7 ± 33.3) and the average time to antibiotics in qSOFA-3s was 126 minutes (95%CI 126 ± 57.3). Only 24.4% of those with lactate >2 and 1 of the qSOFA-3s received antibiotics within 1st hour. Only 63.8% of patients received antibiotics according to the relevant guideline. 49.5% of patients had blood cultures taken prior to antibiotic administration. there was no significant correlation between senior review and earlier antibiotic administration. Only 53.6% of those presenting with a systolic blood pressure <90mmHg received fluids within 1st hour and there was a significant relationship between mortality and age ($p = .012$), and mortality and qSOFA ($p = .036$). There was no significant correlation between mortality and time of antibiotic administration. Antibiotics are being administered close to the 3 hour mark, with the average time to antibiotics being around 2 hours for the more serious cases. Possible reasons may include atypical presentation; difficult venous access, history of drug reactions, ED crowding and inadequate staffing. The average time to fluids was better at 118 minutes but only about half the patients with low blood pressure were rehydrated in the 1st hour. Antibiotic administration according to guidelines was lacking. Repeated education of ED medical staff about the various presentations of sepsis and reinforcement of sepsis-treatment algorithms needs to be applied. Local guidelines for empirical antibiotic therapy should be readily available to prevent liberal use of antibiotics.

Trial Registration / Funding Information (only) :

Ethics approval obtained.

#17946 : Early predictor prognostic factors of Guillain Barre in the Emergency Department.**Authors:**

Ina Buxhelaj (1), Jera Kruja (1), Besiana Hysi (2)

1. Neurology Department, Mother Teresa UHC Tirana, tirana, ALBANIA
2. Emergency Department, Mother Teresa UHC Tirana, tirana, ALBANIA

Keywords: Autoimmune Disease, Guillain Barre Syndrome, Prognosis, Prognostic factors, Nadir, Respiratory Insufficiency, MRC sum score.

Abstract :

Introduction: GBS is a term that summarizes a number of heterogeneous clinical syndromes, with the characteristics of flaccid ascending paralysis and a high variability in prognosis and progression of the disease, from an autoimmune attack of the peripheral nervous system. Despite last developments in immunotherapy, it still remains a life-threatening and disabling pathology. Numerous studies have been carried out on the development of prognostic models and the identification of early prognostic factors, just to improve and personalize the treatment for each clinical case.

Objectives: Determination of early indicators that can be used to predict the progression of the disease during the acute phase (up to Nadir) of the GBS, based on characteristics in the Emergency Department. **Methods:** Retrospective monocentric study conducted at the Emergency Department and Neurology Clinic at UHC Mother Teresa from November 2016 to November 2018. The study included 54 patients, aged 18-83, diagnosed with GBS according to clinical criteria. For all patients, Crosstab, Hi-square test and Mann Whitney, one-way ANOVA analysis, Bonferon procedure, and Kendal's Tau correlation were used for data processing. **Results:** In 54 patients taken in the study, the female male ratio was 1.2: 1, with biphasic pattern of age-onset of disease 18-35 (23%) and 50-70 (54%). About 85% of patients refer a history of infection or other immune status approximately 10 days prior to the onset of symptoms, 15% refer no infectious history or immune situation. The most frequent variant was AIDP 70.4% of patients, followed by AMAN 10% and 5 % MFS. The timing from the start of the concerns to emergency room varies from 1 to 28 days with an average of 7 days. Significant statistical correlation ($p < 0.05$) was observed between poor performance in the acute phase and age of onset of disease, days of coming at the hospital from the start of the symptoms, MRC sum score at arrival, presence of bulbar cranial nerve involvement and signs of subjective respiratory tract. There was no significant statistical link with the preceding etiology. **Conclusion:** Age of onset > 50 years, days from the onset of symptoms < 4, high MRC sum score and presence of bulbar involvement in the presentation, presence of subjective respiratory complaints, are not good predictors of the acute phase.

Trial Registration / Funding Information (only) :

None

#17947 : Comparative Analysis of Pseudo-seizure cerebral oximetry rcSO2 readings: seizure to non-seizure rcSO2 readings in a Pediatric Emergent Department.

Authors:

Thomas Abramo (1), Hailey Hardgrave (2), Zena Leah Harris (3), Abby Williams (4), David Williams (5)

- 1. Pediatrics, UAMS, Apex, USA
- 2. Pediatrics, UAMS, Littel Rock, USA
- 3. Pediatrics, Lurie Children's Hospital, Chicago, USA
- 4. Pediatrics, PEMA, Atlanta, USA
- 5. Pediatrics, UAMS, Little Rock, USA

Keywords: Pseudo-Seizure, Cerebral oximetry

Abstract :

Pediatric patients often present to the emergency department (ED) with seizures. For every first-line anticonvulsant minute delay (> 5minutes), an increase in seizures >60 minutes, decrease anticonvulsant efficacy, increase status epilepticus incidence occurs. ED physicians face a challenge distinguishing between seizures vs pseudo-seizures.

In EEG - rcSO2 seizures altered rcSO2 correlated to seizures. PED generalized seizure hemispheric rcSO2 readings were either <60% or >80% and returned to pre-seizure rcSO2 readings. A seizure's hemispheric cerebral physiology assessment tool would aid in differentiating between seizures and pseudo-seizures events. A correlational analysis of bi-hemispheric pseudo-seizure seizure rcSO2 readings is lacking.

Purpose: A correlational analysis of bi-hemispheric pseudo-seizure rcSO2 readings to non-seizure's rcSO2 readings.

Method: Observational study comparing pseudo-seizure's bi-hemispheric seizure rcSO2 readings to non-seizure's rcSO2 readings in a PED.

Results: From 2012-18, 105 PED patients with seizure activity with pseudo-seizures were analyzed. Age: 15.6 yrs + 3.3 SD, female 61.7%. No patients had true post-ictal phase. All patients had convulsive events and were diagnosis with pseudo-seizures by pediatric ED attending and or neurologist. Pseudo-seizure duration 11.8 minutes (8.9, 24.8).

Clinical Parameter rcSO2 readings: q 5 seconds recordings	N	Median	Q1,3	P-value
Pseudo-seizure activity prior to PED (Home & EMS)	78	23.9 minutes	6.9, 30.5	
PED seizure activity	105	12.3 minutes	5.6, 29.1	
All Seizures- Left Non-Seizures rcSO2 readings N= 53511		71.2%	68.2,71.7	
All Seizures- Left Seizures rcSO2 readings N=25573		72.1%	70.1,74.1	1
All Seizures- Right Non-Seizures rcSO2 readings N= 53511		70.2%	67.9,70	
All Seizures- Right Seizures rcSO2 readings N=25573		71.2%	69.6, 72.9	1

Patient Groups 0-60 min, q5 seconds N=105

13-14 years-rcSO2 readings	Mean	CI 95%	P-value
Non-Seizure Left rcSO2 N=40305	71.9%	71.8, 72.1	
Seizures Left rcSO2 N=16681	72.5%	71.6, 72.8	
Non-Seizure Right rcSO2	71.3%	71.2, 72.2	1
Seizures Right rcSO2	71.1%	71, 72.3	1
15-16 years-rcSO2 readings			
Non- Seizure Left rcSO2 N=35060	70.1%	69.7, 72	
Seizure Left rcSO2 N=13959	71.1%	71.2,73.2	1
Non-Seizure Right rcSO2	70.5%	68.6,70.7	0.9
Seizure Right rcSO2	71.4%	71.3,72.5	0.9

>16 years old Non-Seizure rcSO2 readings

Non-Seizure Left r_cSO₂ N=16054	70.8%	69.7,71.9	
Seizure Left r_cSO₂ N=7753	71.4%	71.2,72.5	1
Non-Seizure Right r_cSO₂	70.3%	69.3,71.4	0.84
Seizure Right r_cSO₂	70.4%	70.3,71.7	0.99
Patients-only One Seizure r_cSO₂ readings			
Non-Seizure Left r_cSO₂	68.1%	67.3,69.9	
Seizure Left r_cSO₂	70.1%	69.7,72.5	0.94
Non-Seizure Right r_cSO₂	67.6%	67.4,69.7	
Seizure Right r_cSO₂	69.7%	69.7,71.3	0.99
Patients with > 4 Seizures r_cSO₂ readings			
Non-Seizure Left r_cSO₂ N=53511	71.5%	71.4,72.1	
Seizure Left r_cSO₂ N=25573	71.7%	71.6,71.7	0.93
Non-Seizure Right r_cSO₂	71.3%	71.2,71.3	0.99
Seizure Right r_cSO₂	71.3%	71.2,72.3	0.99

Comparing between pseudo-seizure's bi-hemispheric seizure to non-seizure r_cSO₂ readings for age, pseudo-seizure seizure events, between first and last pseudo-seizure seizure events no statistically significant correlation correlation was found p=0.99.

Conclusion: During pseudo-seizure seizure events, bi-hemispheric seizure readings demonstrated consistent 60-80% r_cso₂ readings signifying no abnormal cerebral physiology. Comparing pseudo-seizure's seizure to non-seizure cerebral r_cSO₂ readings no significance occurred across various clinical parameters. In Pseudo-seizures, cerebral oximetry has demonstrated no abnormal cerebral r_cSO₂ readings (normal cerebral r_cSO₂ readings 60-80%) and can be used as an adjunct tool for differentiating between pseudo-seizures and convulsive seizure events.

#17949 : Artificial Neural Network Analysis to Predict Prognosis of Drug Intoxication in Emergency Department**Authors:**

KYUNGIL GHO (1), SUNGYOUP HONG (2)

1. Dept. Emergency medicine, Daejeon St.Mary's hospital, SEOUL, KOREA
2. Dept. Emergency medicine, Daejeon St.Mary's hospital, DAEJEON, KOREA

Keywords: Drug intoxication, Artificial neural network

Abstract :

Acute drug intoxication (DI) is an important issue with significant mortality and morbidity of emergency medicine. The aim of this study is to predict the risk of mortality associated with DI by artificial neural networks (ANNs) model.

The ANNs and logistic regression model were constructed using overall clinical and laboratory data of 4017 DI patients. The models were first trained on 1052 randomly chosen patients, validated and tested on the 452 patients and 120 patients respectively. Statistical indices were used to evaluate the value of the forecast in two models.

The training set, validation set and test set were not significantly different for any of the 21 variables. The back-propagation network retained excellent pattern recognition ability after the training. When the ANNs model was applied to the test set, it revealed a sensitivity of 82.3%, specificity of 80.1% for mortality. The accuracy was 82.25%. Significant differences could be found between ANNs model and logistic regression model in these parameters. When ANNs model was used to identify ALI, the area under receiver operating characteristic curve was 0.81 ± 0.04 , which demonstrated the better overall properties than logistic regression modeling ($AUC = 0.701 \pm 0.04$). Age of patients was most significant prognostic factor associated with mortality from the ANN model.

The ANNs model was a valuable tool in dealing with the mortality prediction problem of ALI following to DI. Approach with artificial intelligence can improve risk prediction and need for intensive care.

#17950 : Combination of liver enzymes, amylase and abdominal ultrasound tests have acceptable diagnostic values as an alternative test for abdomino-pelvic CT scan in blunt abdominal trauma.

Authors:

Reza Mosaddegh (1), Mahdi Rezai (1), Samane Nabi (1)

1. , Emergency medicine management Research center, Rasoul-e-Akram Hospital, Iran university of Medical S, Tehran, IRAN, ISLAMIC REPUBLIC

Keywords: Blunt abdominal trauma, liver enzymes, amylase, Intra-abdominal injury

Abstract :

Introduction: Abdominal trauma accounts for 15% to 20% of all-cause mortality of trauma. Abdomino-pelvic CT scan with intravenous contrast is considered the most accurate non-invasive diagnostic tool in detecting intra-abdominal injuries. In previous studies, rise in liver enzymes and amylase was associated with intra-abdominal injuries but the studies were not sufficient. Our aim was to assess the diagnostic values of liver enzymes and amylase for intra-abdominal injuries in blunt trauma patients.

Methods: We included blunt abdominal trauma patients who referred to three teaching hospitals in 2018. The patients who had 14 years old or more and Glasgow Coma Scale above 8 were enrolled the study if the treating physician had high index of suspicion for intra-abdominal injuries and sent the patients for abdomino-pelvic CT scan with intravenous contrast. Sensitivity, specificity, positive and negative predictive values are calculated for results of liver enzymes, amylase and abdominal ultrasound.

Results: Eventually, 300 patients with blunt abdominal trauma entered the study. Sensitivity, specificity, positive and negative predictive values of concurrent positive results of abdominal ultrasound, amylase and liver enzymes were 81.73 (95% CI, 73.2-88.1), 63.78 (95% CI, 65.36-70.61), 58.38 (95% CI, 56.36-70.61) and 84.89 (95% CI, 77.6-90.19) respectively.

Conclusion: Considering findings of the present study, the combination of liver enzymes, amylase and abdominal ultrasound results can be as an alternative method for detecting intra-abdominal injuries in patients that treating physicians have limitations for such as overweight, instability of hemodynamic and lack of CT scan facility

#17951 : WHEN CHEST PAIN UNIT STARTS WALKING

Authors:

Carmen Rodriguez (1), Pere Rull (2), German Fermin (2), Julio Olsen (2), Fernando Ajenjo (3), Bernardino Comas (1), Guiem Frontera (4), Gaspar Melis (5)

1. Emergency Department, Hospital Son Espases, Palma de mallorca, SPAIN
2. Emergency Department, Hospital Universitario Son Espases, Palma de mallorca, SPAIN
3. Emergency department, Hospital Universitario Son Espases, Palma de Mallorca, SPAIN
4. statistical service, Hospital Universitario Son Espases, Palma De Mallorca, SPAIN
5. Cardiology department, Hospital Universitario Son Espases, Palma De Mallorca, SPAIN

Keywords: CHEST PAIN, TROPONIN, ACUTE CORONARY SYNDROME, ERGOMETRY

Abstract :

Introduction and objectives:

Chest pain is one of the most frequent causes of consultation and admission to the Emergency Services. Through the creation of a specific Chest Pain Unit (CPU) is intended to increase the diagnostic performance in patients suspected of ischemic heart disease efficiently and safely, avoiding unnecessary income and improving globally the quality of care circuits.

Material and methods:

Descriptive study of the activity of the CPU between August 2017 and February 2018. Prior to its inclusion, in all patients with chest pain under study, the stratification of conventional risk in the Emergency Department was carried out according to the type of pain (typical, atypical or doubtful), chest X-ray, serial ECG (upon arrival, in case of clinical changes and at 0-3 hours) and troponin I determinations (baseline upon arrival and 3-6 hours). Based on the results, the patients were assigned to different risk groups. In patients admitted to CPU, joint assessment by the Emergency Department and Cardiology was carried out by means of anamnesis, physical examination and when it was considered indicated at an early stage, ischemia induction test based on the results of which early discharge or hospital admission was decided. Follow-up of new events in the discharged patients has been made through the computerized clinical history.

Results: During the study period, a total of 41,288 patients attended the Emergency Department. They were admitted to Unit 27. Predominantly males (59.2%), with an average age of 58 years (range 37-78). Hypertension was the most frequent cardiovascular risk factor (40.7% of cases). 18.7% of the patients were diabetic and 37% had 3 or more active CVRF at their hospitalization. As an early test for the detection of ischemia, 16 ergometries were carried out. In 13 patients (48% of the total) its performance was rejected by Cardiology due to technical causes, troponin I elevation, alternative diagnosis or comorbidity. Based on the initial assessment and the complementary examinations, 3 patients were admitted (11% of the total) and 24 were discharged (44.4% of them with a subsequent appointment in Cardiology Outpatient Consultations). The mean stay in the CPU was ≤ 24 hours in 92.5% of the cases. At discharge, 92.6% of the cases were classified as low probability thoracic pains and 7.4% as typical. In the patients discharged, a 30-day follow-up was performed and there were no readmissions in the Emergency Department due to cardiovascular events.

Conclusions: The implantation of a specific CPU allows to increase the diagnostic accuracy of the consultations for this cause in an early and efficient way, decreasing the number of hospital admissions and the referral of patients to the Cardiology Outpatient Consultations. The risk of relevant cardiovascular events in a short-term follow-up is low in patients with a negative result in the early induction of ischemia.

#17952 : THE ULTRA SAVIOR

Authors:

Carmen Rodriguez (1), Pere Rull (2), Julio Olsen (2), German Fermin (2), Fernando Ajenjo (3), Bernardino Comas (1), Maria Magdalena Parera (4)

1. Emergency Department, Hospital Son Espases, Palma de mallorca, SPAIN
2. Emergency Department, Hospital Universitario Son Espases, Palma de mallorca, SPAIN
3. Emergency department, Hospital Universitario Son Espases, Palma de Mallorca, SPAIN
4. clinical analysis laboratory, Hospital Universitario Son Espases, Palma De Mallorca, SPAIN

Keywords: CHEST PAIN, TROPONIN, ACUTE CORONARY SYNDROME, HIGH SENSITIVE

Abstract :

Cardiovascular diseases are the leading cause of death in our country and, of these, ischemic heart disease is the first in men and the second in women. The most common symptom in these patients is chest pain, which represents between 5 and 20% of the total volume of emergencies. Since 2010, ultrasensitive troponin (hs-Tn) has been proposed as a biomarker for the diagnosis of acute coronary syndrome (ACS), with a determination at 0, 3, and 6 hours, unlike conventional troponins (cTn) performed at 0, 6 and 12 hours.

-confirm if hs-Tn diagnoses the ACS earlier

--valuate the utility and accuracy of TIMI risk score and HEART risk score in the emergency department.

Prospective descriptive study of cohorts comparing cTn with hs-Tn determined in the same patient between 1/6/2015 and 30/9/2015 in HUSE.

All biochemical determinations will be carried out on Architect c16000 / i2000 (Abbot) platforms, according to the manufacturer's instructions, including conventional troponin and high sensitivity troponin (STAT Troponin-I and STAT High Sensitive Troponin-I).

Patients who went to the emergency room of HUSE due to chest pain suggestive of ischemia who met the inclusion criteria and did not present any of the exclusion criteria were consecutively included. The patients were informed of the procedure and signed informed consent. Blood samples were taken (heparin lithium tube) at 0, 3 and 6 hours after arrival at the emergency department. In samples 0 and 6, cTn I values were determined and a sample was stored for subsequent analysis of hs-Tn. The 3h sample was saved for later determination of hs-Tn, so it did not influence the patient's management.

Epidemiological variables were measured, patient characteristics, constants upon arrival, complementary tests and diagnoses at discharge and destination with interconsultation record to cardiology. TIMI and HEART were calculated as risk scores

84 patients were included in the study. The majority were men (65.4%) and the average age was 63 years (range 33-93). HTA was the most frequent risk factor (62%) and 37% presented 3 or more risk factors. 56 consultations were performed in cardiology (66.6%), of which 42% were diagnosed with non-coronary pain. This was the most frequent diagnosis (61.9%) in which there was no elevation of c-Tn/hs-Tn, with a TIMI/HEART of moderate-high risk in 61.5%/21.15%.

20 patients (24%) were diagnosed of coronary event (stable/unstable angina, NSTEMI-ACS, STEMI), with consultation to cardiology all of them, elevation of c-tn in 12 patients (60%)/hs-Tn in 13 (65 %). All patients were admitted and 12 revascularizations were performed. Respect to risk score, all patients had a moderate-high HEART and 45% a low-risk TIMI.

hs-Tn is a more accurate and faster biomarker for the diagnosis and classification of patients who come to the emergency room for chest pain, with seriation at 0-3 hours, in addition to reducing inter-consultations to cardiology.

Respect to the risk scores, HEART proves to be easy to apply in the emergency department and more accurate than TIMI, both for the non-coronary pain group and the cardiovascular events group.

#17961 : Factors determining single room assignment during influenza epidemics for patients admitted through the emergency room.

Authors:

donia BOUZID (1)

1. Emergency room Bichat Claude Bernard, apHP, paris, FRANCE

Keywords: ER, influenza, Isolation, PCR

Abstract :

Introduction: Every winter, emergency rooms (ER) have to face overcrowding with patients presenting with influenza-like symptoms, and organizational issues such as isolation and droplet precautions to avoid hospital-acquired influenza. Waiting for the influenza PCR results to determine the room assignment is not always possible. The main objective was to determine the proportion of influenza-positive patients appropriately assigned a single room and factors influencing this placement.

Methods: All patients admitted to the 1000-bed Bichat-Claude Bernard university hospital (455 single rooms) through the ER with a nasopharyngeal testing PCR for influenza were included in this observational, retrospective, monocentric study, carried out during three influenza epidemics from 2015 to 2018.

Results: A total of 1330 patients were included, 278 of them (20.9%) had a PCR positive for influenza. Overall, the median time to PCR result was 19 hours and 238 (18.3%) patients were assigned to single room (22.3% and 16.7% of patients with PCR-positive and PCR-negative influenza, respectively, $P = 0.029$). In the multivariate analysis the following parameters were associated with single-room assignment: level 1 triage (adjusted odds ratio, 1.62; 95% CI, 1.1-2.3; $p = 0.013$), PCR-positive influenza (1.46, 1.04-2.06, $p = 0.027$), and the admission during the weekend (1.39, 1.02-1.9, $p = 0.04$).

Conclusion: A PCR positive for influenza was associated with single-room assignment. However, less than one quarter of PCR-positive patients were adequately placed in single room, owed to the scarce number of single rooms and likely because of the conflicting indication for single room. Accelerating biological diagnosis could improve single-room placement

#17962 : Comprehensive validation of very early rule-out strategies for non-ST-segment elevation myocardial infarction in emergency departments: protocol for a multicenter prospective cohort study**Authors:**

Hiroyuki Azuma (1), Ken-ichi Kano (1), Hideya Nagai (1), Junya Tanaka (1), Hiroki Watanabe (1), Minoru Hayashi (1), Makoto Sera (1), Shinsuke Tanizaki (1), Shigenobu Maeda (1), Hiroshi Ishida (1), Hideyuki Matano (2), Hose Iwasaki (2), Yoshimitsu Shimada (3), Masaki Ando (4), Takayuki Ohno (4), Masaaki Inagaki (4), Toshiyasu Miura (4), Naoki Yamada (5), Youhei Kamikawa (5), Erika Yahata (5), Ryota Okada (5), Taizo Nakanishi (5), Hideaki Tsuji (5), Shunsuke Yamanaka (5), Takahisa Kawano (5), Hiroshi Morita (5), Taketsune Kobuchi (5), Tetsuya Kimura (5), Masafumi Tada (6), Andrew Chapman (7), Nicholas Mills (7), Hiroyuki Hayashi (8), Norio Watanabe (9)

1. Department of Emergency Medicine, Fukui prefectural hospital, Fukui, JAPAN
2. Department of Emergency Medicine, Fukui-ken Saiseikai Hospital, Fukui, JAPAN
3. Department of Emergency Medicine, Japanese Red Cross Fukui Hospital, Fukui, JAPAN
4. Department of Emergency Medicine, Nagoya City East Medical Center, Nagoya, JAPAN
5. Department of Emergency Medicine, Fukui University Hospital, Fukui, JAPAN
6. Department of Human behavior and Health promotion, Kyoto University Graduate School of Medicine, Kyoto, JAPAN
7. British Heart Foundation Center for Cardiovascular Science and Usher Institute of Population Health Sciences and Informatics, University of Edinburgh, Edinburgh, UK
8. Department of Emergency Medicine, Fukui University Hospital, Fukui city, JAPAN
9. Department of Human behavior and Health promotion, Kyoto University Graduate School of Medicine, Kyoto city, JAPAN

Keywords: myocardial infarction, high sensitivity troponin, clinical impression, prediction rule

Abstract :**Background:**

Recent algorithms incorporating high-sensitivity troponin (hs-troponin), such as prediction-rules and hs-troponin-based strategies to rule-out non-ST-segment elevation myocardial infarction (NSTEMI) have attained very early rule-out (within 3 h) and high negative predictive values (NPV). Although there are a large number of algorithms, they have not been comprehensively validated yet. Hence, it is not clear which of these algorithms are useful, and reliance on clinical impression is still frequent. Furthermore, evidence of a troponin assay is specific to the troponin and not applicable to hospitals using other troponin assays. We, therefore, aim to comprehensively validate the diagnostic accuracy of the clinical impression-based strategy and algorithms to rule-out NSTEMI with three widely used hs-troponin assays (Roche hs-troponin T, Abbott, and Siemens hs-troponin I).

Methods:

This is an on-going prospective multicenter cohort study, and we aim to recruit 1500 consecutive adult patients with suspected NSTEMI from five emergency departments (ED) (two tertiary-, two secondary- level community hospitals, and one university hospital) in Japan from July 2018 for about two years. We will exclude patients with ST-segment elevation on initial electrocardiogram, or maintenance dialysis. Index strategies are the clinical impression-based strategies (clinical impression-based risk estimation, electrocardiogram, and troponin tests), and the algorithms (GRACE; TIMI + 2 h troponin; HEART; EDACS; T-MACS; TRUST; the 0 h algorithm; the 0 and 1 h algorithm; and High-STEACS pathway) with troponin tests taken up to 2 h apart from the first one. The reference standard will be the composite of type 1 myocardial infarction and death within 30 days, which are independently adjudicated by cardiologists. All patients will be followed up using the clinical records of the hospitals and structured telephone interviews. The outcome measures will be NPV, sensitivity, and proportion of patients with NSTEMI ruled-out., and they will be presented with the 95% confidence interval for each troponin. We have obtained written informed consent from the participants. This study has been approved by the Ethics Committees of the Kyoto University (R1380) and the five hospitals.

Interim results:

A total of 230 patients presented to the EDs with suspected myocardial infarction, and the treating physicians required troponin tests. We have currently excluded 88 patients who presented later than six hours from onset, and 37 patients with STEMI. We have included 84 patients for suspected NSTEMI so far, with a median age of 73 [interquartile range (IQR) 59 - 80] years, of whom 36 (43%) were male. Chest pain was present in 65 (77%) patients. The median time from onset to the first troponin sampling was 2.0 [IQR 1.0 to 3.0] h.

Discussion & Conclusions:

The study is progressing well; however, patient recruitment is slow. Hence, we are in the process of enrolling more hospitals.

Trial Registration / Funding Information (only) :

Trial registration: This study is registered in the UMIN-CTR registry (UMIN 000029992). Funding: The study is supported by grants from the Nakatani Foundation and from Radiometer.

#17970 : Association between hospital bed occupancy and outcomes in emergency care: a cohort study in Stockholm County, Sweden, 2012–2016**Authors:**

Björn af Ugglas (1), Therese Djärv (1), Martin Holzmann (1)

1. , Karolinska Institutet, Stockholm, SWEDEN

Keywords: Emergency department, Hospital bed occupancy, Patient outcomes, Mortality

Abstract :**Background:**

Previous studies have found an association between high hospital bed occupancy and increased mortality among patients admitted to hospital. We aimed to evaluate the importance of bed occupancy for adverse outcomes among all patients visiting the emergency department (ED).

Methods:

Adults visiting six EDs in Stockholm County, Sweden, from 2012 to 2016 were categorized into groups by bed occupancy: < 85%, 85%–89% (reference group), 90%–94%, 95%–99%, 100%–104%, and > 104%. Cox regression was used to estimate adjusted hazard ratios (HR) with 95% confidence intervals (CI) for 30-day mortality, in-hospital mortality, readmission for inpatient care within 30 days of hospital discharge, and revisits to the ED within 7 days.

Findings:

A total of 816,832 patients with 2,084,554 visits were included in the analysis. Mean bed occupancy was 93.3%. In total, 28,112 patients died within 30 days (1.3% of visits), and 17,966 patients died in hospital (3.9% of admissions). Bed occupancy was not associated with 30-day mortality or with in-hospital mortality, although increased adjusted point estimates indicated associations of bed occupancy > 104% with 30-day mortality (HR = 1.10, 95% CI: 0.96–1.27) and with in-hospital mortality (HR = 1.09, 95% CI: 0.92–1.30). High bed occupancy led to an increased length of stay in the ED and a reduced admission rate for inpatient care.

Interpretation:

Our findings indicate that health care staff are able to prioritize correctly without compromising patient safety at high bed occupancy, despite increased lengths of stay in the ED and a decline in admissions for inpatient care. However, we believe that practitioners should aim for a bed occupancy < 105%, given our observation of a trend towards higher mortality at \geq 105% bed occupancy. Preparedness to reallocate resources to the ED is needed when bed occupancy increases because the workload is likely to rise even when bed occupancy is at 85%.

Trial Registration / Funding Information (only) :

This study was funded by a grant from Sjukhusläkarna.

#17973 : A Retrospective Observational Descriptive Study on Clinical Spectrum of H1N1 patients presenting to a Tertiary Care Center in South India**Authors:**

Hema Pagadala (1), Narendra nath Jena (2)

1. PGYII, Resident in Masters in Emergency Medicine, GWU-USA , Meenakshi Mission Hospital & Research Center, Madurai, INDIA
2. Head of the Department, Institute of Emergency Medicine, Meenakshi Mission Hospital & Research Center, Madurai, INDIA

Keywords: clinical spectrum, H1N1, retrospective, tertiary care center

Abstract :

Background: Being emergency physicians, identifying Swine Flu cases at the earliest is paramount in preventing or minimizing a community level outbreak. Although there are specific clues for H1N1 prediction, the clinical picture is so variable that few cases might be missed which when left untreated can lead to a major community disease burden. Swine flu pandemic is increasing in India after 2015 in spite of proper surveillance. We made a retrospective analysis to describe various aspects of this disease.

Methods: All patients who were brought to our emergency department in Meenakshi Mission Hospital and Research Centre, Madurai, India, in 3 months duration (October to December 2018), admitted, and diagnosed with Swine Flu were retrospectively analysed. Parameters analysed were demographics, presenting symptoms, clinical findings, Chest X-ray appearance, comorbidities, associated illnesses, treatment received, hospital stay and outcome. 59 subjects were analysed and logistic regression was utilized.

Results: 109 patients were admitted in our institute who were confirmed as Swine Flu with RT-PCR. Among these 59 patients were received in Emergency department. Mean age was 44 years, female to male ratio 1.10:1. Presenting symptoms in decreasing order of frequency were fever (100%), cough (89.83%), breathlessness (61.01%), headaches (25.42%), body aches (22.03%), vomiting & sore throat (16.95%). Presenting signs in decreasing frequency were Tachycardia (53.33%), Low saturation (45.76%), Fever (41.6%). Most common Chest X-ray finding was diffuse interstitial consolidation (40.67%). Initial laboratory investigations in decreasing order are increased renal function tests (22.03%), hyperglycaemia (18.64%), and leucocytosis (15.25%). Comorbidities in decreasing frequency were diabetes mellitus (45.76%), hypertension (32.20%), and cardiac disease (16.95%). 25.42% received non-invasive ventilation, 11.86% were intubated. 83% subjects recovered well, 17% succumbed to illness.

Conclusion: Age showed bimodal distribution with peaks in 1st and 5th decades. Significant associated factors for mortality were Breathlessness (0.039), Tachycardia (0.032), desaturation (0.001), Crepts (0.013), sepsis (0.001), LV dysfunction (0.026), Type 1 respiratory failure (0.001), metabolic acidosis (0.001), Leucocytosis (0.017) and Hyperglycaemia (0.005).

#17977 : Comparing impact of an e-learning package to lecture-based teaching in the management of supraventricular tachycardia (SVT): A randomized controlled study**Authors:**

KEVIN MOHEE (1), HASAN HABOUBI (2), MAJD PROTTY (3), CHRISTOPHER SRINIVASAN (4), WILLIAM TOWNEND (4), CLIVE WESTON (5)

1. Department of Cardiology, Morriston Hospital, Swansea, UK
2. Medical School, SWANSEA UNIVERSITY, SWANSEA, UK
3. MEDICAL SCHOOL, CARDIFF UNIVERSITY, CARDIFF, UK
4. Emergency Department, HULL ROYAL INFIRMARY, HULL, UK
5. MEDICAL SCHOOL, SWANSEA UNIVERSITY, SWANSEA, UK

Keywords: supraventricular tachycardia, e-learning, medical education, carotid sinus massage, valsalva manoeuvre

Abstract :

OBJECTIVES:

To compare the impact of e-learning package and theoretical teaching on the ability of both graduate and undergraduate medical students to learn the management of supraventricular tachycardia (SVT).

METHODS:

We conducted a randomized controlled blinded study at two medical schools in Wales, UK. Participants included graduate-entry medical students from Swansea University and undergraduate medical students from Cardiff University. The intervention consisted of one hour of training using an e-learning package versus an hour of lecture based teaching. The outcome was comparison within each groups and between groups of mean scores using a pre-intervention and immediate post-intervention questionnaire. Another questionnaire was e-mailed after 2 weeks and mean scores were again compared to baseline, immediate post intervention between each groups and within each groups. The hypothesis was an improved outcome in the intervention group. Randomization was 1 to 1.

RESULTS:

Of the 97 participants available for randomization, 46 underwent teaching using the e-learning package and 51 were taught in the lecture group. Mean scores were higher in the e-learning package group than the lecture group, though this difference was not statistically significant (3.63 vs. 3.37; $P = 0.085$) immediately after intervention. At 2-weeks post intervention, mean scores in the e-learning package group was significantly higher than the mean scores in the lecture group (3.59 vs. 2.86; $P = 0.002$). This was despite a sub-analysis of the results demonstrating that subjects in the lecture group had seen more cases which was statistically significant compared to those in the e-learning group (32 vs. 13; $P = 0.002$).

CONCLUSIONS:

E-learning seems to be the preferred method of learning and the method that confers longer retention time for both post-graduate and undergraduate medical students.

Trial Registration / Funding Information (only) :

NA

#17978 : Qualitative research of violent incidents between young paramedics in the Czech Republic**Authors:**

Jaroslav Pekara (1), David Peřan (2), Vladimír Nedvěď (2)

1. Education and Training Centre, Prague Emergency Medical Services, Praha 10, CZECH REPUBLIC

2. Education and Training Centre, Prague Emergency Medical Services, Prague, CZECH REPUBLIC

Keywords: violence, paramedics, behaviour, Czech Republic

Abstract :**Background**

There is no complete understanding of the incidence of violence in the Czech Republic or recommendations for specific professional communities regarding the problem of violence and how to resolve it in prehospital emergency medicine. The rate of occupational injuries among paramedics and other emergency medical professionals is eight times higher than the national average for all workers and twice as high as the rate for police officers. The main aim was to identify the impact of communication of emergency medical services (EMS) delivery in the context of violence from patients or their relatives.

Methods

This study was conducted to explore the process of violence in emergency medical services using the Strauss/Corbin systematic approach grounded theory of providing the Paradigm model. Our sample included 10 registered paramedics and 10 emergency medical technicians (EMTs) between 23 and 33 years of age (mean \pm SD: 27.7). The educational level of the participants included 11 with professional diplomas (EMTs), nine with bachelor's degrees (Paramedics), and two with master's degrees (Paramedics). All participants in the study were victims of violence when deployed to the scene to provide pre-hospital care to traumatic or non-traumatic patients. The collected data was transcribed and analysed using content analysis according to the Strauss/Corbin approach and constant comparative method (Paradigm Model of Workplace Violence). The questions focused on the manner in which the violence occurred, how they responded to the violence, and the consequences.

Results

In this study, the "impact of communication of emergency medical services delivery in the context of violence from patients or their relatives" emerged as the core category and the main focus. The five main groups of the paradigm model of violence against EMS staff included causal, contextual and intervening conditions, strategies, and consequences. In general, we can state that the paramedics and EMTs were exposed to verbal violence and physical violence. From 20 participants, 18 experienced the attack during the night shift. Ten participants experienced violence in the street, 10 in the ambulance. The perpetrators were men in 18 cases.

Discussion and Conclusion

Communication between ambulance staff and the relevant centres can cause violence. Management of Prague Emergency Medical Services and Emergency Medical Services of the Central Bohemian Region (Czech Republic) provide the use of a protector uniform, self-defence by means of evasion and pepper spray, training in keeping distance, transferring the aggressive person, use of restrictive agents and need for police involvement in case of violence were emphasized to establish security. A crucial role in the violent conflict is played by the behaviour of medical staff – nonprofessional behaviour when confronted with drunk or drug-addicted patients increases the possibility of violence by 70 %. On the other hand, we found that in 10 cases among our 20 participants the attack was caused by people under stress (these were decent people with stable families and good jobs). Thanks to the grounded theory we found that all 20 participants had some chance of preventing a conflict from occurring.

#17980 : Prospective study using a combined didactic and web-based learning curriculum to enhance emergency medicine education**Authors:**

Ryan Windish (1), Peter Stuart (2), Raymund De La Cruz (2), Alistair Murray (3)

1. Emergency Department, Redcliffe Hospital, Redcliffe, AUSTRALIA
2. Emergency Department, Modbury Hospital, Modbury, AUSTRALIA
3. Emergency Department, Lyell McEwin Hospital, Elizabeth Vale, AUSTRALIA

Keywords: Blended learning, web-based curriculum, emergency medicine

Abstract :**Background:**

Intern doctors are required to complete a term of at least eight weeks in emergency medical care in Australia to gain general registration. This requirement along with a significant increase in medical graduates in recent years has created challenges in delivering a quality educational experience for intern doctors rotating through busy emergency departments. This study attempts to assess the effectiveness of a blended emergency medicine intern education program that incorporates web-based learning into traditional classroom-based didactic sessions.

Methods:

This prospective study involved a convenience sample of intern doctors doing their emergency medicine term at two urban Australian emergency departments between April 2015 and January 2017. Participation in the study was voluntary. The Emergency Department General Education (EDGE) program is an emergency medicine intern education program that utilises a blended curriculum which incorporates web-based modules into weekly didactic and skills sessions. All intern doctors rotating through the emergency departments of each study site hospital are given protected off the floor time each week to attend the program's educational sessions. The program runs throughout the ten-week emergency medicine term and is run five times each academic year. All interns are given access to the program's corresponding web-based learning modules (www.moodle.learnem.com.au) with completion of the web-based material being voluntary.

To assess change in medical knowledge base during the program, participants were administered two multiple choice examinations covering a variety of emergency medicine topics at the beginning (Week 1) and during the final week (Week 10) of the term. To determine the study's primary endpoint, the impact of the program's web-based resources on improving participants' emergency medicine knowledge base, the median % of online modules completed by participants (75%) was used as a cut off to create two groups; those that completed $\leq 75\%$ and those that completed $>75\%$ of the web-based modules. Student T-test was used to compare the improvement between Week 1 and Week 10 scores for all interns as well as the improvement between the two groups. Mean Week 1 and Week 10 examination scores, Standard Deviation, and 95% confidence intervals (CI), were carried out for the two groups. Intern satisfaction with the program was also assessed using a satisfaction survey.

Results:

The Average examination score obtained in Week 10 (80%) for all participating interns (N=85) was significantly greater than that achieved in Week 1 (68%; $P<0.001$). The % improvement between the Week 1 and Week 10 scores of those that completed $\leq 75\%$ (N=42) of web-based modules (16% mean; 95% CI 12-20%) and those that completed $>75\%$ (N=43) of web-based modules (27% mean; 95% CI 20-34%) showed a statistically significant difference ($p=0.03$). Interns when surveyed were also highly satisfied with all aspects of the EDGE program.

Discussion & Conclusions:

Educational programs that incorporate web-based learning into didactics have several advantages over traditional lecture-based education and have shown promise in the literature. This study of a blended curriculum that utilizes web-based learning material shows promise in enhancing intern emergency medicine education.

Trial Registration / Funding Information (only) :

Trial Registration: Ethics approval for this study was obtained from the joint human research ethics committee of Lyell McEwin and Modbury Hospitals in South Australia (Registration number: HREC/15/TQEH/276) This study did not receive any specific funding.

#17981 : The accuracy of bedside ultrasonography in the diagnosis of nasal fractures

Authors:

BAHADIR CAGLAR (1), SUHA SERIN (2), SERHATAKAY (3), GOKHAN YILMAZ (4), ALPERTORUN (3), ZEHRA HILALADIBELLI (5), ISMET PARLAK (6)

1. EMERGENCY MEDICINE, BALIKESIR UNIVERSITY, Balikesir, TURKEY
2. EMERGENCY MEDICINE, BALIKESIR UNIVERSITY, BALIKESIR, TURKEY
3. EMERGENCY MEDICINE, IZMIR TRAINING AND RESEARCH HOSPITAL, IZMIR, TURKEY
4. EMERGENCY MEDICINE, KAYSERI CITY HOSPITAL, KAYSERI, TURKEY
5. RADIOLOGY, IZMIR TRAINING AND RESEARCH HOSPITAL, IZMIR, TURKEY
6. EMERGENCY MEDICINE, AKSARAY UNIVERSITY, AKSARAY, TURKEY

Keywords: ultrasonography, os nasale, trauma

Abstract :

Introduction: There is increasing use of ultrasonography in the Emergency Dept (ED) and other areas. The purpose of the present study was to evaluate the sensitivity and specificity of bedside ultrasonography with conventional radiographs in the evaluation of nasal fractures in the ED.

Method: Patients admitted to ED with maxillofacial trauma were evaluated in this prospective study. Ultrasonography scans of the patients were taken by the emergency physician at the bedside. The images were obtained from both laterals and parallel to the nasal dorsum. The nasal radiography scans were evaluated by an experienced radiologist blinded to the study. The ultrasonography and radiography results were compared statistically.

Results: The study included 103 patients. In showing the presence of nasal fracture, the sensitivity of ultrasonography was determined to be 84.8% (95% CI 71.13%–93.66%), specificity was 93.0% (95% CI 83.00%–98.05%), positive predictive value (PPV) was 90.7% (95% CI 77.86%–97.41%), negative predictive value (NPV) was 88.3% (95% CI 77.43%–95.18%).

Conclusion: Ultrasonography can be used in ED as an alternative method to conventional radiography with high rates of sensitivity and specificity in the evaluation of nasal fractures.

#17982 : Visual and Auditory Feedback To Physicians Working in Pediatric Emergency Department Improves Chest Compression Quality in Children: A Manikin Study in Two Center**Authors:**

Murat Anil (1), Şefika Bardak (2), GULSAH DEMIR (2), Sule Demir (2), Hasan Agin (3), Utku Karaaslan (3), Tanju Celik (3), Umut Altug (4), Ayse Berna Anil (5)

1. Pediatric Emergency Department, IZMIR TEPECİK TEACHİNG AND RESERACH HOSPITAL, Izmir, TURKEY
2. PEDIATRIC EMERGENCY, IZMIR TEPECİK TEACHİNG AND RESERACH HOSPITAL, Izmir, TURKEY
3. pediatric Intensive Care Unit, Doctor Behcet Uz Pediatric and Pediatric Surgery Training and Research Hospital, Izmir, TURKEY
4. pediatric Intensive Care Unit, IZMIR TEPECİK TEACHİNG AND RESERACH HOSPITAL, Izmir, TURKEY
5. pediatric Intensive Care Unit, Izmir Katip Celebi University Medical Faculty, Izmir, TURKEY

Keywords: Auditory and visual feedback, Cardiopulmonary resuscitation quality, Cardiac arrest, Cardiac compression, Cardiac rate.

Abstract :

BACKGROUND: High quality cardiopulmonary resuscitation increases the chance of life in cardiac arrest. The importance of ensuring chest compressions in accordance with the criteria has been emphasized by American Heart Association's (AHA) 2015 pediatric basic life support guideline once more. The lack of information about the effect of feedback devices on the quality of chest compressions was reported. The aim of the study was to investigate the effect of visual and auditory feedback to physicians working in pediatric emergency department on the quality of chest compressions in children.

METHODS: A pediatric manikin study was conducted in residents of pediatrics and fellows of pediatric emergency and pediatric intensive care in Izmir Tepecik Training and Research Hospital and Doctor Behcet Uz Pediatric and Pediatric Surgery Training and Research Hospital. Firstly, participants performed chest compressions on a pediatric manikin for two minutes without feedback. They repeated chest compressions with real time visual and auditory feedback by a monitor-defibrillator for two minutes in the same manikin after 15 minutes of break. Chest compression rate (AHA recommendation 100-120/min), depth (AHA recommendation 5-6 cm) and overall compression success (%) were recorded with ZollRescueNet Code Review software.

RESULTS: Firstly, the 100% overall compression success was achieved with an automated chest compression device. Subsequently, a total of 128 participants (mean age $27,9 \pm 3,8$; minimum 23, maximum 49; 94 female and 34 male) were included in the study. The overall success of chest compressions was increased from 36% to 65% ($p < 0.05$) with visual and auditory feedback. The rate of maintaining target chest compression depth was increased from 61% to 78% and the rate of maintaining target compression rate increased from 72% to 86% ($p < 0.05$) with feedback. A positive correlation between body mass index and chest compression depth ($r: 0.268$; $p < 0.05$) and a positive correlation between the experience of the participants and the rate of compression ($r: 0,174$; $p < 0.05$) was observed without feedback. There was no significant correlation between the overall success rate and professional experience ($p < 0.05$) with and without feedback.

DISCUSSION AND CONCLUSIONS: The quality of chest compressions performed on a pediatric manikin by residents and fellows without feedback was very low, regardless of professional experience. Visual and auditory real time feedback significantly improved chest compression quality in children by eliminating differences due to body mass index.

#17983 : The impact of treatment with continuous positive airway pressure on acute carbon monoxide poisoning

Authors:

BAHADIR CAGLAR (1), SUHA SERIN (2), GOKHAN YILMAZ (3), ALPER TORUN (4), ISMET PARLAK (5)

1. EMERGENCY MEDICINE, BALIKESIR UNIVERSITY, Balikesir, TURKEY
2. EMERGENCY MEDICINE, BALIKESIR UNIVERSITY, BALIKESIR, TURKEY
3. EMERGENCY MEDICINE, KAYSERI CITY HOSPITAL, KAYSERI, TURKEY
4. EMERGENCY MEDICINE, IZMIR TRAINING AND RESEARCH HOSPITAL, IZMIR, TURKEY
5. EMERGENCY MEDICINE, AKSARAY UNIVERSITY, AKSARAY, TURKEY

Keywords: toxicology, carbon monoxide poisoning, non invasive ventilation

Abstract :

Introduction: Approximately 50,000 patients per year present at Emergency Departments because of carbon monoxide (CO) intoxication. The hypothesis of this study was that the half-life of CO and the regression period of complaints could be reduced more rapidly by applying oxygen with the Continuous Positive Airway Pressure modality using a noninvasive mechanical ventilator.

Methods: The patients were divided into Group 1 and Group 2 in terms of the treatment method applied. Patients in Group 1 received FiO₂ 1.0 1.0 15 l/min oxygen at room temperature for at least 30 minutes with a non-rebreather mask. Patients in Group 2 received FiO₂ 1.0 oxygen at 12 cmH₂O pressure with non-invasive mechanical ventilation for at least 30 minutes with an oronasal mask in the Continuous Positive Airway Pressure (CPAP) modality.

Results: The median values of COHb levels at 0 and 30 minutes of patients were 19% and 14% in Group 1 and 22% and 9% in Group 2 and a median difference of 6% was detected in Group 1 and of 13% in Group 2 in the first 30 minutes ($p < 0.001$). When the symptoms of the patients were examined, the median values of Group 1 and Group 2 at 0 minute were both 8 units and at 30 minutes were 5 and 3 units, respectively. A decrease of 5 units was determined in the median of Group 2 in the first 30 minutes, and a decrease of 2 units in the median of Group 1 ($p < 0.001$).

Conclusion: The use of CPAP was determined to be at almost the same level of efficacy as the use of HBO₂ in terms of the half-life of CoHb. It is also thought that it may enable earlier discharge by reducing the duration of the emergency follow-up since it provides a faster improvement in the symptoms of the patients.

#17985 : Pentrox use: An observational study amongst Emergency Department (ED) doctors

Authors:

dalip Kumar (1), Michael Acidri (2), Caroline Howard (3), Claire Willis (4), Ionut Negrea (5)

1. National Health Service-ED Consultant, Southend University Hospital NHS Trust, Westcliff on Sea, UK
2. Emergency Department Consultant, Southend University Hospital, Westcliff on Sea, UK
3. National Health Service-ED Consultant & Clinical ED Director, Southend University Hospital NHS Trust, Westcliff on Sea, UK
4. National Health Service-ED Consultant & Clinical Lead, Southend University Hospital NHS Trust, Westcliff on Sea, UK
5. Emergency Department consultant, Southend University Hospital, Westcliff on Sea, UK

Keywords: Pentrox (Methoxyflurane), Emergency Department (ED), Survey

Abstract :

Background: Pentrox (Methoxyflurane) is a novel inhalational anaesthetic that is increasingly being used in several United Kingdom (UK) Emergency Departments (ED) for rapid analgesia to relieve musculo-skeletal pain. We performed a pilot observational study to assess ED doctor's satisfaction of the use of Pentrox in the Southend University Hospital.

Methodology: A survey was circulated in July 2018, amongst the ED doctors from junior to senior grade, with replies received from 15 doctors. The data was analysed for the Pentrox usage, ease of use, time to administer / response, satisfaction and any additional comments. The results from all 15 doctors were then collated.

Results: 93.33% of the doctors said that they had used Pentrox to relieve moderate to severe pain amongst adults in the emergency department with 86.67% using Pentrox at least once a week. 100% of respondents said they found Pentrox easy to administer with 60% advising that it takes less than 5 minutes to administer Pentrox (Including obtaining and set-up time). 100% of them had used Pentrox to alleviate pain from patients with fractures and / or dislocations. 100% of them found that Pentrox was effective within the first 5 minutes to relieve pain. 93.3% were satisfied with its ability to control pain, whilst 100% of them gave positive comments on Pentrox use in the ED.

Conclusion: Although a small scale study, Pentrox does show promise to be an effective analgesic from the ED clinician's perspective. It is easy to administer and its ability to alleviate pain in patients with minor injuries including fractures and dislocations within the first 5 minutes of its administration appear to be its strong points.

Trial Registration / Funding Information (only) :

None

#17996 : Autotransfusion in gynaecological and obstetrical haemorrhagic emergencies within low income countries - systematic literature review.**Authors:**

Angela Peca (1), Lina Echeverri (2), Luca Ragazzoni (2)

1. Research, EMDM, London, UK
2. Research, EMDM, Novara, ITALY

Keywords: Autotransfusion, gynaecology, obstetrics, emergencies, low income countries.

Abstract :**BACKGROUND**

Gynaecological and obstetric haemorrhagic emergencies can be life-threatening in low income countries where patients often present belatedly in haemorrhagic shock with associated acute anaemia and homologous blood is not always available in health care centres. Autotransfusion is a sustainable alternative to homologous blood transfusion that can be life-saving in these emergencies within poor resourced settings. The objective of this study is to evaluate the safety, efficacy and effectiveness of autotransfusion versus homologous transfusion in gynaecological and obstetrical haemorrhagic emergencies within low income countries.

METHODS

A systematic literature review was conducted. A search and screen was completed on CENTRAL, EBSCO and OVID that include CINAHL, Cochrane Library, Embase and Medline, for randomised control trials (RCTs) comparing autotransfusion versus homologous transfusion in gynaecological and obstetrical haemorrhagic emergencies within low income countries.

RESULTS

There was only one study selected that showed no significant differences in the clinical outcomes between the autotransfusion and the homologous blood transfusion groups.

CONCLUSION

There is moderate evidence that intraoperative autotransfusion is safe, effective and efficient when compared to standard homologous transfusion in gynaecological and obstetric haemorrhagic emergencies within low income countries. Notwithstanding, there is the distinct need for contemporaneous high quality research studies to strengthen this evidence.

#18003 : The modified bougie as conduit to magnet guided intubation optimized with industrial grade materials performed on cadaveric specimen.

Authors:

Matthew Vasey (1), Tiffany Vasey (2), Angus Jameson (3), Derek Pupello (4)

1. Emergency Medicine, Tampa General Hospital | TeamHealth | University of South Florida Morsani College of Medicine, Tampa, USA
2. Emergency Medicine, Tampa General Hospital | TeamHealth, Tampa, USA
3. Emergency Medicine, Pinellas County Emergency Medical Services | Tampa General Hospital | TeamHealth | University of South Florida Morsani College of Medicine, Tampa, USA
4. Research , Florida Innovation in Education Labs, Tampa, USA

Keywords: Intubation, Bougie, Magnetics

Abstract :

Background: We show further evidence for clinical utility of the modified bougie as a conduit for magnetic intubation. This technique has been demonstrated in theory, subsequently optimized with industrial grade materials on an airway mannequin. We presented preliminary work at the 2018 European Society for Emergency Medicine 12th Congress. The purpose of this study is to advance understanding through application of the same technique and equipment on four cadaver specimens.

Methods: We obtained the following: SunMed Introducer Adult Bougie 15Fr x 70cm with Coude Tip, Hillman Group Ook 18 Guage Steel Galvanized Wire, DdFeB, Grade N52 DISC Magnet NiCuNi Plating Magnet to a Steel Plate: 377.6 Pound Pull Force, 2 dia x 2 thk (in), MAC blade laryngoscope, standard trauma shears, four cadaveric cephalus and torso specimens. We used shears to cut the bougie at the 55 mark. The guide wire was fully inserted. Anatomy was visualized with the MAC blade. The magnetic field was applied to the distal bougie in the cadaveric oropharynx and hypopharynx with navigating magnet via a location anterior to the cadaver neck. We confirmed anatomic location via fluoroscopy and sensation of tracheal rings.

Results: Magnet assisted anterior navigation of the bougie coude tip was obtained in the hypopharynx facilitating passage through the vocal cords into the trachea of each cadaveric specimen. We replicated prior experience with this magnetic intubation technique on a mannequin in four cadavers.

Conclusion: The authors' understanding of this unique magnetic intubation technique with industrial products has expanded beyond prior theory and use in the mannequin. Inability to control the coude tip of the bougie as an adjunct tool for the difficult airway increases the likelihood of surgical airway. Application of a magnetic field to control endotracheal instrumentation could be a useful tool in the difficult airway algorithm through expansion of existing device functionality. Successful application in this limited sample of four cadavers suggests further study is important to better understand the magnetic intubation technique and its potential for future clinical utility.

Trial Registration / Funding Information (only) :

This study did not receive any specific funding.

#18004 : An innovative magnetic intubation technique further optimized with off label modified sunmed bougie and cook medical bentson guidewire.**Authors:**

Matthew Vasey (1), Tiffany Vasey (2), Glenn Hoots (3)

1. Emergency Medicine, Tampa General Hospital | TeamHealth | University of South Florida Morsani College of Medicine, Tampa, USA
2. Emergency Medicine, Tampa General Hospital | TeamHealth, Tampa, USA
3. Interventional Radiology, Tampa General Hospital | University of South Florida Morsani College of Medicine, Tampa, USA

Keywords: Intubation, Bougie, Magnetics

Abstract :

Background: We report further evidence for clinical utility of the modified bougie as a conduit for magnetic intubation. This technique has been demonstrated in theory, subsequently optimized with industrial grade materials on an airway mannequin. We presented these findings at the 2018 European Society for Emergency Medicine 12th Congress. The Bentson Wire Guide is commonly used in interventional radiology. Healthcare manufacturing and distribution infrastructure exists and is readily available to the emergency physician in the hospital setting. The purpose of this research project is to replicate prior achievement with modified off label use of the Bentson Wire Guide manufactured by Cook Medical.

Methods: We obtained the following: SunMed Introducer Adult Bougie 15Fr x 70cm with Coude Tip, Cook Medical Bentson Plus Wire Guide 260cm length by 0.035 in. diameter, Grade N52 DISC Magnet NiCuNi Plating Magnet to a Steel Plate: 377.6 Pound Pull Force, 2 in. diameter x 2 in. thick, MAC blade laryngoscope, Leatherman Raptor shears, and a basic airway mannequin. Shears were used to cut the bougie at the 40cm mark. We modified the Bentson Wire Guide with shears to five equal 50cm segments. Five modified segments of the wire were used to cannulate the distal bougie towards the coude tip. The proximal bougie segment was placed back over the five wire segments. 3M tegaderm was used to secure the two modified bougie parts. Mannequin anatomy was visualized with the MAC blade. We applied the magnetic field to the distal bougie in the oropharynx and hypopharynx with navigating magnet via a location anterior to the neck by the procedural assistant.

Results: Magnet guided anterior navigation of the bougie coude tip was obtained in the hypopharynx facilitating passage through the vocal cords into the trachea of the airway mannequin. We performed this magnetic intubation technique with customization of available medical devices in combination with an industrial magnet.

Conclusion: We used the modified bougie and guidewire to perform endotracheal intubation guided by a magnet. This off label technique has expanded beyond prior theory and use in the mannequin with an industrial grade, non-medical wire. Inability to control the coude tip of the bougie as an adjunct tool for the difficult airway increases the likelihood of surgical airway. Application of a magnetic field to control endotracheal instrumentation could be a useful tool in the difficult airway algorithm through expansion of existing device functionality. Retrograde intubation with a guidewire and use of the bougie are each established airway techniques. The modified off label use of available medical products and familiar techniques may mitigate prior headwinds to implementation and adoption of magnetic intubation. Further study is important to better understand this magnetic intubation technique and potential for future clinical utility.

Trial Registration / Funding Information (only) :

This study did not receive any specific funding.

#18014 : Effective Factors in Improving the Emergency Department Preparedness of Hospitals in Radiation and Nuclear Incidents and Nuclear Terrorism: A Systematic Review**Authors:**

Ahmadi Marzaleh Milad (1), Rezaee Rita (2), Rezaianzadeh Abbas (1), Rakhshan Mahnaz (1), Haddadi Gholamhassan (1), Peyravi Mahmoudreza (1)

1. ,shiraz university of medical sciences, Shiraz, IRAN, ISLAMIC REPUBLIC

2. ,shiraz university of medical sciences, shiraz, IRAN, ISLAMIC REPUBLIC

Keywords: Preparedness, Emergency Department, Hospital, Radiation Incidents, Nuclear incidents, Terrorism

Abstract :

Background: Due to existence of nuclear power plant sites in various parts of the world, as well as political threats in disaster-prone areas throughout the world, there is a probability of nuclear and radiation incidents. The present study was carried out with the purpose to extract effective criteria in emergency department preparedness of hospitals in radiation, nuclear incidents and nuclear terrorism in different countries around the world.

Methods: A systematic search was carried out in Cochrane Library, PubMed, Scopus, Science Direct, Web of Science, ProQuest and EmBase databases between January 1970 to July 2018. The systematic search was carried out according to the PRISMA standard. The required information was extracted from the papers based on the abstract and collection form.

Results: After searching the databases, 1091 papers were finally extracted. The initial search included research papers. After reviewing the papers' titles, abstracts and full texts, 15 papers were selected for final analysis. Next, 32 criteria were extracted. The criteria were divided into 3 categories. The categories included staff, stuff and systems (structure). The most frequent criteria included training criteria, personal protective equipment, decontamination and practice.

Discussion and Conclusion: The results of the systematic review provided an overview of the effective factors in improving the emergency department preparedness during radiation and nuclear incidents. In addition to the mentioned criteria in different studies, there are other hidden factors that affect the emergency department preparedness in radiation and nuclear incidents, thus, the highest level of preparedness should be considered.

Trial Registration / Funding Information (only) :

Registration: The study protocol was first registered in PROSPERO database with the identification number CRD42018102815. Funding: This project has partly been supported by a grant from the Shiraz University of Medical Sciences with the code 97-01-07-17271. Ethical approval and informed consent: Informed consent was obtained from all individual participants included in the study.

#18015 : Emergency Department Preparedness of Hospitals in Radiation and Nuclear Accidents and Nuclear Terrorism: A Qualitative Study**Authors:**

Ahmadi Marzaleh Milad (1), Rezaee Rita (2), Rezaianzadeh Abbas (1), Rakhshan Mahnaz (1), Haddadi Gholamhassan (1), Peyravi Mahmoudreza (1)

1. ,shiraz university of medical sciences, Shiraz, IRAN, ISLAMIC REPUBLIC

2. ,shiraz university of medical sciences, shiraz, IRAN, ISLAMIC REPUBLIC

Keywords: Preparedness, Emergency Department, Hospital, Radiation accidents, Nuclear Accidents, Terrorism, Qualitative, Iran

Abstract :

Background: Emergency department (ED) of hospitals is the entrance gate of patients to hospitals. Hospitals are confronted with major challenges in radiation, nuclear accidents and nuclear terrorism. Because Iran is at the risk of disasters and there are political threats, the possibility of nuclear and radiation accidents is expected. The present study was conducted using a qualitative method with the purpose of extracting effective factors in emergency department preparedness of hospitals in radiation, nuclear accidents and nuclear terrorism in Iran.

Methods: This study was conducted as a qualitative study by in-depth semi-structured interviews with 32 key informants selected through purposeful sampling. Data were analyzed using thematic analysis method in order to extract the effective factors in the emergency department (ED) preparedness of hospitals in radiation, nuclear accidents and nuclear terrorism in Iran.

Results: Effective factors in emergency department preparedness of hospitals were categorized into the staff preparedness, equipment and system. 20 sub-categories were identified. The experts emphasized that conducting training courses and exercises could enhance the preparedness and response to these accidents.

Discussion and Conclusion: Recognizing these factors can be effective in developing the emergency department preparedness of hospitals' program against nuclear and radiation accidents. In addition, due to the extracted factors, the ED of hospitals can be equipped to face with these accidents.

Trial Registration / Funding Information (only) :

Registration: Nil. Funding: This project has partly been supported by a grant from the Shiraz University of Medical Sciences with the code 97-01-07-17271. Ethical approval and informed consent: Informed consent was obtained from all individual participants included in the study.

#18016 : Needs Assessment for Standardized Educational Program for Iranian Medical Students in Crisis and Disaster Management**Authors:**

Rezaee Rita (1), Peyravi Mahmoudreza (2), Ahmadi Marzaleh Milad (2), Khorram-Manesh Amir (3)

1. , shiraz university of medical sciences, shiraz, IRAN, ISLAMIC REPUBLIC
2. , shiraz university of medical sciences, Shiraz, IRAN, ISLAMIC REPUBLIC
3. , University of Gothenburg, Gothenburg, SWEDEN

Keywords: Disasters, Crisis, Medical Students, Education, Interdisciplinary, Awareness

Abstract :

Background: Early education and training are mandatory to raise the knowledge and awareness of the healthcare staff. Iran is a disaster prone area with a high number of emergencies. This study aimed to assess the need for disaster and emergency management education for Iranian medical students.

Methods: Using two-round Delphi technique in 2018, 15 experts within the field of disaster and emergency management were asked for their opinions concerning the education required for Iranian medical students. Highly important educational domains and their sub-domains selected with an agreement of above 70-80% were prioritized by AHP technique.

Results: Of 41 identified and prioritized educational subjects, four main groups were obtained: 1) crisis and disaster primary concepts, 2) disease control skills, 3) management skills, and 4) medical care skills. The medical care skills had the highest priority (with a weight of 0.546) compared to other areas after the final analysis.

Discussion and Conclusion: Different areas of competency are needed to raise awareness and preparedness in medical students in combating crisis and disasters. We propose a curriculum for Iranian medical students and suggest it to be used other professionals, who are involved in the process of disaster management.

Trial Registration / Funding Information (only) :

Registration: Nil. Funding: This project has partly been supported by a grant from the Shiraz University of Medical Sciences. Ethical approval and informed consent: Informed consent was obtained from all individual participants included in the study.

#18018 : Prevalence of urinary tract infection in infants with upper airway infections and fever >39° C**Authors:**

Patricia Bolivar (1), Pilar de Ponga (1), Roberto Velasco (2)

1. Pediatrics, Rio Hortega University Hospital, Valladolid, SPAIN

2. Pediatric Emergency Department., Rio Hortega University Hospital. (Valladolid, SPAIN), Laguna de Duero, SPAIN

Keywords: urinary tract infection

Abstract :

Background: Guidelines recommend ruling out urinary tract infections (UTI) in infants with fever without source if temperature is higher than 39° C. Some authors had described a high prevalence also in infants with bronchiolitis and fever $\geq 39^{\circ}$ C. Nevertheless, to our knowledge, no study has analyzed specifically the prevalence of UTI in infants with upper respiratory tract infections (URTI) and fever.

Objective: To analyze the prevalence of UTI in infants with symptoms of URTI and a temperature $\geq 39^{\circ}$ C.

Design/Methods: Prospective unicenter study, including male infants up to 12 months old and female infants up to 24 months old with symptoms or signs of URTI (cough, rhinorrhea, hyperemic or vesiculous oropharynx) and a temperature $\geq 39^{\circ}$ C at home or the ED. Patients with symptoms of lower tract respiratory infections (wheezing, crackling or hypoventilation at pulmonary auscultation), patients with diarrhea or those who had received antibiotic treatment in the prior seven days were excluded. A first urine sample was obtained by any method, under physician decision, but all positive urine dipstick of a non-sterile sample was confirmed in a second sample obtained by a sterile method (urethral catheterization, suprapubic aspiration or clean-catch method). Only samples by a sterile method were used for urine culture. UTI was defined as the combination of a positive urine dipstick (positive leukocyte-esterase or nitrite test) and a urine culture growing more than 10,000 cfu/ml, both in sterile samples.

Results:

A total of 441 infants were included. Of these, 321 (72.9%) were females.

In 416 (94.3%) a urine sample was obtained by perineal bag, being 86 (19.7%) positive. In 111 (25.2%) infants a sterile urine sample was obtained (including those 86 with a non-sterile positive urine dipstick), being the urine dipstick positive in 34 (30.46%). A final diagnosis of UTI was made in 19 (4.3%; 95% CI 2.8% - 6.6%) patients. All urine cultures were positive to *Escherichia coli*.

There were no differences between male (4.2%) and female (4.4%) patients in the prevalence of UTI.

Conclusion: Prevalence of UTI in infants with upper respiratory tract infections and temperature $\geq 39^{\circ}$ C is higher than 2%. According to that, UTI should be ruled out in these patients

#18019 : Nitrituria is a risk factor for invasive bacterial infection in febrile infants under 90 days old. A RISEuP-SPERG Study.

Authors:

Roberto Velasco (1), Borja Gomez (2), Mercedes De la Torre (3), Santiago Mintegi (4), Francisco Javier Benito (5)

1. Pediatric Emergency Department., Rio Hortega University Hospital. (Valladolid, SPAIN), Laguna de Duero, SPAIN
2. Pediatric Emergency Department., Cruces University Hospital (Bilbao, Spain), Barakaldo, SPAIN
3. Pediatric Emergency Department., Niño Jesus University Hospital (Madrid, Spain), Madrid, SPAIN
4. Pediatric Emergency Department., Cruces University Hospital (Bilbao, Spain), Gorniz, SPAIN
5. Pediatric Emergency Department, Cruces University Hospital, Bilbao, SPAIN

Keywords: urinary tract infection, febrile infant, nitrite, bacteremia

Abstract :

Background: Combination of leukocyturia and/or nitrituria has been proven to be an independent risk factor for bacteremia in febrile infants under 90 days old. Nevertheless, to our knowledge, no study has analyzed specifically the value of nitrituria to identify young febrile infants at risk for invasive bacterial infections (IBI) when evaluated in the emergency department (ED).

Objective: To analyze the association between a positive nitrite test in the urine dipstick and a positive bacterial blood or cerebrospinal fluid (CSF) culture in febrile infants under 90 days old.

Methods: Secondary analysis of a prospective multicenter sample of febrile infants less than 90 days old attended in 19 Spanish paediatric ED included in RISEUP-SPERG (Spanish Pediatric Emergency Research Group), between October-2011 and September-2013. IBI was defined as a positive bacterial blood or CSF culture.

Results: A total of 3401 infants were included. Of these, urine dipstick was altered (leukocyte esterase and/or nitrite test positive) in 766 (22.5%) and 107 (3.2%) were diagnosed with an IBI (89 had bacteremia alone, 7 had a positive CSF culture alone, and 11 had both blood and CSF positive cultures). Prevalence of IBI was 2.0% in patients with normal urine dipstick, 4.4% if leukocyte esterase test was positive alone, 8.3% if nitrite test was positive alone, and 10.6% if both leukocyte esterase and nitrite test were positive.

After adjusting by the presence of leukocyturia and other potential confounders, as age, sex, previous genitourinary malformations, maximum temperature and appearance, a positive nitrite test in the urine dipstick resulted as a risk factor for developing an IBI (OR 2.7, CI 95% 1.4 – 4.9).

Conclusion: In febrile infants under 90 days old, a positive nitrite test in the urine dipstick is an independent risk factor for IBI.

#18022 : Variability in utilization and diagnostic yield of Computed Tomography Pulmonary Angiography (CTPA) scans for pulmonary embolism among emergency department (ED) physicians: a retrospective observational study.

Authors:

Leila Salehi (1), Prashant Phalpher (2), Christopher meaney (3), Marc Ossip (4), Rahim Valani (5)

1. Emergency Medicine / Family Medicine, McMaster University, Toronto, CANADA
2. Emergency Medicine, William Osler Health Services, toronto, CANADA
3. Faculty of Medicine, University of Toronto, toronto, CANADA
4. Diagnostic radiology, William Osler Health Services, toronto, CANADA
5. Emergency Medicine, University of Toronto, Toronto, CANADA

Keywords: Computed Tomography, Diagnostic imaging, Overutilization, Practice pattern variability, Choosing wisely, Quality Improvement

Abstract :**Background:**

Current data on utilization of CT imaging point to a trend of increasing overutilization of CT Angiography for the diagnosis of pulmonary embolism (CTPA) over time. Multiple educational and institution-wide interventions addressing this overutilization have been proposed, implemented and evaluated, with mixed results in terms of long-term impact on physician ordering behaviour. The objective of this study is to examine the inter-physician variability in ordering rates and diagnostic yield of CTPA, under a working hypothesis that a small number of physicians are responsible for a disproportionately high number of CTPA ordered in the ED, and that disproportionately high ordering rates are associated with lower diagnostic yield.

Methodology:

Data was collected on all CTPA studies ordered by ED physicians at two very high volume community hospitals and an affiliated urgent care centre during the 2-year period between January 1, 2016 and December 31, 2017. Analysis was limited to those ED physicians who had a total of greater than 500 ED visits over the course of the 2-year period. For each physician, two calculations were made: 1) CT PE ordering rate (total number of CTPA ordered divided by the total number of ED visits), and 2) CTPA diagnostic yield (total number of CTPA positive for PE divided by the total number CTPA ordered). Additional analysis was carried out in order to identify the highest orderers of CTPA and their diagnostic yield.

Results:

A total of 2,789 CTPA were ordered by 84 physicians for 461,045 total ED visits. Preliminary results show a great deal of variation in ordering rates, ranging from 0.9 to 22.2 CTPA per 1000 ED visits (median = 4.8 CTPA per 1000 ED visits, IQR = 4.5 CTPA per 1000 ED visits). Similarly, there was a high degree of variation in CT PE yield, ranging from 0% to 50% (median = 9.6%, IQR = 13.1%). Those physicians in the top quartile for ordering rate had a lower mean diagnostic yield, when compared to the lower quartiles (8.9% when compared to 11.5%, 11.9% and 18.2% for the physicians in the third, second, and first quartile respectively).

Conclusion:

The findings of this study indicate a wide degree of variability in CTPA ordering patterns and diagnostic yields among physicians working within the same clinical environment. There is some suggestion that those physicians who order disproportionately higher numbers of CTPAs have lower diagnostic yields. However, the more interesting lessons from this initial study center on the challenges in creating an audit-and-feedback program targeting CTPA 'overutilizers'.

#18026 : cooling techniques After Resuscitated Cardiac Arrest

Authors:

Wan-Ling Chang (1), Yu-Ju Chen (2)

1. Intensive care unit, Fu Jen Catholic University Hospital , new taipei city, TAIWAN
2. Associate Professor, National Defense Medical Center, taipei city, TAIWAN

Keywords: cooling techniques, OHCA, Resuscitated

Abstract :

Background: According to the statistics of Out-of-Hospital Cardiac Arrest (OHCA), the death rate is as high as 90%. According to the statistics of the Fire Department, the number of heartbeats stopped before the hospital in 2017 was 20,117, of which 579 were discharged after first aid. From cardiac arrest to restore spontaneous circulation, every 1.5 minutes delayed neurological prognosis is down 14% compared to conventional supportive therapy after recovery should actively maintain nerve function, to enhance the quality of discharged patients high standard of living and function.

Objective: The American Heart Association (AHA) hypothermia recommended grade is CALSS 1. Resuscitation of heartbeat after first aid resuscitation but unconsciousness should receive 12 to 24 hours of central temperature 32-34 degrees of low temperature therapy HACA (Hypothermia after Cardiac Arrest Study Group) studies have shown that hypothermia therapy can reduce mortality and improve the neurological outcome, evidence-based, exploration Discuss the cooling blanket for the effectiveness of cardiopulmonary resuscitation.

Methodology: Based on the Oxford (2010) using the empirical level as the level of classification, select The Cochrane Library, CINAHL PLUS, PubMed 3 Ge data library data collection, dating is limited to 2010-2018, respectively, and then enter hypothermia therapy, cardiac arrest, Resuscitation, cooling blanket, neurological recover.

Results: Cardiac arrest patients had a 20% reduction in mortality from hypothermia, and patients with hypothermia had better neurological function recovery after six months. Patients with ventricular fibrillation or pulseless ventricular tachycardia achieved better neurology.

Clinical Recommendations: The recommended level of cryotherapy is Class I. The intervention time is used immediately after heartbeat recovery, no more than 4-6 hours at the latest. The patient's central body temperature should be quickly reduced to 34 ° C within three hours. Maintain the temperature at 32-34 ° C for 24 hours, then start slowly at 0.2-0.5 ° C per hour from 12 to 16 hours.

Restriction: Cryogenic therapy has now advocated the concept of the sooner intervention function recovery, and it is now used in emergency and intensive care units. It should be extended to the rescue site to see if it is more effective in neurological prognosis and to find it by empirical means. Appropriate cooling methods and duration, and overcome the complications of hypothermia treatment, such as electrolyte abnormalities, coagulation abnormalities, infections and sepsis, to achieve the quality of acute care and the world.

#18027 : The challenge of improving troponin t turnaround time in the emergency department: an observational study**Authors:**

Michael Acidri (1), Caroline Howard (1), Sarah Mapplebeck (2), Dalip Kumar (1), Claire Willis (1), Felix Egbutu (3)

1. Emergency Department, Southend University Hospital, Westcliff on Sea, UK
2. Biochemistry Consultant, Southend University Hospital, Southend on sea, UK
3. Emergency Department, Southend University Hospital, Southend on sea, UK

Keywords: troponin, turnaround time, emergency department

Abstract :**Background:**

High-sensitive cardiac troponin T (hs-cTnT) is a very crucial biochemical marker of cardiac injury used in the emergency department (ED) for the evaluation of patients with acute myocardial infarction (MI). Turnaround time (TAT) is a recognized indicator of laboratory performance and service. Early hs-cTnT TAT enables timely recognition of MI plus commencement of crucial treatment. Prolonged TAT ultimately leads to longer stays in the department, poor patient experience and outcome. Hs-cTnT remains a very important decision-making aid that affects departmental flow. A recognised problem with its analysis is the impact of haemolysis resulting in the inability to measure this assay.

Objective:

This observational study was carried out in the ED of a district general hospital that sees at least 102,000 acute cases per year. It was done in conjunction with the Biochemistry department to assess standards and introduce process measures as part of a quality improvement project to improve sample integrity and efficiency. The primary intervention was change in sample tubes from serum gel (gold top) to plasma lithium heparin (green top) tubes, the secondary and tertiary interventions were sample collection technique and phlebotomy training respectively.

Method:

The study was commenced in September 2017 with retrospective analysis of haemolysis rates and TATs. All samples were collected in the ED, sent routinely by pneumatic pod to the hospital Biochemistry laboratory that uses the Roche 411 analyser. 50 consecutive laboratory samples were collected using serum gel tubes. Approximately, 12 months later, post interventions, 50 consecutive samples were collected using plasma lithium heparin tubes and the data was analysed for haemolysis and TAT.

Results:

Haemolysis rate was 10% with the serum gel samples; most (80%) of haemolysed samples had a haemolysis index of 2. The average TAT was found to be 64 minutes. Post interventions the haemolysis rate with plasma lithium heparin tubes remained at 10%; most (40%) of haemolysed samples had a haemolysis index of 3 while the average TAT fell to 50 minutes (a reduction of 22%).

Discussion and Conclusion:

This single centre study demonstrates the continual challenges in the ED of maintaining sample integrity and pursuing early TATs, an issue which can affect patient care and departmental flow. The study demonstrated a 22% reduction in the average hs-cTnT TAT however despite interventions, there was no noticeable improvement in haemolysis rates.

Trial Registration / Funding Information (only) :

Not applicable.

#18031 : Assessment of the impact of using Sieve triage training for non-medical military personnel deployed in conflict zones and determining the retention of knowledge post-delivery of educational courses using a questionnaire during a simulation exercise.

Authors:

Omar Ghazanfar (1), Saleh Fares (1), Ives Hubloue (2), Ahmed Mubarak (3), Jez Harwood (4)

1. Emergency Medicine, Zayed Military Hospital, Abu Dhabi, UNITED ARAB EMIRATES
2. , Chair of the Department of Emergency Medicine of the Universitair Ziekenhuis Brussels and of the Research Group on Emergency and Disaster Medicine at the Medical School of the Vrije Universiteit Brussels. Faculty member and Chair of the Strategic Management Board of the EMDM , Brussels, BELGIUM
3. , Zayed Military Hospital, Abu Dhabi, UNITED ARAB EMIRATES
4. , Prometheus MENA, Abu Dhabi, UNITED ARAB EMIRATES

Keywords: triage,sieve,disaster medicine

Abstract :

Study Objective

The objective of this study is to assess the level of knowledge retention amongst non-military personnel after delivery of specific training courses to instill skills in using the sieve triage in conflict zones.

This study aims to assess the level of knowledge retention amongst the non-medical military personnel undergoing triage training on the Sieve tool and to ascertain the level of knowledge retention . This study is part of a thesis project of the EMDM-program (European Master in Disaster Medicine) and will involve international collaboration with the Research Group on Emergency and Disaster Medicine of the Vrije Universiteit Brussel (Brussels, Belgium), while the UAE MSC will be the local facilitators for this project.

Background

We focus on the following specific objectives during the course of this study:

1. Assess the level of competence of non-medical personnel in the use of SEIVE triage using pre and post course questionnaire and assign the level of knowledge retention.
2. Serial assessments of knowledge retention at Day 0 and Day 30 post-delivery of course as perevidence
3. Comparing the level of knowledge retention of SIEVE triage between medical and non-medical providers of care.

Study Rationale

- To understand the level of retention knowledge amongst non-medical personnel in the use of SEIVE triage
- Compare the level of knowledge retention between medical and non-medical providers of care
- Providing a platform to provide evidence-based information to the UAE Medical Military Education Division to allow planning to determine specific areas of need with respect to educational delivery .

Specific Study Objectives

1. Assess the level of knowledge retention amongst non-medical military personnel in the use of SIEVE triage using a knowledge-based questionnaire pre and post course as well as at day 0 and day 30 of course delivery.
2. Comparing the difference in knowledge retention between medical and non-medical personnel in the use of SIEVE triage using the same questionnaire after delivery of identical courses

Research Methods

The research data will be collected using a questionnaire which will be distributed randomly amongst medical and non-medical personnel after delivery of SIEVE triage training and the data collected will then be collated and compared and analyzed with traditional descriptive statistical tools to reach a final conclusion.

Inclusion criteria: Randomly selected cohort of medical and non-medical personnel undergoing training in the use of Sieve triage tool

Exclusion criteria: All personnel undergoing training which does not include SIEVE

Tool Used for data collection: Questionnaire devised locally to test the knowledge in the use of sieve tool.

Null hypothesis:

1. No difference in the knowledge between medical and non-medical personnel in use of SIEVE
2. No difference in knowledge retention in use of SIEVE tool at Day 0 and Day 30 amongst non-medical personnel

Trial Registration / Funding Information (only) :

N/a

#18035 : “Signed and stamped”: ECG sign-off in the emergency department**Authors:**

Bronwen Warner (1), Euan McKenzie (1)

1. Emergency Medicine, NHS Ayrshire and Arran, Glasgow, UK

Keywords: Electrocardiogram, patient safety, arrhythmia, acute coronary syndrome, time-critical, standard operating procedure, guidelines, quality improvement

Abstract :

Background

Electrocardiograms (ECGs) are frequently performed in the acute setting and are important for diagnosing potentially life-threatening conditions. ‘ECG sign-off’ refers to a process in which a clinician reviews and endorses the trace in order to ensure early detection of concerning features. While a ‘time critical’ ‘standard operating procedure’ for sign-off is recommended by the Royal College of Emergency Medicine in the UK, there is no common published consensus on ‘criteria’ for ECG sign-off.

Aim: to improve ECG sign-off in the Emergency Department (ED) of a busy UK district general hospital.

Methods

ECG sign-offs from a randomised sample of adult patients (n=35) were audited. Criteria for sign-off were agreed by local ED consultant consensus and were: patient symptoms, ECG interpretation, action, clinician name and signature.

An ‘ECG sign-off stamp’ was designed as a proforma for sign-off criteria, to be applied to each ECG at the point of recording and completed by medical staff. Interim data analysis prompted streamlining of the stamping process by nurses. Final data collection (n=30) was at four months post-intervention. Pre-audit questionnaires examined medical staff baseline confidence in signing-off ECGs and opinion on the overall satisfactoriness of the original sign-off system. Post-audit questionnaires were given to medical and nursing staff to assess views on the stamp intervention in terms of communication within the department, sign-off structure and overall impression of stamp utility.

Results

Baseline: 23.4% of sign-off criteria were documented overall, 0% of sign-offs included all sign-off criteria. Final data collection: 91.1% (stamped), 45.7% (non-stamped) and 59.3% (total) of sign-off criteria were documented; improvement was seen in all domains of sign-off and 26.7% sign-offs included all sign-off criteria. Pre-audit, 38.5% junior staff ‘never’ had a structure for ECG sign-off. 50% consultants found the sign-off process unsatisfactory. Post-audit, 100% medical staff felt that the stamp improved sign-off structure and 100% would recommend the stamp. 79% nursing staff ‘agreed’ or ‘strongly agreed’ that the stamp improved communication.

Conclusion

We present a quality improvement project demonstrating a successful intervention to improve ECG sign-off in the ED. There are currently no UK national standards for ECG sign-off in the ED. Use of an ECG sign-off proforma applied directly to the ECG improves documentation and is welcomed by ED staff; the stamp intervention continues to be used to good effect in our department. Improved ECG sign-off process has implications for prompt recognition and communication of adverse ECG features and therefore patient safety. We recommend this intervention to other acute settings.

#18036 : Pre-notification from pre-hospital to in-hospital care in Prague (information handover) – Prospective field experimental open-label study (ATMIST study)

Authors:

David Peran (1), Jaroslav Pekara (1), Vladimir Nedved (1), Radomir Vlk (1), Patrik Cmorej (2)

1. Prague Emergency Medical Services, Prague EMS, Prague, CZECH REPUBLIC
2. Emergency Medical Services of the Usti nad Labem Region, EMS Usti nad Labem Region, Usti nad Labem, CZECH REPUBLIC

Keywords: Pre-notification, cognitive aids, handover, EMS

Abstract :

Introduction

Health care providers are paying more and more attention to clinical handover. Previous studies have found that poor handovers resulted in adverse effects for patients. Failures in communication have been identified as one of the major preventable medical errors. Patient safety can be ameliorated by improving handover and by standardising the procedures. This article presents a study that aimed to standardise the process of pre-notification from pre-hospital to in-hospital care to determine if the standardised approach can transfer at least 80% of information.

Methods

We used a modified Delphi method applying the principles of action research to modify and design the form together with all Prague hospitals. We then conducted a prospective field experimental open-label study with all Prague Hospitals (n=11) in February 2018. Every EMS crew was trained in the use of the ATMIST form for pre-notification of the patient from pre-hospital to in-hospital care. The Emergency Medical Dispatch Centre used the form to record the information from the Crews (Protocol 1). The hospital dispatch centre (Protocol 2) used the same form to record the information from the EMS Dispatching. We compared both protocols and monitored whether the information from the field was correctly transferred to the hospital. Descriptive statistics were used, and for further analysis we used a cluster dendrogram to compare which information is transferred similarly.

Results

In February 2018 there were 719 pre-notifications in total. We collected 554 protocols, of which 476 were identified as Prague EMS, and we were able to pair 269 Protocols 1 and 2 (37.41% of all pre-notifications). In the 269 protocols there were 7,262 possible pieces of information to be transferred in total. 82.95% (n=6024) of all information was transferred correctly.

Conclusion

The Prague design of the ATMIST form can be used for pre-notification from pre-hospital to in-hospital care. The form can help to transfer the information correctly. More research is needed to determine the impact on time spent on pre-notification or to support the use of electronic pre-notification.

Trial Registration / Funding Information (only) :

No funding. This study received no specific grant from any funding agency in the public, commercial or non-profit sectors. No registration - not a clinical trial.

#18037 : Standardised medical protocols in the pre-graduate education of paramedics in the Czech Republic – a questionnaire study among students**Authors:**

David Peran (1), Jaroslav Pekara (1), Radomir Vlk (1), Patrik Cmorej (2)

1. Prague Emergency Medical Services, Prague EMS, Prague, CZECH REPUBLIC

2. Emergency Medical Services of the Usti nad Labem Region, EMS Usti nad Labem Region, Usti nad Labem, CZECH REPUBLIC

Keywords: Pre-notification, cognitive aids, handover, EMS

Abstract :**Introduction**

Health care providers are paying more and more attention to standardisation of care. Previous studies have found that poor handovers resulted in adverse effects for the patient. Failures in communication have been identified as one of the major preventable medical errors. Patient safety can be ameliorated by standardising the procedures and by improving handover process.

Methods

We provide a questionnaire to the paramedics' students in 6 schools to find out their familiarity with the standardised protocols used in the emergency medicine. On these 6 schools there is approx. 240 students. We calculated the sample size (using the online calculator on surveymonkey.com) and made a pilot test of the questionnaire on 30 students. We calculated the Cronbach alfa for the questions with Yes/No (n=4) and Likert Scale (n=4).

Online version of the questionnaire was then disseminated to the students.

Results

The sample size was calculated to 148 responders. The Cronbach alfa for the Yes/No questions was calculated as 0.770 and for the Likert scale questions 0.890.

We got 146 responses from the students. The population consists of 73 women (50%) and 73 man (50%). Mean age of the group was 24 years with min 18 and max 56 (IQR1/3 - 21/33) and the mean length of medical practice of 2 years with min 0 and max 36 years (IQR1/3 - 0/4). The level of education is as follow: First year 15.27% (n=20), Second year 29.01% (n=38), Third year 45.04% (n=59) and Fourth year 9.92% (n=13), 46.72% (n=64) of the students are studying in a distant form.

69.86% (n=102) of responders did not meet the standardised protocols during their studies. The respondents already know one or more of these protocols / acronyms: ABCDE, cABCDE, ISBAR, MIST, IMIST-AMBO, D-MIPT, ASHICE, Stroke algorithm, METHAN and SAMPLE. Only 36.30% (n=53) respondents know some of the protocols used for standardised handover. ATMIST was identified in a review article as one of the most used acronym, but in the Czech Republic only 33.56% (n=49) of the respondents know this acronym from the school.

As excellent or very good in the way of understanding was the ATMIST form identified by 95.21% (n=139). We asked also if the acronym is easy in use and 98.46% (n=135) thought that is very easy or easy in use. 78.09% (n=114) of the respondents feel that this approach of handover will reduce the stress during the real handover in the hospital.

Conclusion

Students do not encounter standardized procedures during their paramedics' studies around Prague, Czech Republic. More attention might be paid to the pre-graduate education of the standardised protocols which might affect the safety of care as well as reduce the stress during their first steps in professional career.

Trial Registration / Funding Information (only) :

No funding. This study received no specific grant from any funding agency in the public, commercial or non-profit sectors. No registration - not a clinical trial.

#18038 : Cognitive Aids in Emergency Medicine – Review Abstract

Authors:

David Peran (1), Jaroslav Pekara (1), Vladimir Nedved (1), Radomir Vlk (1), Patrik Cmorej (2)

1. Prague Emergency Medical Services, Prague EMS, Prague, CZECH REPUBLIC
2. Emergency Medical Services of the Usti nad Labem Region, EMS Usti nad Labem Region, Usti nad Labem, CZECH REPUBLIC

Keywords: Cognitive aids, Emergency Medicine, Review

Abstract :**Introduction**

Cognitive aids (CA) are used both in the medical and out-of-medical environment, and have received special attention in recent years. Their main task is to support the execution of all the treatment steps in the right order and to improve technical and non-technical skills. CAs are ideal for situations or actions that have multiple steps, are provided under stress or are acts that pose an increased risk to the patient. CAs are also suitable for information handover (radio pre-notification, handover, etc.).

Method

The literature search was conducted in the Cinahl Complete, Medline Complete (EBSCO), PubMed and Medline OVID databases with the "Cognitive aids" keyword. For the literature search in the Cochrane Library, the keywords "cognitive aid, checklist and manual" and their combinations were used. PRISMA Guidelines were used.

Results

Searching in Cinahl, Medline, PubMed and Ovid resulted in 53, 95, 84, and 92 records respectively. Altogether 190 articles were identified after reading the abstract for further work, of which 39 articles were selected as satisfactory after a more detailed examination.

The references of all 39 articles, together with the references used in the relevant review articles (643 references), were searched and nine additional articles meeting the inclusion criteria were found.

Conclusion

Cognitive aids are an important part of the work of medical teams not only during crisis situations or complicated procedures. Implementation into practice requires the support of the entire organisation. Current research focuses on the integration of cognitive aids into practice to work with, rather than against, clinical judgement and medical expertise.

Even if implemented, all cognitive aid users make mistakes, skip critical steps, or do not use CA at all.

Trial Registration / Funding Information (only) :

No funding. This review received no specific grant from any funding agency in the public, commercial or non-profit sectors. No registration - not a clinical trial.

**#18039 : Evaluation of the pilot use of Nitrous oxide in the pre-hospital care in the capital city of the Czech Republic in the 2018
– retrospective observational study**

Authors:

David Peran (1), Vladimir Nedved (1), Jaroslav Pekara (1), Radomir Vlk (1), Patrik Cmorej (2)

1. Prague Emergency Medical Services, Prague EMS, Prague, CZECH REPUBLIC

2. Emergency Medical Services of the Usti nad Labem Region, EMS Usti nad Labem Region, Usti nad Labem, CZECH REPUBLIC

Keywords: Nitrous Oxide, Analgesia, Pre-hospital Care, Emergency Care, EMS

Abstract :

Introduction

Nitrous oxide is probably one of the oldest professional anaesthetic agents in the history. Despite the fact that it is known for more than 200 years and for more than 100 years it is used as anaesthetic agent, in the pre-hospital setting in the Czech Republic it is used from the year 2016 in a pilot project.

Background

50:50 mixture of nitrous oxide and oxygen known as Entonox® is colourless and tasteless gas. It is indicated for short-term pains of mild to moderate intensity requiring rapid onset and withdrawal of analgesic effect.

Methods

We had analysed data from the Patient's record system used by Prague Emergency Medical Services (Prague EMS) in the year 2018 and identified most frequent diagnoses where Entonox was used and other information such as an analgesics effect.

Results

Most frequent diagnoses where Entonox® was used as analgesics were lower limb injuries (186, 40.17%), upper limb injuries (n=186, 40.17%) and back pain (n=57, 12.31%). It has also been used on abdominal pain, burns, renal colic, chest and head injuries etc. The mean effect of the analgesia was mean pain reduction by 1.94 VAS points.

Discussion

Paramedics are allowed to give the Entonox® without consultation with physician only to injuries to extremities which influenced the results. Our results have shown that the effect of Entonox between VAS groups (1-3 vs. 4-5 vs. 6-10) significantly differs ($p < 0.01$).

Conclusion

The use of nitrous oxide is still at its beginning – Entonox® was used in 0.4% of all resolved cases in the year 2018. The paramedics are using the gas in accordance with the indications (mainly for extremity injuries and back pain) frequently. The study showed that with increasing pain the Entonox® has a greater effect.

Trial Registration / Funding Information (only) :

No funding. This retrospective study received no specific grant from any funding agency in the public, commercial or non-profit sectors. No registration - not a clinical trial.

#18041 : SHELL model in medical simulations**Authors:**

David Peran (1), Jaroslav Pekara (1), Vladimir Nedved (1), Radomir Vlk (1), Patrik Cmorej (2)

1. Prague Emergency Medical Services, Prague EMS, Prague, CZECH REPUBLIC

2. Emergency Medical Services of the Usti nad Labem Region, EMS Usti nad Labem Region, Usti nad Labem, CZECH REPUBLIC

Keywords: Medical Education, SHELL model, Simulation medicine

Abstract :**Introduction**

SHELL model, a conceptual framework proposed by International Civil Aviation Organisation (ICAO), was first introduced in 1975. The name is derived from the initial letters of its components - Software, Hardware, Environment, Liveware, Liveware – representing different components of Human Factors. Although originally created as a model explaining interfaces in Human Factors, it can be successfully used for understanding different needs of training and help to create useful education plan in the medical simulations.

Method

Using the SHELL model in education can focus training at specific needs of employees and prepare them better for cooperation with other components they work with:

- liveware – liveware: co-operation with colleagues and communication with patients and their relatives. This area covers training focused on non-technical skills as leadership, co-operation, teamwork, communication and personality interactions.
- liveware – software: understanding the software, which in this case refers to all the laws, rules, regulations, guidelines, standard operating procedures, customs and conventions. Increasingly, software also refers to the computer-based programmes.
- liveware – hardware: interface between liveware and hardware, so called human-machine system. This covers proper use of all hardware and equipment, but also appropriate design and setting of hardware according to user's needs.
- liveware – environment: acting in those conditions which may be out of the direct control of humans (temperature, weather, darkness, noise, ...) and taking their influence on human work into account (fatigue, limited concentration, ...). It covers physical exercise, training in realistic environment, but also equipment designed to be used in specific environment.

Results

Based on our observation the learners are focusing more on new technology, machines etc. than on the learning objectives that the instructors are trying to teach. This approach brings more comfort to the learners and also instructors because they can concentrate on the learning points.

Conclusion

Education and training of health care professionals, especially those working in emergency medicine, can be successfully designed using the SHELL model. It helps to create a holistic approach and cover all the crucial components of the system. This approach can be used in simulation medicine to provide realistic environment with all aspects as software, hardware and liveware.

Trial Registration / Funding Information (only) :

No funding. This observation received no specific grant from any funding agency in the public, commercial or non-profit sectors. No registration - not a clinical trial.

#18042 : High-sensitivity cardiac troponin T 30-day all-cause mortality in patients with acute heart failure. A propensity score-matching analysis based on the EAHFE registry. EAHFE-TROPICA 4 Study.

Authors:

Alex Roset (1), Marco Cordero (2), Carles Ferré (1), Ferran Llopis (1), Ignasi Bardés (1), Javier Jacob (1)

1. Emergency Department, Hospital Universitari de Bellvitge, Hospitalet de Llobregat, SPAIN
2. Emergency Department, Hospital Universitari de Bellvitge, Barcelona, SPAIN

Keywords: Troponin, acute heart failure, prognosis, emergency department

Abstract :

Background: Acute heart failure (AHF) patients with high levels of troponin have a worse prognosis. High-sensitive troponin T (hs-TnT) has been used as a tool to stratify prognosis in many scales but always as a qualitative variable, not as a quantitative one.

Objectives: The main objective of this study is to determine a cut-off for hs-TnT with an elevated negative predictive value (NPV) for 30-day all-cause mortality.

Methods: We analyzed the EAHFE registry, a prospective follow-up cohort of patients with AHF. A propensity score analysis of the optimal hs-TnT cut-off point was performed, previously determined by a receiver operating characteristic (ROC) curve analysis.

Results: Of the 13791 patients in the EAHFE cohort, we analyzed 3190 patients in whom hs-TnT determination was available. The area under the ROC curve for 30-day all-cause mortality was 0.70 (95%CI 0.68 to 0.71; $p < 0.001$) and established an optimal cut-off of hs-TnT of 35 ng/L. The sensitivity and specificity for this cut-off were 76.2 and 55.5%, respectively, with a NPV of 95.3%. Thirty-four variables showed differences based on the cut-off of 35 ng/L for hs-TnT and a propensity score was made with them. A greater mortality at 30 days was shown in patients with hs-TnT > 35 ng/L in the analysis of the population obtained with the propensity score, with a HR of 2.95 (CI95% 1.83 – 4.75; $p < 0.001$).

Conclusions: A hs-TnT value of 35 ng/L is an adequate cut-off point to evaluate 30-day all-cause mortality with a NPV of 95.3%

#18043 : The role of routine skull x-rays in the management of head injuries in patients under one year of age - a retrospective analysis**Authors:**

William Gentleman (1), Robert Hollis (2), Jennifer Browning (3)

1. NHS Lothian, Royal Infirmary of Edinburgh, Edinburgh, UK
2. Nicola Murray Centre for Ovarian Cancer Research, Edinburgh CRUK Centre, University of Edinburgh, Edinburgh, UK
3. NHS Lothian, Royal Hospital for Sick Children Edinburgh, Edinburgh, UK

Keywords: head injury, x-ray, pediatrics, paediatrics, skull fracture, imaging

Abstract :**Introduction**

Head injury is common amongst children and is a significant cause of childhood morbidity and mortality. Current guidelines in the UK only recommend skull X-ray (SXR) as part of a skeletal survey and recommend performing a head CT scan if clinically indicated. However, clinical assessment can be difficult amongst infants. Policy at the Royal Hospital for Sick Children Emergency Department (RHSCED) in Edinburgh is to perform SXRs in children less than one year of age who present with head injury. Here, we seek to identify potential predictive markers of skull fracture (SF) using data collected from RHSC.

Methods

Patients less than one year of age who presented with head injury to the RHSCED and received SXR between January 2012 and December 2014 were enrolled in the study. Data was collected retrospectively using available patient health records. 476 patients were recruited, of which 475 (99.8%) had evaluable SXR results available. 218 (45.8%) and 258 (54.2%) were female and male, respectively, with a median age of 31 weeks (range 1-52). Median time to presentation from injury was 1.5 hours (range 0.25-336). In cases where mechanism of injury was a fall, 173 (53.6%) were from less than 1 metre and 150 (46.4%) were equal to or greater than 1 metre.

Results

Of the 475 evaluable patients, 52 (10.9%) had at least one fracture identified on SXR. Notably, of these patients 33 (63.5%) did not meet guidelines for a head CT. A total of 97 patients qualified for head CT, but in total only 23 patients had one performed (23.7%). Younger patient age was significantly associated with increased skull fracture rate (SFR) (13/67, 19.4% in <12 weeks of age versus 12/191, 6.3% in >36 weeks, $P=0.003$). The corresponding SFRs in those aged 12-24 and 24-36 weeks were 15.0% and 10.3%, respectively.

Presence versus absence of swelling was associated with increased SFR (36/193, 18.7% versus 16/281, 5.7%, $P<0.0001$). Presence of bruising >5cm was also associated with increased SFR versus those with no bruising (9/21, 42.9% versus 23/205, 11.2%, $P<0.001$). No significant difference in SFR was observed between those with bruising of <5cm and those with no documented bruising (7.9% versus 11.2%, respectively).

Patients in whom SF was identified presented later than those without fractures (median time to presentation 24.0 versus 1.5 hours, $P=0.001$). In those where mechanism of injury was fall, height of fall was not associated with differential SFR.

Conclusions

These data demonstrate that while the rate of SF in this population is low (10.9%), there is a role for SXR in identifying fractures in patients who do not qualify for CT. We have identified several clinical features associated with increased SFR. Patients <12 weeks of age demonstrated a three-fold increase in SFR compared to those >36 weeks of age. Presence of swelling and presence of bruising >5cm each conferred a greater than three-fold increase SFR. These data have the potential to aid stratification of patients into high- and low- risk categories for prioritization of skull fracture assessment in infants presenting with head injuries

Trial Registration / Funding Information (only) :

N/A

#18044 : Nurse practitioners experience of independently treat patients in an emergency department – an interview study**Authors:**

Anna Heidermark (1), Katarina Bohm (2)

1. emergency department, South Stockholm Hospital, Stockholm, SWEDEN
2. Karolinska institut, department of clinical science and education, South Stockholm Hospital, Stockholm, SWEDEN

Keywords: Emergency department, Patient-centered care, Competence development, Nurse practitioners

Abstract :**Background:**

Sweden's emergency care system is undergoing extensive and continuous improvement. This due to the compilations of the Social Board showing that the waiting time for seeing a doctor increase in almost every emergency department. Developing the assignment of the nurse is a crucial component in this undertaking. In a few emergency departments in Sweden nurse practitioners are now working, these nurses are independently evaluating and treating patients. They take care of patients with minor orthopedic injuries, wound treatment and burn injuries. The role of nurse practitioner was developed to reduce waiting time for the patient and offer a development step for experienced nurses within emergency care.

The aim of the study was to examine the nurse practitioners experience of independently treating patient in an emergency department.

Methods:

The method for investigating these nurses' experiences had a qualitative approach. Eight semi structured interviews were conducted with nurse practitioners currently working as nurse practitioners. The interviews took place between December 2017 and Januari 2018. The interviews were transcribed, and the text analyzed using the content analysis.

Results:

The content analysis resulted in the theme: By working in a new capacity the nurses experienced professional development as well as advantages for the patient. The analysis resulted in three categories and nine subcategories. The three categories were; 1 working in a new professional role, 2 patient focus and 3 positive competence development.

1. By **working in a new professional role** the nurses described that it was like being a beginner again, they felt both motivation to learn more and fear to do wrong.
2. By **patient focus** they felt like they could concentrate on the patient in a new way. Because they had their own queue of patients and no one else where going to help them.
3. By **positive competence development** the nurses felt development in their professional role but also felt personal development.

The three categories concludes the informants experiences of independent treatment of patients in the emergency department.

Discussion and conclusions:

The results show predominantly positive experiences. The nurse practitioners experienced professional development while the patients received better care.

#18058 : Immune checkpoint blockade toxicity among patients with cancer presenting to the emergency department**Authors:**

Olivier Peyrony (1), Yoann Tieghem (1), Jessica Franchitti (1), Sami Ellouze (1), Ivonne Morra (1), Isabelle Madelaine-Chambrin (2), Remi Flicoteaux (3), Barouyr Baroudjian (4), Elie Azoulay (5), Sylvie Chevret (6), Jean-Paul Fontaine (1)

1. Emergency Department, Hôpital Saint-Louis, APHP, Paris, FRANCE
2. Pharmacy Department, Hôpital Saint-Louis, APHP, Paris, FRANCE
3. Biostatistics Department, Hôpital Saint-Louis, APHP, Paris, FRANCE
4. Dermatology Department, Hôpital Saint-Louis, APHP, Paris, FRANCE
5. Intensive Care Unit, Hôpital Saint-Louis, APHP, Université Paris Diderot, Paris, FRANCE
6. Biostatistics Department, Hôpital Saint-Louis, APHP, Université Paris Diderot, Paris, FRANCE

Keywords: Immune checkpoint blockade, immune related adverse event, toxicity, cancer, emergency department

Abstract :

Objectives We sought to estimate the prevalence of patients with cancer presenting to the emergency department (ED) who are undergoing treatment with immune checkpoint blockade (ICB) therapy; report their chief complaints; describe and estimate the prevalence of immune-related adverse events (IRAEs).

Methods Four abstractors reviewed the medical records of patients with cancer treated with ICB who presented to an ED in Paris, France between January 2012 and June 2017. Chief complaints, underlying malignancy and ICB characteristics, and the final diagnoses according to the emergency physician were recorded. Abstractors noted if an emergency physician identified that a patient was receiving an ICB and if the emergency physician considered the possibility of an IRAE. The gold standard as to whether an IRAE was the cause was the patients' referring oncologist's opinion that the ED symptoms were attributed to ICB and IRAE according to post-ED medical records. Descriptive statistics were reported.

Results Among the 409 patients treated with ICB at our institution, 139 presented to the ED. Chief complaints were fatigue (25.2%), fever (23%), vomiting (13.7%), diarrhoea (13.7%), dyspnoea (12.2%), abdominal pain (11.5%), confusion (8.6%) and headache (7.9%). Symptoms were due to IRAEs in 20 (14.4%) cases. The most frequent IRAEs were colitis (40%), endocrine toxicity (30%), hepatitis (25%) and pulmonary toxicity (5%). Patients with IRAEs compared with those without them more frequently had melanoma; had received more distinct courses of ICB treatment, an increased number of ICB medications and ICB cycles; and had a shorter time course since the last infusion of ICB. Emergency physicians considered the possibility of an IRAE in 24 (17.3%) of cases and diagnosed IRAE in 10 (50%) of those with later confirmed IRAE. IRAE was more likely to be missed when the referring oncologist was not contacted or when the patient had respiratory symptoms, fatigue or fever.

Conclusions ICB exposes patients to potentially severe IRAEs. Emergency physicians must identify patients treated with ICB and consider their toxicity when patients present to the ED with symptoms compatible with IRAEs.

#18060 : Impact of telemedicine on the treatment results of patients with ST segment elevation myocardial infarction**Authors:**

Arkadi Popov (1), Lilian Lääts (2), Marianna Ležepjokova (1)

1. , North Estonia Medical Centre, Tallinn, ESTONIA

2. , North Estonia Medical Centre, Estonia, ESTONIA

Keywords: telemedicine, STEMI, ST segment elevation myocardial infarction

Abstract :**Introduction**

The Telemedicine System on ambulance was implemented in the EMS center of the North Estonian Medical Centre (NEMC) in October 2014. Within the framework of the project, all ambulance crews were equipped with telemedicine tools, that allow the transmission of diagnostic ECG and other physiological parameters from the scene to the doctor's consultant, video consultation and the 24-hour doctor-consultant supervision are ensured. 12-leads ECGs are stored in the Medical Corpuls server and in the Estonian Image Bank. One of the aims of telemedicine is to provide prior notification of CCU about the arrival of patients with ST segment elevation myocardial infarction (STEMI). According to the investigator's hypothesis, it must improve the patient's internal logistics by accelerating their referral to percutaneous coronary intervention and, as a result, improving treatment results.

Methods

The authors of this study used data collected from hospital, NEMC EMS and the nation-wide EMS databases. The retrospective analysis of data was performed to compare prehospital, hospital logistics and outcome of patients with ST segment elevation myocardial infarction treated by percutaneous coronary intervention (PCI) in 2010-2013 and 2016-2018 – before and after the Telemedicine System implementation. The exclusion criteria were: Glasgow Coma Scale less than 13p at admission, rescue PCI, in-hospital STEMI symptoms onset.

The primary outcome measure was survival at 30 days after admission and rehospitalisation within 30 days from the first admission. The authors also reported secondary outcomes such as the next time intervals: First Medical Contact (FMC) – to PCI Balloon, FMC – to start of PCI, Hospital Door – to PCI Balloon and Hospital Door – to start of PCI.

Results

There were analysed 108 patients with STEMI in 2010-2013 (no telemedicine cohort, NTC) and 101 patients in 2016-2018 (telemedicine cohort, TC). No differences were found between two cohorts in age (66.2 in NTC and 63.1 in TC), sex (male/female 34.3/65.7% vs. 41.6/58.4%) and measured by ambulance systolic blood pressure (137.5 mmHg vs. 140.3 mmHg), heart rate (78.9/min vs. 73.4/min) and pulse oximetry (96.4% vs. 97.1%) results. The significant difference was found in the survival at 30 days after admission between two cohorts: NTC 95.4% (103/108 pt.) vs. TC 100% (101/101 pt., $p < 0,05$), however no differences were found in rehospitalisation rate (NTC 4,63% (5/105, 3 patients died in hospital) vs. TC 2,97% (3/101).

FMC – to PCI balloon time (NTC 148 min vs. TC 127 min, $p < 0,01$), FMC – to start of PCI time (NTC 116 min vs. TC 65 min, $p < 0,001$), hospital door – to PCI balloon time (NTC 86,9 min vs. TC 74,2 min, $p < 0,05$) were significantly better when telemedicine system was used.

Conclusion

12-leads ECG transmission to hospital and on-line consultations of EMS personnel by a doctor-consultant is an efficient tool in improving prehospital, in-hospital logistics and may play an important role in decreasing short-term mortality of STEMI patients.

#18068 : Prognostic Accuracy of The Sequential Organ Failure Assessment(SOFA) and Quick SOFA for Mortality in Cancer Patient with Sepsis Defined by Systemic Inflammatory Response Syndrome(SIRS)**Authors:**

Bo Ra Chae (1)

1. Department of Emergency Medicine, Asan Medical Center, Seoul, KOREA

Keywords: Cancer, Mortality, Sepsis

Abstract :**Objective**

We aimed to assess and validate the accuracy of Sequential Organ Failure Assessment(SOFA) and quick SOFA scores in predicting mortality in active cancer patients with sepsis defined by Systemic Inflammatory Response Syndrome(SIRS).

Design and Method

Among adult active cancer patients who visited Emergency Room with suspected infection, those with sepsis defined by SIRS were consecutively included from May 1st to July 30th, 2017. Active cancer is defined as cancer: receiving anticancer treatment; or diagnosed within the past 6 months; or progressing. Data was extracted by reviewing medical records in a retrospective manner. The primary endpoint was 30-day mortality.

Results

Of 1,137 screened, 301 were included. Mean age was 62.1 (SD 12.4) years, 149 (49.5%) were male, and 263 (87.4%) had solid tumors. The 30-day mortality was 14.3% (43 patients). Among the total 301, the SOFA score was ≥ 2 in 168 (55.8%) and qSOFA ≥ 2 in 23 (7.6%). For those with SOFA ≥ 2 and < 2 , the mortality was 23.2% and 3%, respectively ($P < 0.001$). For those with qSOFA ≥ 2 and < 2 , the mortality was 47.8% and 11.5%, respectively ($P < 0.001$). The AUROC of 30-day mortality for qSOFA was lower than that for SOFA [0.66 (95% CI, 0.56-0.75) vs. 0.79 (95% CI, 0.72-0.87), $P = 0.004$]). However, the combination of qSOFA with lactate ≥ 2 threshold considerably enhanced a discrimination capacity for mortality with an AUROC 0.77 (95% CI, 0.69-0.85), which was similar to SOFA ($P = 0.11$).

Conclusions

In adult cancer patients with sepsis, qSOFA was inferior to SOFA in predicting mortality. However, adding lactate to qSOFA resulted in greater prognostic accuracy for short-term mortality, comparable to SOFA.

Trial Registration / Funding Information (only) :

none/none

#18073 : Triage in resuscitation room of Ibn rochd university Hospital Casablanca**Authors:**

Anass Maaroufi (1), Mohammed Moussaoui (2)

1. Cardiology, Ibn rochd University hospital, casablanca, MOROCCO

2. anesthesiology- critical care- emergency departement, Ibn rochd University hospital, Casablanca, MOROCCO

Keywords: Vital distress, triage , sorting , Vital emergency room , resuscitation room , ICU, death

Abstract :

Introduction: the management of vital distress states within a service emergency room is the top priority of any hospital.

Objectives of the study: make an inventory, quantify the importance of the resuscitation room, patients admitted to resuscitation room and evaluate if they required treatment within , know the different pathologies admitted , as well as the results of the taking in charge.

Material and method of study: this is a prospective , observational descriptive study that has been carried out over a period from 1 June 2018 to 1 July 2018. It concerned all patients who benefited from hospitalization in the resuscitation room, ie 214 patients.

Results: The resuscitation room accounted for 2.78% of emergency department activity during the year 2018. The average age of patients was 44.6 years with a sex ratio of 2.14 M/F. The traumatic pathology represented 27.4%, the neurological pathology 17.2% the cardiovascular pathology 8.8%, and the accidental pathology 9.3%.

11.6% of the patients were transferred to the intensive care unit, 42% went directly to the emergency department . 26.6% of the patients died, 7.9% went out for medical advice and 7% were transferred to medical/surgical services.

35.6% of the patients admitted to the resuscitation room had normal vital signs upon their admissions, 15% had neither existing nor potential vital distress and yet benefited from a care in resuscitation room.

The length of stay was in average 29 hours.

Conclusion: Our study confirms an overuse of SAUV, which supports patients of extreme severity as well as patients who are relatively stable requiring Short Stay Unit management. This over-utilization contributes to the congestion and malfunction of the emergency structure at Ibn Rochd University Hospital.

If the human resources and the equipment are roughly in accordance with the recommendations, the dysfunction of the resuscitation room is secondary to the absence of a sorting system, the massive flow of patients with the virtual absence of pre-hospital medicine and of medical regulation.

#18074 : The utility of TAPSE to prognosticate acute and symptomatic pulmonary embolism. The POCUS study.**Authors:**

Julio Armas Castro (1), Santiago Diéguez Zaragoza (1), Juan Carlos Real López (2), Blas Giménez Fernández (2)

1. Emergency Department, Hospital del Vinalopó, Alicante, SPAIN

2. Emergency Department, Hospital del Vinalopó, Alicante,

Keywords: TAPSE, POCUS, pulmonary embolism, right ventricular dysfunction

Abstract :**Introduction:**

Pulmonary embolism (PE) is the third leading cause of death from cardiovascular disease following myocardial infarction and stroke. Approximately half of all PEs are diagnosed in the emergency department and early detection and treatment have been shown to improve outcomes and survival. The imaging standard for evaluation of acute PE includes an ultrasonography point of care (POCUS).

Right Ventricular Dysfunction (RVD) is a predictor of mortality in PE. Echocardiography looks for various signs of right heart strain which could be indicative of a PE. However, it cannot be used to rule out the diagnosis of PE, since a method with a higher sensitivity is needed. We used in our study the tricuspid annular plane systolic excursion (TAPSE), visual estimation of dilatation of right ventricle (RV) and deviation of ventricular septum and loss of collapsibility of IVC.

Objective:

To evaluate the diagnostic capability of TAPSE measurements for patients with suspicion for acute and symptomatic PE.

Methods:

We prospectively enrolled patients who came to the emergency department with suspicion of acute PE with high probability in Wells Scale in the period of February 2012 to February 2019. Pulmonary emboli can present with a wide range of symptoms including dyspnea, chest pain, shock, or sustained hypotension, and can even be asymptomatic, making it a potentially challenging diagnosis.

Each patient underwent a point of care echocardiogram where a TAPSE measurement was obtained, followed by computed tomography pulmonary angiogram (CTPA). Patients were grouped in two categories: acute PE and no PE.

Results:

A total of 20 patients were enrolled, 20% of whom were diagnosed as having a PE. Of patients with PE, 65% were found to have a clinically significant symptoms and hemodynamic instability. Analysis of TAPSE measurements between patients of two groups was 15.5mm with PE and 22.5mm without PE ($P \leq 0.0001$).

In our study a cutoff TAPSE of 15.5mm shows a sensitivity of 51% (CI 95%, 25.8-79.7%) and a specificity of 100% (CI 95%, 100-100%) for the diagnosis of a clinically significant PE.

The correlation index of Kappa was 0.89 (CI 95% 0.7-1) between POCUS and CTPA. The emergency physicians with training in POCUS accurately visually estimated TAPSE, with a kappa statistic of 0.94 (65% CI, 0.87-0.98).

Conclusions:

TAPSE and POCUS has been found to have a sensitivity of up to 50% in detecting right heart strain in patients with tachycardia or hypotension with a cutoff of 15.5mm.

Utilizing a quick and sensitive modality such as TAPSE can aid in making these time sensitive decisions in the management of PE.

#18075 : The utility of ultrasound and capnography evaluation during cardiopulmonary resuscitation: a point of view.

Authors:

Julio Armas Castro (1)

1. Emergency Department, Hospital del Vinalopó, Alicante, SPAIN

Keywords: ultrasound, cardiopulmonary resuscitation, pocus, capnography

Abstract :

Background: Emergency ultrasound is a bedside, point of care, focused diagnostic procedure with aim to complete the physical examination. The primary goal is to determine the utility of ultrasound and capnography in during cardiopulmonary resuscitation (CPR) in real CPR scenarios and the potential impact on CPR outcomes.

Patients and Methods: The cross-sectional study at Emergency Department of Hospital Vinalopo prospectively evaluated 15 patients from March 2016 to March 2018. The attending physician of emergency medicine evaluated the patients through US images and monitoring with capnography waveforms. Relevant CPR information were recorded for analysis.

Results: From March 2016 to March 2018 15 cardiac arrest patients receiving ultrasonographic and capnographic evaluation were included. The durations of US and capnography procedure were 10.5 ± 1.4 s respectively. Cardiac activity was identified in 5 cases (33.3%), with higher rates of return of spontaneous circulation (ROSC) (95.7% vs. 21.5%, $p < .0001$) and survival to hospital discharge (25.5% vs. 10.0%, $p < .01$). Detection of cardiac activity after 10 min of CPR exhibited 100% sensitivity, specificity, positive and negative predictive value for ROSC. Confirmation of correct intubation was significantly faster by US than by capnography (7.4 ± 1.4 vs. 38.3 ± 110.2 s, $p < .001$). US detected 3 (20%) esophageal intubations and 1 (0.6%) one-lung intubations. All were promptly corrected.

Conclusions: This study demonstrates that focused emergency ultrasound and capnography waveforms may be useful for the diagnosis of several acute complications or situations with a high rate of mortality during cardiac arrest. This protocol is feasible in real CPR scenarios. It confers diagnostic value and prognostic implications which potentially impact the efficacy and outcomes of CPR.

#18076 : Retrospective analysis of the use of veno-arterial extracorporeal membrane oxygenation in non-traumatic cardiac arrest in a large, non-university hospital**Authors:**

Ben Van Bylen (1), Ben Van Bylen (1), Sam Van Boxstael (1), Dieter Mesotten (1), Rene Heylen (1), Margot Vander Laenen (1), Pascal Vanelderden (1)

1. Anesthesia - Intensive Care - Emergency Medicine, Ziekenhuis Oost-Limburg, Genk, BELGIUM

Keywords: Veno-arterial extracorporeal membrane oxygenation, CPR

Abstract :

Introduction

Cardiac arrest is one of the main causes of in-hospital morbidity and mortality.¹ Among surviving patients, severe neurological dysfunction is common and casts a high burden on society. The early use of salvage mechanical support (veno-arterial extracorporeal membrane oxygenation, VA-ECMO) can restore normal perfusion and provide adequate cerebral perfusion.² Recently, the early initiation of VA-ECMO has been incorporated in most advanced life support guidelines.³

Methods

We retrospectively investigated the neurological outcome after VA-ECMO, as a treatment of refractory (i.e. no return of spontaneous circulation within 30 minutes) cardiac arrest of any cause, in a large, non-university hospital from 2014 until 2018. All patients were selected to be started on VA-ECMO after ad-hoc multidisciplinary consultation. The baseline characteristics were age, gender, mortality, out-of-hospital versus in-hospital arrest, cardiac versus non-cardiac cause and neurological functional outcome. The modified Rankin Score (mRS), to measure functional outcome, was scored on the basis of patient files.

Results

From 2014 to 2018, 30 patients were treated with VA-ECMO for refractory cardiac arrest. 21 (70%) were male and 9 (30%) female. Mean age was 50 \pm 19 years. 13 (43%) patients suffered from out-of-hospital cardiac arrest, 17 (57%) patients collapsed while already admitted in the hospital. In 5 (17%) cases, no cardiac cause could be identified, of which all but one occurred out-of-hospital. 16 (53%) patients died (mRS=6) in the Intensive Care Unit (ICU), 14 (47%) patients were successfully weaned from VA-ECMO, of whom 4 died after being discharged from ICU. Currently, 10 (33%) of patients were alive. 9 patients had a mRS of 0, one patient had a mRS of 3. Survival in the out-of-hospital group was similar to the in-hospital group (31% versus 35%).

Discussion

In this retrospective analysis we demonstrated a good long-term survival rate after VA-ECMO for refractory cardiac arrest. Among survivors, neurological status was good with minimal or no neurological deficit. Despite the absence of a formal flowchart for VA-ECMO institution during cardiopulmonary resuscitation, a careful selection of patients appeared to have been done. Patients who suffered out-of-hospital cardiac arrest were on average younger, however, mortality rates were similar. The vast majority of cardiac arrests caused by non-cardiac events occurred outside the hospital doors.

Conclusion

VA-ECMO can be a lifesaving salvage therapy during cardiac arrest with considerably better neurological outcome and may be implemented in every advanced life support guidelines. A standardised protocol and flowchart may even further improve survival and neurological outcome.

#18077 : Use of procalcitonin as a biomarker to predict disease severity and outcome of the patients with community-acquired pneumonia in the emergency department**Authors:**

Bilgen İLKUPLU (1), OZGUR KARCIOGLU (1), OZGUR KARCIOGLU (1), OZGUR DIKME (1), OZLEM DIKME (2)

1. Emergency Medicine, University of Health Sciences, Istanbul Training and Research Hospital, ISTANBUL, TURKEY
2. Emergency Medicine, Koç University Hospital, ISTANBUL, TURKEY

Keywords: Pneumonia, Community-acquired pneumonia, pneumonia, CURB65, Pneumonia Severity Index, Procalcitonin, Emergency Department

Abstract :

Introduction: The objective of this study is to determine the procalcitonin (PCT) levels and their relationship with clinical course and 30-day mortality in patients with pneumonia. A secondary aim of the study is to compare the patients' scores of Pneumonia Severity Index (PSI) and CURB65 with serum PCT levels with respect to their clinical courses.

Materials and Methods: The patients who had been diagnosed with pneumonia and were admitted to the emergency department (ED) between 11.11.2017 and 1.4.2018 were retrospectively abstracted through hospital records. The mean age of the patients was 73.3 ± 11.9 years. The CURB65 and PSI scores of the patients were assigned to either of two classes of severity; i.e., CURB65 <2, CURB65 \geq 2 and PSI I II III, PSI IV-V, respectively. Scoring systems and PCT values predictive powers were compared regarding discharge, admission to wards or intensive care unit (ICU) and mortality within 30 days. Predictive accuracy of PCT levels for the outcome of patients was assessed by calculating the Area Under the Curve (AUC) in the Receiver Operating Characteristic Curve (ROC) analyses.

Results: The severity of the disease is correlated with the hypotension systolic blood pressure (SBP)

Hypotensive patients (systolic blood pressure

A significant correlation was found when the values of PCT markers were compared with PSI and CURB65 scoring systems, it was seen that the PCT value increased in accordance with the PSI and CURB65 scores in both groups. The PCT value was found to be more useful than other two scoring systems for the cut-off value of 0,72 ng/L with 92% specificity, 52% sensitivity and 0,715 predictive power for discharge. On the other hand, it is not sufficient to predict mortality. The CURB65 \geq 2 score had significantly greater predictive power for mortality. In addition, the mean PCT of 20 patients with a mortality rate of 30 days was $6,14 \pm 14,69$ (0,24-50) ng/L. The distinguishing power of CURB65 \geq 2 for mortality was similar to PCT but was significantly lower in PSI IV-V. Both PSI and CURB65 scores predicted admission to hospital. CURB65 \geq 2 score predicted admission to wards, but could not predict ICU admission. There was a significant relationship between ICU admission and PCT, and at a cut-off value of > 2,39 ng/l, 100% sensitivity and 33,68% distinguishing power was found to be 0,672. Even though it is more valuable than the scoring systems, PCT value alone is not enough to decide upon ICU admission.

Conclusion: The PCT value can be used to estimate the severity of disease in patients with a presumptive diagnosis of community-acquired pneumonia and to discharge patients at the cut-off value of 0,72 ng/L. On the other hand, it is not sufficient to predict mortality.

Trial Registration / Funding Information (only) :

We have not received any funding for the study.

#18082 : Hasta la vista, baby. Paediatric re-attenders in the emergency department**Authors:**

Maya Leibowitz (1), Peter Heinz (2)

1. Cambridge University, Faculty of Medicine, Cambridge, UK
2. CUHFT, Addenbrooke's Hospital, Cambridge, UK

Keywords: Paediatric, re-attenders, emergency ambulance,

Abstract :**Introduction**

Every emergency physician's nightmare is hearing that a child they discharged from the emergency department (ED) has been brought back by ambulance. However, the reasons for re-attendance are multifactorial and -thankfully- rarely a result of medical negligence. We aim to describe this group of patients and look into the factors that may have contributed to their re-attendance.

Methods

The re-attendance data of all children (under 16 years of age) at a large University Hospital emergency department with a paediatric census of just under 23,000 attendances p.a. was reviewed between the period of 01 February 2018 and 31 January 2019. The timeframe for re-attendance was 48 hours after the initial ED visit. Only children brought in by ambulance (999/112 call) were included. The electronic patient medical record was reviewed for demographic data, evidence of safety netting information provided as well as reasons for attendance and re-attendance and the outcome of the second ED visit.

Results

There were 896 (4.02%) paediatric re-attendances within 48 hours out of a total of 22,277 attendances, 73 (8.14%) of which were brought in by emergency ambulance. The age group under 2 was overrepresented. Three broad categories of patients could be identified: 19.2% of re-visits were due to infants with bronchiolitis with lack of improvement in their clinical condition or where it was felt their clinical condition had deteriorated. 16.6% of children were frequent service users due to chronic medical conditions, often neurological with recurrent seizures. 6.8% of patients re-presented with febrile seizures following febrile illness. Only 39.3 % of emergency re-attendances were admitted as in-patients. Only one child required PICU admission, no child died.

Discussion

In our discussion we will focus on the following topics:

Targets for re-attendance (as proposed by the Royal College of Emergency Medicine in the UK), where they make sense and how they may worsen outcomes

Safety netting, where it empowers service users, and where it leads to unnecessary re-attendance

Targeting specific patient groups when implementing measures to prevent inappropriate re-admission

Trial Registration / Funding Information (only) :

N/A. This was a service improvement project for which no ethics approval was required.

#18090 : Risk factors of delirium in ICU patients with acute poisoning**Authors:**

HeeYeon Kim (1), Byung Hak SO (1)

1. Emergency medicine, Department of Emergency Medicine, St. Vincent's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Republic of Korea, SEOUL, KOREA

Keywords: Delirium, Poisoning, Intensive care unit, Physical Restraint

Abstract :**Introduction**

This study aims at estimating the incidence of delirium and investigating the associated risk factors and outcomes in ICU patients with acute poisoning.

Methods

The data was collected from the ICU patients admitted via the emergency center over 18 years old presenting with poisoning from 2010 to 2015. Delirium was assessed retrospectively using Intensive Care Delirium Screening Checklist (ICDSC). Risk factors were evaluated with univariate and multivariate analysis.

Results

199 patients participated in this study and a total of 68 (34.2%) of the patients were diagnosed with delirium based on ICDSC score. The delirium group showed statistically significantly higher association with prolonged length of stay in the hospital and ICU in comparison with non-delirium group. The delirium group was associated with greater use of physical restraint. A statistically greater number of patients with pharmaceutical substance poisoning developed delirium over a short period of time than those with non-pharmaceutical substance poisoning. There was no significant difference between the two groups with respect to age, sex, past history, GCS score, vital sign, and application of ventilator care and renal replacement therapy.

Conclusion

The fact that the delirium group had greater length of stay in both the hospital and ICU is consistent with the results from previous worldwide studies in the effects of delirium on the prognosis of the patients who were admitted to ICU suggests possibility for domestic application. Results showed use of physical restraint is positively related to the incidence of delirium. Thus, interventions for minimizing the use of physical restraints and considering alternatives are needed.

Trial Registration / Funding Information (only) :

Approved by Institutional Review Board of St. Vincent's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Republic of Korea

#18096 : Overlooked emergency – burnout syndrome among the emergency department staff**Authors:**

Mona Stankovic (1), Annamária Tőreki (1), Zoltán Pető (1)

1. Department of Emergency Medicine, University of Szeged, Szeged, HUNGARY

Keywords: burnout syndrome, employees of emergency department, psychological immune system

Abstract :

Introduction: Examination of the burnout syndrome in various healthcare fields is of paramount importance for better understanding of the disorder as well as for the establishment of a suitable preventive and intervention program. The emergency departments' employees are a risk group among healthcare workers, so it is our objective to further expand the knowledge on the characteristics of the burnout syndrome among the Hungarian emergency department staff. Aim of this study is to examine the burnout syndrome and its associations with different variables among the workers of the Department of Emergency Medicine at the University of Szeged moreover to develop and finetune a prevention and intervention training for the medical staff to help coping with everyday stress as well as rise awareness to burnout symptoms.

Method: Cross-sectioned design utilizing a self-administrated questionnaire was used to collect data from the staff (n=72). Burnout was measured using the Maslach Burnout Inventory, while psychological immune competence was measured using the Psychological Immune Competence Questionnaire. Upon data collection a three-round training was developed and implemented after which the measurement of burnout was repeated using the same test battery. We tested the interaction between different variables (age, number of children, years spent in healthcare, weekly number of working hours, number of somatic symptoms, social support and psychological immune competence) and burnout subscales (emotional exhaustion, depersonalization and personal accomplishment) using Pearson correlation. Independent samples t-test was used to compare burnout subscale means in different marital status groups, while Mann-Whitney U-test to compare burnout values between genders. Lastly, the data of the retest was compared using paired sample t-test.

Results: We found burnout syndrome to be considerably prevalent among the workers especially nurses and physicians (compared to other staff: medical orderlies, medical clerks). Moderate emotional exhaustion was reported both among doctors and the nursing staff. While physicians reported moderate depersonalization, lower personal accomplishment was measured among the nurses. In both, original and post-training study we found a significant correlation between burnout and age, number of children, number of years in healthcare system, number of physical symptoms, social support and psychological immune system. There was no difference between genders, while the workers who were in a relationship reported significantly lower depersonalization. Due to personnel fluctuation we were able to retest only 54% of the original sample, with no change in burnout results. Nonetheless, the data shows the need for individual burnout intervention which presents in significantly stronger relationship with the psychologist as well as in frequency of contact with the psychologist.

Conclusions: The results obtained show correlations and reveal protective and risk factors in burnout which can be key to establishing a preventive and intervention strategies. The training on burnout syndrome rose awareness among the departments' staff, while personal one to one interventions helped the workers develop individual coping strategies. This data allows us to further develop new institutional intervention techniques. Ethical approval was given by the Ethics Committee of the University of Szeged, with the license number: 122/2017-SZTE (4035).

Trial Registration / Funding Information (only) :

The work was supported by EFOP 3.6.3-VEKOP-16-2017-00009 grant of University of Szeged, Hungary.

#18097 : Emergency Response of Managing thirty-three major burn patients in the Formosa Fun Coast Dust Explosion Disaster in a Metropolitan Hospital without burn units.**Authors:**

Tzu-Yao Hung (1), Yu-Ming Pai (1), Chieh-Hung Lin (1)

1. Emergency Department, Taipei City Hospital, Zhong-Xing Branch, Taipei, TAIWAN

Keywords: Formosan Fun Coast Dust Explosion Disaster, Disaster Response

Abstract :

Introduction

The Formosa Fun Coast explosion was a national disaster with 499 casualties. After the disaster occurred, the Taipei City Hospital admitted a total of 33 burns patients even though it did not have a burns center and promptly shouldered the responsibility of an emergency medical system by mobilizing its entire staff to treat the wounded. In addition to the rarity of multiple casualties from a dust explosion, the Taipei City Hospital does not have a burns center and has fewer overall resources than medical centers. Hence, the experience and outcomes of its response merits an overall analysis and discussion as an examination of Taiwan's responses to large-scale disasters.

Methods

We traced medical records and conducted staff interviews to recreate the background of Taipei City Hospital, which is a district hospital with no burns center, so as to develop a cross-sectional understanding of its responses at that time and examine differences with responses to previous mass casualty incidents. Collection of blood collection data, burn area estimation, intubation rate, and mortality rate of patients were carried out for statistical analysis and comparison with published papers from other medical centers after de-identification. This comparison will be used for academic publication as experience sharing for disaster response.

Result and Discussions

The male gender was 57.14%. The average total burn surface area(TBSA) of patients with standard deviation(SD) was $42.71 \pm 24.06\%$. Among them, 33.33% had inhalation injury. Only one patient was intubated right after arriving the hospital. The average of mean arterial pressure with SD was $109.44 \pm 31.42\text{mmHg}$. The average and SD of initial white blood cells was $29.90 \pm 9.49 \times 10^3/\mu\text{L}$.

Due to limited resources of intensive care units and ventilators, we decided to intubate the patient with inhalation injury in a limited amount. Another patient was intubated 1 week later. The mortality rate is 0% among these 33 patients.

Trial Registration / Funding Information (only) :

N/A

#18100 : Clinical analysis of 17 cases of severe pulmonary tuberculosis with respiratory failure and diffuse lung disease**Authors:**

Jinbao Huang (1), Li Hongyan (1), Lulu Chen (1), Changqing Lan (1), Qinghua Lin (1), Heng Weng (1)

1. , none, Fuzhou, CHINA

Keywords: Pulmonary tuberculosis ; Lung diseases, interstitial ; respiratory failure ; Tomography, X-ray computed

Abstract :

Background: To investigate the clinical features of diffuse interstitial type of severe pulmonary tuberculosis (PTB). **Methods** A total of 17 cases of severe PTB, characterized by acute respiratory failure and diffuse lung disease and confirmed by etiological and (or) pathological examinations at Fuzhou Pulmonary Hospital of Fu Jian from January 2009 to April 2017, were studied. **Results** 11 of 17 cases (64.7%) were males and the patients were aged from 20 to 70 years with a median age of 36 years. Patients with and without immunocompromised underlying disease were 9 cases (52.9%) and 8 cases (47.1%), respectively. The most common symptoms were hyperpyrexia, shortness of breath, cough and sputum coughing. Type I respiratory failure with a median oxygenation index of 138mmHg occurred in all the cases. The chest CT manifestations were characterized by diffuse small nodular or miliary nodules, ground-glass opacities (GGOs), consolidations and fibrotic reticular opacities. Among the 17 patients with PTB, the test of the lower respiratory secretions (sputum, alveolar lavage or bronchoscopic brushing smear) showed as followed: 8 cases (47.1%) were positive for acid fast bacillus (AFB) - smear, 11 cases (64.7%) were positive for mycobacterium tuberculosis (MTB) by bacterium culture, 14 cases (82.3%) were positive for MTB DNA by polymerase chain reaction (PCR). Additionally, the strains identification of MTB and the detection of rifampin (RFP) and isoniazid (INH) resistance in MTB were tested by gene chip technology in 6 cases, of which 5 cases (83.3%) were positive and confirmed as MTB complex without RFP and INH resistance. The transbronchial lung biopsy was performed in 8 cases and bone marrow biopsy in 2 cases and all the pathological examination revealed tuberculosis. There were 9 cases (52.9%) with coexisting extrapulmonary tuberculosis and 11 cases (64.7%) with one or more complications including secondary pulmonary infection (7 cases), acute respiratory distress syndrome (6 cases), acute left heart dysfunction (4 cases), hemophagocytic syndrome (3 cases), pneumothorax (3 cases), septic shock (2 cases), etc. 16 of 17 cases (94.1%) were cured with antituberculosis drugs and other therapy except one death after abandoning treatment. **Discussion & Conclusions** Diffuse PTB was characterized by acute respiratory failure and could lead to various complications. The chest imaging showed bilateral diffuse infiltration distributing and the disease was easy to be misdiagnosed as interstitial pneumonia and severe pneumonia. In combination with bacteriology, pathology, PCR, gene chip technology and tracheoscopy can significantly improve the diagnosis ability of severe tuberculosis. Majority of patients can be obtained satisfactory results after timely diagnosis and early antituberculous treatment.

Trial Registration / Funding Information (only) :

Non clinical trial/The work was sponsored by the fund of the Key Clinical Specialty Discipline Construction Program of Fujian, P.R.C. (Minwei medical administration letter [2018] 145) and the Clinical Medicine Center Construction Program of Fuzhou, Fujian, P.R.C. (2018080305).

#18101 : Ultrasound in Cardiac Arrest**Authors:**

Pourya Pouryahya (1)

1. Casey hospital, Emergency Department, Program of Emergency Medicine, Monash Health, Department of Medicine, School of Clinical Sciences at Monash Health, Monash University, Melbourne, AUSTRALIA

Keywords: Ultrasound, sonography, ACLS, cardiac arrest, POCUS

Abstract :

A comprehensive presentation about utility of Ultrasound in cardiac arrest based on my own experience and studies as well as review and comparison of previous articles containing educational videos and slides. It also highlights current issues of traditional ACLS algorithms without ultrasound and how USS can change the approach in ACLS during cardiac arrest.

It's an oral presentation and the topic has been presented in multiple countries by myself as an invited speaker.

#18105 : Tetanus prophylaxis: are we doing it right? About vaccines.

Authors:

Gaia Bavestrello Piccini (1), Jean-Christophe Cavenaile (2)

1. Master en Médecine d'Urgence, Université Libre de Bruxelles (ULB), Bruxelles, BELGIUM

2. Service d'Accueil des Urgences, CHU Brugmann, Bruxelles, BELGIUM

Keywords: Prophylaxis, vaccine, tetanus, audit, emergency medicine, emergency department, immunization, wounds, trauma, tetanus quick stick, point of care testing, guidelines, algorithm

Abstract :

Background: Patients presenting to the Emergency Department (ED) with wounds prone to tetanus infection, are administered prophylaxis according to specific guidelines, which are based on the immune status of the patient. In some Hospitals, the immune status of the patient can be known through the use of a Point of Care Testing (POCT), the Tetanos Quick Stick (TQS). However, several studies demonstrated that tetanus prophylaxis guidelines were correctly followed only in a minority of the EDs.

Methods: This study takes into account the data of 4248 patients who referred to the ED of the Brugmann University Hospital between January 2017 and December 2018, with wounds potentially at risk for tetanus infection.

Results: In the 12 months of 2017, 2800 patients presented with wounds; of these 2800 patients, 915 were not protected against tetanus infection, while 1885 were still immunized.

In the 6 months of 2018 which were taken into account, 1448 patients presented with wounds; of these 1448 patients, 426 were not protected against tetanus infection, while 1022 were still immunized.

Therefore, in the overall period, out of 4248 patients, 1341 patients were not protected by an active immunity against tetanus infection.

Out of these 1341 non-protected patients, 213 did not receive the vaccine, and were therefore left unprotected.

On the other hand, out of the 2907 who were already protected by active immunity, 12 patients received an unmotivated vaccine dose.

Discussion and Conclusions: These results underline either the incompliance with the prophylaxis administration guidelines or the difficulty in understanding which prophylaxis should be administered. We observed that in some cases, the healthcare practitioners tend to interpret positive tetanus tests as negative ones, and this could be due to the tendency of wanting to be on the "safe" side, and not wanting to commit any error. However, when we administer useless vaccine doses to patients who are already protected, we are committing an error in terms of costs and of patients' safety, since we need to remember that no prophylaxis comes without possible side effects.

In order to avoid type 1 errors (incorrect rejection of the true null hypothesis that the patient is vaccinated, and therefore administering a further vaccination dose) and type 2 errors (failure to reject the false null hypothesis that the patient is vaccinated and therefore not administering the needed vaccine dose, which in this context is of course more dangerous), could be done through a better training of the healthcare providers on the TQS results and on its reliability.

Trial Registration / Funding Information (only) :

Non clinical work This study did not receive any specific funding.

#18106 : Tetanus prophylaxis: are we doing it right? About Immunoglobulins.**Authors:**

Gaia Bavestrello Piccini (1), Jean-Christophe Cavenaile (2)

1. Master en Médecine d'Urgence, Université Libre de Bruxelles (ULB), Bruxelles, BELGIUM
2. Service d'Accueil des Urgences, CHU Brugmann, Bruxelles, BELGIUM

Keywords: Prophylaxis, immunoglobulins, tetanus, audit, emergency medicine, emergency department, immunization, wounds, trauma, tetanus quick stick, point of care testing, guidelines, algorithm

Abstract :

Background: Patients presenting to the Emergency Department with wounds, receive prophylaxis against tetanus according to specific guidelines, based on the immune status of the patient. Vaccine administration will induce a long-lasting active immunity, however the response usually takes days/weeks to develop. Human tetanus immunoglobulin administration instead, will provide an immediate but only temporary protection.

In order to administer the correct prophylaxis, wounds need to be differentiated between clean and tetanus-prone wounds. In addition, particularly 'high- risk' wounds need to be identified. High-risk tetanus-prone wounds require prophylaxis with tetanus immunoglobulin, regardless of the immunization status of the patient.

Numerous studies demonstrated that tetanus prophylaxis guidelines were correctly followed in a minority of the EDs.

Methods: This study takes into account the data of 341 patients who referred to the ED of the Brugmann University Hospital between January 2018 and June 2018, with wounds potentially at risk for tetanus infection.

Results: 227 (66.57%) patients out of 341 presented with dirty wounds. Of these 227 patients, 6 had an active tetanus immunity.

Immunoglobulins were administered to 2 (0.88%) patients; of these patients, one was already protected against tetanus, and anyways received the vaccine as well, while the immune status of the other patient was unknown.

This therefore means that, excluding the two aforementioned cases, of the patients who were not protected against tetanus, no one received the correct prophylaxis for tetanus-prone wounds.

Of the 6 patient that were instead already protected, and which presented with high risk wounds, only one patient received the correct prophylaxis with Immunoglobulins, while the remaining 5 patients (83.34%), received a non-motivated vaccine dose.

Discussion and Conclusions: These dramatic results might be explained by the difficulty of determining the tetanus risk status of each wound in the confusion of the ED, as well as by a lack of thorough understanding of the tetanus prophylaxis guidelines.

The management of tetanus prone wounds could be ameliorated by a better training of the healthcare providers, in the first instance the "younger" ones, as well as by rendering accessible a schematized flowchart to follow in the Emergency Department, in order to determine whether the wound is clean or not, and the necessary prophylaxis.

Trial Registration / Funding Information (only) :

Non clinical work. This study did not receive any specific funding.

#18111 : The effect of meteorological conditions and air pollution on the occurrence of type A and B acute aortic dissections**Authors:**

Nan Xie (1), Lei Ye (1), Liqun Zou (1)

1. sichuan, West China Hospital, Sichuan University, Chengdu, CHINA

Keywords: Acute aortic dissection; Epidemiology; Meteorology; Ambient temperature; Air pollutants

Abstract :

Objectives To explore the association of weather conditions and air pollutants with occurrence risk of acute aortic dissections (AADs). **Methods** Patients who consecutively admitted to the emergency units of our hospital for AAD between Dec. 1, 2013 and Apr. 30, 2017 were included. Their medical records were retrospectively reviewed. The daily meteorological indexes and air pollutants values during the study period were provided by the Chengdu Meteorological Bureau. **Results** A total of 345 patients with AAD were included. The results showed the occurrence rate of AAD was higher in winter than that in summer ($p < 0.001$). Statistical analysis highlighted winter days (OR 7.50, 95%CI: 4.05-10.52) and large daily temperature change (DTC) (OR 3.10, 95%CI: 1.06-9.22) were significantly independent risk factors for AAD onset. In addition, air quality index (AQI) (OR 1.15, 95%CI: 1.09-1.22), PM_{2.5} (OR 1.53, 95%CI: 1.38-1.71), SO₂ (OR 1.24, 95%CI: 1.11-1.39), NO₂ (OR 0.40, 95%CI: 0.34-0.46), O_{3_8H} (OR 1.47, 95%CI: 1.07-2.02) and average wind speed (OR 0.82, 95%CI: 0.72-0.93) were also significantly associated with the occurrence of AAD. Three of the interactions between these variables were significant and remained in the model (DTC with O_{3_8H}, season with DTC and PM_{2.5}). Interestingly, DTC and O_{3_8H} were found to be only independent risks for type A disease. **Conclusions** Our results provide evidence that winter days and larger DTC could significantly increase the onset risk of AADs in west-China district. In addition, AQI, PM_{2.5}, SO₂, NO₂ and average wind speed were also found to be significantly associated with onset of acute aortic events.

#18114 : Prognostic impact of the conversion to a shockable rhythm from a non-shockable rhythm for patients suffering from out-of-hospital cardiac arrest**Authors:**

Alexis Cournoyer (1), Sylvie Cossette (2), Brian Potter (3), Raoul Daoust (4), Luc de Montigny (5), Luc Londei-Leduc (3), Yoan Lamarche (4), Dave Ross (6), Judy Morris (4), Jean-Marc Chauny (4), Catalina Sokoloff (3), Jean Paquet (7), Martin Marquis (7), Martin Albert (4), Francis Bernard (4), Massimiliano Iseppon (4), Éric Notebaert (4), Yiorgos Alexandros Cavayas (4), André Denault (2)

1. Université de Montréal, Hôpital du Sacré-Coeur de Montréal, Hôpital Maisonneuve-Rosemont, -, Montréal, CANADA
2. Université de Montréal, Institut de Cardiologie de Montréal, -, Montréal, CANADA
3. Université de Montréal, Centre Hospitalier de l'Université de Montréal, -, Montréal, CANADA
4. Université de Montréal, Hôpital du Sacré-Coeur de Montréal, -, Montréal, CANADA
5. Corporation d'Urgences-santé, -, Montréal, CANADA
6. Université de Montréal, Corporation d'Urgences-santé, -, Montréal, CANADA
7. Hôpital du Sacré-Coeur de Montréal, -, Montréal, CANADA

Keywords: Out-of-hospital cardiac arrest, extracorporeal resuscitation, initial rhythm, shockable rhythm, prognosis

Abstract :

Background

For patients suffering from an out-of-hospital cardiac arrest (OHCA), having an initial shockable rhythm is a marker of good prognosis. As such, it has been suggested as one of the main selection criteria for extracorporeal resuscitation (E-CPR). However, the prognostic implication of converting from a non-shockable to a shockable rhythm, as compared to having an initial shockable rhythm, remains uncertain, especially among patients that can otherwise be considered eligible for E-CPR. The objective of this study was to evaluate the association between the initial rhythm and its subsequent conversion and survival following an OHCA, for the general population and for E-CPR candidates.

Methods

This study used a registry of OHCA in Montreal, Canada. Adult patients suffering from a non-traumatic OHCA for whom the initial rhythm was known were included. Patients were considered E-CPR candidates if they met the following criteria: less than 65 years of age, witnessed collapse and bystander cardiopulmonary resuscitation, no return of spontaneous circulation after 15 minutes of prehospital resuscitation. The primary outcome measure was survival to hospital discharge. The association of interest was assessed using a multivariable logistic regression, if appropriate. If not, it was planned to perform only univariate analyses using a Chi-squared test or a Fisher's exact test, as appropriate.

Results

A total of 6681 patients (male=64%, mean age=70 years [standard deviation {SD}=17], survival=11%) were included, of whom 1788 (27%) had an initial shockable rhythm, 1749 (26%) had pulseless electrical activity (PEA) and no subsequent shockable rhythm, 295 (4%) had PEA and a subsequent shockable rhythm, 2694 (40%) had asystole and no subsequent shockable rhythm, and 155 (2%) asystole and a subsequent shockable rhythm. As compared to patients having an initial shockable rhythm, patients in all other groups had significantly lower odds of survival (adjusted odds ratio [AOR] between 0.15 [95% confidence interval {CI} 0.12-0.18] and 0.017 [95%CI 0.010-0.030]; $p < 0.001$ for all comparisons). Among patients with a PEA and asystole, there was no association between evolving to a shockable rhythm and survival to hospital discharge (AOR=0.74 [95%CI 0.40-1.35], $p=0.32$, and AOR=1.37 [95%CI 0.17-10.83], $p=0.77$, respectively). A total of 556 (male=73%, mean age=53 years [SD=10], survival=18%) patients were considered E-CPR candidates according to their clinical characteristics. Among these patients, 248 (27%) had an initial shockable rhythm, 175 (31%) had PEA and no subsequent shockable rhythm, 26 (5%) had PEA and a subsequent shockable rhythm, 76 (14%) had asystole and no subsequent shockable rhythm, and 5 (1%) asystole and a subsequent shockable rhythm. Given the small number of patients and events in some groups, only univariate analyses were performed. Patients with an initial shockable rhythm had better odds of survival than patients in all other groups ($p < 0.001$ for all comparisons). No other comparisons yielded significant results ($p=0.09$ to $p=0.80$).

Conclusions

There is no clinically significant association between the conversion to a shockable rhythm and survival in patients suffering from OHCA. The initial rhythm remains a much better outcome predictor than subsequent rhythms and should be preferred when evaluating the eligibility for advanced resuscitation procedures.

Trial Registration / Funding Information (only) :

Financial support: This project received funding from the 'Département de médecine familiale et de médecine d'urgence de l'Université de Montréal' and the 'Fonds des Urgentistes de l'Hôpital du Sacré-Coeur de Montréal'.

#18115 : Direct oral anticoagulants bleeding events in patients with atrial fibrillation vs venous thromboembolism admitted to an emergency department: Real-life study**Authors:**

Farès Moustafa (1), Thomas Fleuchot (2), Mathilde Quinty (3), Sonia Ajimi (4), Dorian Teissandier (2), Jean-Baptiste Bouillon (3), Julien Raconnat (1), Jeannot Schmidt (1)

1. pôle SAMU-SMUR-Urgences, CHU de Clermont-Ferrand, Clermont-Ferrand, FRANCE
2. Pôle SAMU-SMUR-Urgences, CHU de Clermont-Ferrand, Clermont-ferrand, FRANCE
3. Urgences Adultes, CHU Clermont-Ferrand, Clermont-Ferrand, FRANCE
4. pôle SAMU-SMUR-Urgences, CHU Clermont-Ferrand, Clermont-Ferrand, FRANCE

Keywords: bleeding, anticoagulation, VTE, atrial fibrillation

Abstract :

Introduction: Direct oral anticoagulants (AOD) are prescribed for both atrial fibrillation (AF) and venous thromboembolic disease (VTE). In addition, like any anticoagulant treatment, their use may be associated with the occurrence of haemorrhagic complications. To our knowledge, no study compared hemorrhagic events between these two indications. The objective of our study is to compare these two populations in terms of hemorrhagic incidence and clinical-biological characteristics.

Method: We performed a retrospective and monocentric study from RATED database (NCT02706080) in our emergency department. Major patients under AOD, for AF or VTE, were included. Patients treated for dual MTEV and FA indication were excluded.

Results: Of 525 patients included, 100 patients (19%) were on Dabigatran, 282 (54%) on Rivaroxaban and 143 (27%) on Apixaban with 149 patients (28.4%) treated with VTE and 376 (71.6%) with FA . Of the 95 patients who had hemorrhage, 27 patients (28.4%) were treated for VTE and 68 (71.6%) for AF, or 18.4% hemorrhages in the MTEV group versus 18.3% in the FA group. Patients in the FA group were older (77.4 ± 11.0 vs 62.8 ± 19.6 , $p < 0.001$), had more arterial hypertension (51.9% vs 33.6%, $p < 0.001$), more stroke (21.1% vs 8.7%, $p < 0.001$), more myocardial infarction (21.8% vs 13.1%, $p = 0.029$), more associated treatments (3.7 versus 3, $p < 0.001$), and higher hemorrhagic risk scores. Paradoxically, when analyzing subgroups "AF with haemorrhage" versus "VTE with bleeding", apart from the persistent age difference (78.6 ± 10.2 versus 60.6 ± 21.1 , $p < 0.001$), the medical history became comparable in the two groups.

Conclusion: If patients treated with AOD for AF seem to be different from patients treated for VTE in terms of age or medical history, our study showed that during the occurrence of a haemorrhagic event these differences faded, suggesting that patients with bleeding do not differ, regardless of the therapeutic indication.

Trial Registration / Funding Information (only) :

NCT02706080

#18116 : Assessment of the management of acute cholecystitis diagnosed in an emergency department of a French University Hospital**Authors:**

Mélissa Fleury (1), Farès Moustafa (2), Nicolas Dublanchet (3), Marie Thomas (4), Mathilde Quinty (4), Sonia Ajimi (5), Marine Mondet (5), Jeannot Schmidt (2)

1. Pôle SAMU-SMUR-Urgences, CHU de Clermont-Ferrand, Clermont-ferrand, FRANCE
2. pôle SAMU-SMUR-Urgences, CHU de Clermont-Ferrand, Clermont-Ferrand, FRANCE
3. Pôle SAMU - SMUR - Urgences, CHU de Clermont-Ferrand, Clermont-Ferrand, FRANCE
4. Urgences Adultes, CHU Clermont-Ferrand, Clermont-Ferrand, FRANCE
5. pôle SAMU-SMUR-Urgences, CHU Clermont-Ferrand, Clermont-Ferrand, FRANCE

Keywords: cholecystitis, emergency, management

Abstract :

Introduction

Acute cholecystitis is an incidental biliary disease and a frequent reason for emergency room visits. Its incidence is high with a significant socio-economic impact. The number of cholecystectomy in France is increasing.

The main objective of our study was to evaluate compliance with the recommendations of the High Authority for Health (HAS) 2013 and the Tokyo Guidelines 2013 (TGL13) in the management of patients diagnosed with Acute Cholecystitis in our French University Hospital.

Material and methods

We conducted a monocentric, retrospective and observational study including all adult patients for whom a diagnosis of Acute Cholecystitis was carried in the emergency department of our French University Hospital, between January 1, 2016 and December 31, 2016. The population characteristics have been described and the diagnostic and therapeutic course of these patients has been compared with the French recommendations of HAS 2013 and the Japanese Guidelines (2013).

Results

A total of 70 patients were selected including 37 men (53%). The mean age was 70 ± 17 years and 65 patients had a follow-up of more than 1 year. The most common comorbidity was hypertension (40%) and 20% were diabetic. Forty-three percent of patients consulted less than 24 hours after the onset of symptoms and almost two-third in the first 72 hours. Cholecystectomy was performed in 52 patients (74%) of whom 49 (94%) were laparoscopic. Surgery was performed less than 24 hours after admission for 29 patients (56%) and was performed in the first hospitalization for 42 patients (81%) with a median time of 1 day [IQR : 0-2].

Thus, 71% of patients received a management in accordance with french recommendations and only 54% according to TGL13. Respectively, 95% and 88% of patients out-of french and TGL13 guidelines were justified and recorded in the medical file. The cumulative duration of the two hospitalizations for patients operated later was twice that of the patients operated in the first time of hospitalization (4 days [3; 9] vs 8 days [6; 14], $p = 0.0361$).

The duration of hospitalization of patients operated without TGL13 recommendations was significantly greater (11.6 days vs 5.4 days, $p = 0.0021$), the intraoperative complications significantly more frequent (56% vs 25%, $p = 0.029$), as well as the recurrence rate (53% vs 7%, $p = 0.009$). For 14 patients (27%), post-operative complications occurred, with no significant difference in terms of non-compliance with recommendations. Eleven deaths were recorded during the follow-up period, 3 (4.6%) related to the biliary pathology.

Conclusion

In our center, the recommendations of the HAS and TGL13 are generally respected. If necessary, the justification of the therapeutic approach and almost always drawn in the medical file. Failure to comply with these recommendations is associated with an increase in complications, particularly intraoperative complications, length of hospital stay and recurrence rate.

The update of the Tokyo Guidelines in 2018, taking into account the general condition and co-morbidities of the patient at admission, may be more appropriate for our population, whose average age is high and comorbidity existing series.

#18117 : RISK STRATIFICATION OF EMERGENCY PULMONARY EMBOLISM ACCORDING TO THE S-PESI SCORE

Authors:

Farès Moustafa (1), Adrien Robert (2), Haithem Debbabi (3), Marjolaine Borel (1), Marie Valette (1), Christophe Perrier (1), Julien Raconnat (1), Jeannot Schmidt (1)

1. pôle SAMU-SMUR-Urgences, CHU de Clermont-Ferrand, Clermont-Ferrand, FRANCE
2. Pôle SAMU-SMUR-Urgences, CHU de Clermont-Ferrand, Clermont-ferrand, FRANCE
3. Urgences Adultes, CHU Clermont-Ferrand, Clermont-Ferrand, FRANCE

Keywords: pulmonary embolism, SPESI, emergency

Abstract :

Introduction Venous thromboembolism (VTE) is a common pathology. It affects 180 cases per 100 000 inhabitants including 120 deep vein thromboses (DVT) and 60 pulmonary emboli (PE) corresponding to 40 000 pulmonary embolisms per year in France. The clinical presentation of pulmonary embolism is sometimes poor and requires the use of stratification scores for mortality risk. The s-PESI score has excellent sensitivity and a strong negative predictive value of the 30-day mortality. The main objective of our study was to evaluate the mortality at 6 months and 1 year of pulmonary embolism based on S-PESI score calculated at the emergency department during diagnosis. **Methods :** We performed a retrospective, single-center, descriptive study of patients admitted to our Center Hospitalo-Universitaire for an EP between 07/10/2013 and 08/12/2016. The study was conducted from the "RIETE" database (NCT02832245). The s-PESI score was calculated at admission during PE diagnosis. **Results:** Of the 379 patients included, 261 (68%) were classified s-PESI ≥ 1 and 118 (32%) s-PESI = 0. The group s-PESI = 0 compared to the group s-PESI ≥ 1 was younger [56.8 years +/- 15.6 vs 76.5 years +/- 14.4; (p <0.001)] and had a shorter hospital stay [8.7 vs 13.2 days; (P = 0.0001)]. In the group s-PESI ≥ 1 , 38 deaths were recorded in 12 months, representing an overall survival of 82.5% at 1 year against no death in the group s-PESI = 0. Regarding the criteria of the s-PESI score, the oxygen saturation <90% significantly increased the mortality (p <0.03) in univariate analysis. In addition, the increase in NT-proBNP and the increase in troponin were significantly associated with an increase in mortality (p <0.05 and p <0.009, respectively). Multivariate analysis showed that a patient with a history of cancer was nine times more likely to die (HR 9.6, 95% CI = [3.98, 23.11], p <0.001) with overall survival at 6 months of 75% (95% CI = [0.64, 0.84;] p <0.05).

Conclusion :

Our retrospective study has shown that the s-PESI score items most predictive of mortality appear to be the presence of cancer at diagnosis and presentation with an oxygen saturation of less than 90% at admission. The use of a composite criterion associating troponin and NPP may be of interest in long-term stratification, perhaps including in patients with s-PESI = 0.

Trial Registration / Funding Information (only) :

NCT02832245

#18118 : Study of thrombin generation in three populations of patients on oral anticoagulants: bleeding with reversion, haemorrhagic accidents without reversion or haemorrhagic accident**Authors:**

Farès Moustafa (1), Dorian Teissandier (2), Amélie Denaives (3), Thomas Sinegre (3), Julien Raconnat (1), Charlotte Ayzac (4), Aurélien Lebreton (5), Jeannot Schmidt (1)

1. pôle SAMU-SMUR-Urgences, CHU de Clermont-Ferrand, Clermont-Ferrand, FRANCE
2. Pôle SAMU-SMUR-Urgences, CHU de Clermont-Ferrand, Clermont-ferrand, FRANCE
3. Laboratoire d'Hématologie biologique, CHU de Clermont-Ferrand, Clermont-Ferrand, FRANCE
4. pôle SAMU-SMUR-Urgences, CHU Clermont-Ferrand, Clermont-Ferrand, FRANCE
5. Laboratoire d'Hématologie biologique, CHU de Clermont-Ferrand, Clermont-ferrand, FRANCE

Keywords: bleeding, anticoagulation, reversal therapy

Abstract :

Introduction: Bleeding under oral anticoagulant is a frequent reason for consultation in the emergency department. The aim of our study was to compare thrombin generation (TG) parameters in 3 populations under oral anticoagulant: severe bleeding patients who received procoagulant factors, patients with non-severe bleeding without reversion and anticoagulated patients without bleeding events.

METHOD: We conducted a prospective, single-center study of TG in patients under oral anticoagulant (VKA, Direct Oral Anticoagulants (DOACs): rivaroxaban, dabigatran, apixaban). The study was performed on platelet-poor plasma collected on arrival (V1) before reversal therapy, then 30 min (V2), 6h (V3) and 24h (V4) after reversal.

RESULTS: 307 patients were included in this study with 98 severe bleeding reversed, 95 patients with clinical relevant bleeding but non-reversed and 108 patients without bleeding. For V1, VKA patients with reversed bleeding had a significant decrease in the main TG parameters compared to patients without bleeding ($p = 0.017$). Moreover at V1, the main parameters of TG were significantly decreased for VKA compared to DOACs ($p < 0.001$) and between anti-IIa compared to anti-Xa ($p < 0.001$). At visits V2, V3 and V4, reversal therapy restored a normocoagulable state for VKA patients with a significant increase in key TG parameters between V1 and V2-V3-V4 ($p < 0.001$). For DOACs reversed by PCC or PCCactivated, a significant hypercoagulability state was demonstrated on the TG whereas a normal coagulation and no hypercoagulable state was found for those under dabigatran reversed by the idarucizumab.

CONCLUSION: Patients on VKA regained a comparable coagulation state as healthy subjects after reversal therapy, whereas patients treated with DOACs and reversed with PCC or PCCa induced a hypercoagulable state. Probably, this hypercoagulable state could be minimized by reducing the doses of PCC or PCCa, or be circumvented by the use of specific antidotes.

#18119 : Degeneration of Shockable Rhythm According to the No-flow Time for Out-of-Hospital Cardiac Arrest Patients**Authors:**

Alexis Cournoyer (1), Sylvie Cossette (2), Raoul Daoust (3), Judy Morris (3), Jean-Marc Chauny (3), Brian Potter (4), Luc de Montigny (5), Dave Ross (6), Luc Londei-Leduc (4), Yoan Lamarche (3), Jean Paquet (7), Martin Marquis (7), Éric Notebaert (3), Francis Bernard (3), Martin Albert (3), Éric Piette (3), Yiorgos Alexandros Cavayas (3), André Denault (2)

1. Université de Montréal, Hôpital du Sacré-Coeur de Montréal, Hôpital Maisonneuve-Rosemont, -, Montréal, CANADA
2. Université de Montréal, Institut de Cardiologie de Montréal, -, Montréal, CANADA
3. Université de Montréal, Hôpital du Sacré-Coeur de Montréal, -, Montréal, CANADA
4. Université de Montréal, Centre Hospitalier de l'Université de Montréal, -, Montréal, CANADA
5. Corporation d'Urgences-santé, -, Montréal, CANADA
6. Université de Montréal, Corporation d'Urgences-santé, -, Montréal, CANADA
7. Hôpital du Sacré-Coeur de Montréal, -, Montréal, CANADA

Keywords: Out-of-hospital cardiac arrest, shockable rhythm, rhythm degeneration

Abstract :

Background

Patients for whom the out-of-hospital cardiac arrest (OHCA) is not witnessed are generally not considered eligible for extracorporeal resuscitation (E-CPR) because the duration before the initiation of their resuscitation (no-flow) is uncertain. It has previously been proposed that an initial shockable rhythm (SR) strongly suggested a short period of no-flow. The objective of this study was to describe the association between the duration between the initiation of the prehospital resuscitation and the presence of a SR for patients suffering from an OHCA.

Methods

The present cohort study used a registry of adult OHCA between 2010 and 2015 in Montreal, Canada. Adult patients suffering from a non-traumatic OHCA for whom the OHCA was witnessed, who did not have by-stander cardiopulmonary resuscitation were included. Patients who had a paramedic-witnessed OHCA were also included as a control group (no-flow time = 0 minutes). Patients who experienced a return of spontaneous circulation (ROSC) before the paramedics' arrival or for whom the initial rhythm was not known were excluded. The evolution of the proportion of SR was initially described and a multivariable logistic regression controlling for pertinent demographic and clinical variables (e.g. age, gender, time of the day).

Results

A total of 1751 patients (male = 67%, mean age = 69 years [standard deviation = 16]) were included in the main analysis, of whom 603 (34%) had an initial shockable rhythm. A total of 663 other patients had their OHCA witnessed by paramedics. A shorter no-flow duration was associated with the presence of an initial SR (adjusted odds ratio = 0.97 [95% confidence interval = 0.94-0.99], $p=0.016$). However, this relation was not linear and the proportion of SR does not seem to lower until 15 minutes of no-flow duration (0 min = 35%, 1-5 min = 37%, 5-10 min = 35%, 10-15 min = 34%, more than 15 min = 16%).

Conclusion

Although the proportion of patients with a SR decreases as the no-flow duration increase, this relationship does not appear to be linear. The main decline in the proportion of patients with SR seems to occur after the fifteenth minute of no-flow time.

Trial Registration / Funding Information (only) :

Financial support: This project received funding from the 'Département de médecine familiale et de médecine d'urgence de l'Université de Montréal' and the 'Fonds des Urgentistes de l'Hôpital du Sacré-Coeur de Montréal'.

#18120 : Management of monotraumatic pain with methoxyflurane in emergency department

Authors:

Ludovic Miraillet (1), Fares Moustafa (2), Cyril BONHOMME (3), Sylvie Greck (4), Sebastien Loiseau (5), Laure Jainsky (6), Denis Gonzalez (7), Julien Raconnat (2), Jeannot Schmidt (2)

1. Urgences Adulte CHU Clermont-ferrand, CHU Clermont-ferrand, Clermont-Ferrand, FRANCE
2. pôle SAMU-SMUR-Urgences, CHU de Clermont-Ferrand, Clermont-Ferrand, FRANCE
3. Urgences Adultes, CHU Clermont-Ferrand, Clermont-Ferrand, FRANCE
4. Urgences Adultes, CH Moulins, Moulins, FRANCE
5. Urgences Adultes, CH Montluçon, Montluçon, FRANCE
6. Urgences Adultes, CH Issoire, Issoire, FRANCE
7. pôle SAMU-SMUR-Urgences, CHU Clermont-Ferrand, Clermont-Ferrand, FRANCE

Keywords: pain, emergency, monotraumatic injury

Abstract :

Introduction :

Inhaled methoxyflurane is a non-opioid, self-administered inhaled analgesic agent used in Australia since 1993 and in New Zealand since 2002.

In France, the Transparency Commission of the HAS of November 30, 2016 issued a favorable opinion for the inclusion of methoxyflurane. Its efficacy has been demonstrated versus placebo in patients with predominantly mild pain (inclusion criteria: pain score ≥ 4 and ≤ 7 on EN, no inclusion of patients with very severe pain > 7). The literature search finds a lack of study of sufficient methodological quality having compared it to other analgesics currently available.

The objective of this study will be to evaluate the effectiveness of methoxyflurane in the management of pain patients in emergency or pre-hospital settings.

Materiel and Methods

This is an observational, multicenter, prospective study. The care of the patient is not changed by the research. Patients over the age of 18 with monotrauma with an EN greater than or equal to 4 will be included.

Résultats

We included 99 patients including 85 in adult emergencies and 15 in pre-hospital). These patients had upper limb trauma in 44% of cases, lower limb in 21% of cases, spine in 4% and trunk in 1% of cases with a mean delay between trauma and admission to the emergency department. 103 min.

The mean EN on arrival was 7.6 +/- 1.7 with 7.4 +/- 1.8 in emergencies and 8.8 +/- 1.1 in pre-hospital. At 15 minutes, the EN was 4.5 +/- 2.8 (4.8 +/- 2.6 in emergencies and 3.5 +/- 3.3 in pre-hospital). At 30 minutes, it was 3.8 +/- 2.6 (4.0 +/- 2.6 in emergencies and 2.75 +/- 2.1 in pre-hospital) and 3.7 +/- 2.7 (4.0 +/- 2.6 in emergencies and 2.2 +/- 2.1 pre-hospital) at 60 minutes. These patients had coanalgesia in 62% of cases, VVP in 44% of cases and had adverse effects in 47% of cases.

Conclusion

This multicenter and prospective study shows the interest of using Pentrox in case of monotrauma with a decrease in EN of 3 points at 15 minutes and 4 points at 30 minutes. Randomized, blinded and prospective studies are needed to judge their efficacy compared to other molecules.

#18121 : EVALUATION OF THE GRAVITY OF ALCOHOL-RELATED HEPATIC DISEASES: A RETROSPECTIVE STUDY IN ADULT EMERGENCIES**Authors:**

Louise Puret (1), Farès Moustafa (2), Loic Dopeux (2), Christophe Perrier (2), Mathilde Quinty (3), Sonia Ajimi (4), Charlotte Ayzac (4), Julien Raconnat (2), Jeannot Schmidt (2)

1. Urgences Adultes, CHU Clermont-ferrand, Clermont-Ferrand, FRANCE
2. pôle SAMU-SMUR-Urgences, CHU de Clermont-Ferrand, Clermont-Ferrand, FRANCE
3. Urgences Adultes, CHU Clermont-Ferrand, Clermont-Ferrand, FRANCE
4. pôle SAMU-SMUR-Urgences, CHU Clermont-Ferrand, Clermont-Ferrand, FRANCE

Keywords: alcohol, hepatic, emergency

Abstract :BACKGROUND

Alcohol remains the main cause of chronic liver disease which has a natural history marked by periods of acute decompensation. One specific type of acute decompensation, Acute-on-Chronic Liver Failure (ACLF), has recently been described; it is associated with one or multi organ failure and carries a high mortality.

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METHODOLOGY

A retrospective observational study was conducted at the emergency department of our University Hospital, from January to December 2017. (combien?) Patients with alcoholic liver disease were selected. MELD, MELD Na, and Child Pugh scores were calculated and compared with new scores developed by the European Association for the Study of the Liver-chronic liver failure (EASL-CLIF Consortium). Standard demographic and clinical data were also collected.

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RESULTS.

183 patients were included. The average age of the sample was 63 years with 69% being male. Both the standard scores and the ones developed by the EASL-CLIF Consortium showed a higher severity of disease in cirrhotic patients. 22 % of selected patients died within one year, including 6 at the emergency unit. The CLIF C OF showed that 125 patients did not present an ACLF (level 0) while 33 did (level ≥ 1). Even though the CLIF C ACLF recommended that 37% of patients were transferred to the Intensive Care Unit (ICU), only 8% had effectively been transferred. Among the 125 level 0-ACLF patients, the estimate of the CLIF C AD score concluded in the recommendation to transfer 20% of patients to the ICU; in reality, only 6% were transferred.

CONCLUSION

The new scores developed by the EASL-CLIF Consortium are better adapted than the former standard scores to assess the level of severity of patients with alcoholic liver disease at the emergency unit. There is a high probability for these patients' health to significantly deteriorate and they should benefit from ICU care as soon as they are admitted at the emergency unit. The necessity for these patients to be treated at the ICU seems to be under-valued within our hospital.

#18122 : Emergency calls of cardiac arrest patients with 'do-not-attempt-resuscitation' orders in Hiroshima, Japan.

Authors:

Koji Hosokawa (1), Satoshi Yamaga (1), Nobuaki Shime (1)

1. Department of Emergency and Critical Care Medicine, Graduate School of Biomedical and Health Sciences, Hiroshima University, Hiroshima, JAPAN

Keywords: emergency medical technician, do not attempt resuscitation, out-of hospital cardiac arrest

Abstract :

Background: Emergency call service and ambulance transport are available free of cost in Japan. Emergency calls for cardiac arrest include end-of-life stage patients who have ordered 'do-not-attempt resuscitation' (DNAR). For these cases, the action of pre-hospital emergency life-saving technicians (ELSTs) is controversial because of lack of sufficient written documents on advanced care planning.

Methods: We reviewed records in Hiroshima-city Fire Bureau for the two fiscal-years 2015 and 2016, and selected cardiac arrest patients whose relatives communicated DNAR orders despite making emergency calls. For this data, the actions of ELSTs were summarized.

Results: We included 38 cardiac arrest cases (2% of total cardiac arrest cases). A written DNAR order document was arrayed in one case, and in other cases the relatives required ELSTs to stop resuscitation. On site, ELSTs successfully contacted attending doctors in 33 cases (87%) and confirmed patients' status. DNAR orders became active on site in 24 cases (63%). In 14 cases (37%), medical doctors rushed to the site, and ELSTs left after the doctors arrived. In the remaining cases, an ambulance transported patients to the hospital with or without cardiopulmonary resuscitation in 10 and 14 cases respectively. In 5 cases (13%) where ELSTs were not able to contact medical doctors, patients were directly transported to emergency hospitals under cardiopulmonary resuscitation.

Conclusion: Despite absence of written documents, pre-hospital activation of DNAR order was realized owing to high rates of successful contact with attending medical doctors. However, the reason why the relatives of DNAR-ordered patients made emergency calls was not revealed.

Trial Registration / Funding Information (only) :

Nothing to declare.

#18126 : Soluble triggering receptor expressed on myeloid cells-1 as an inflammatory biomarker of myocardial ischemia/infarction in patients with acute coronary syndrome (ACS): A case-control study**Authors:**

shachaf shiber (1), Drescher Michael (2), Yair Molad (3)

1. rabin campus, beilinson hospital, tel aviv, ISRAEL
2. Head of Emergency department Rabin medical center, none, Petach tikva, ISRAEL
3. , none, Petch tikva , ISRAEL

Keywords: Coronary artery disease (CAD), Triggering receptor expressed on myeloid cells (TREM)-1, emergency department (ED).

Abstract :

Background: Coronary artery disease (CAD) is caused by vascular atherosclerosis together with persistent low-grade innate immune inflammation that plays a role in the initiation, progression, and destabilization of the atherosclerotic plaque. Triggering receptor expressed on myeloid cells (TREM)-1 is a novel member-bound receptor expressed on myeloid cells. Soluble TREM-1 (sTREM-1) reflects innate immune cell activation and its levels are significantly elevated in patients with well-established CAD as well as in acute coronary ischemic events.

Aim: We seek to determine the plasma levels of sTREM-1 in acute coronary syndrome (ACS) and the association with the severity and 30-day outcome in patients who present with chest pain (CP) to the emergency department (ED).

Methods: We conducted a prospective, case-control study of 121 consecutive patients who presented to the ED with new-onset CP (≤ 24 hours) suspected suffering of ACS, defined as CP with either ECG changes compatible with ST elevation MI (STEMI), non ST elevation MI (NSTEMI), unstable angina, or advanced angina pectoris. Patients with known inflammatory, infectious or neoplastic diseases were excluded. Patients were divided to 59 (48.7%) patients with ACS (59; 48.7%) and 62 (51.3%) patients with non-coronary CP (NCCP) groups according to the clinical, laboratory and ECG data. Final diagnosis and 30-days outcome were obtained. Seventy-three age- and sex-matched healthy individuals served as a control group. Blood samples were collected at the time of arrival to the ED and plasma samples were kept in -80° C until assayed for the level of sTREM-1 using a commercial ELISA kit.

Results: Within the group of patients with CP, plasma sTREM-1 level was significantly higher in the ACS group compared to NCCP (432 ± 23 vs. 292 ± 56 pg/ml, $p=0.03$). In a multivariate analysis using Linear regression model, we found that plasma sTREM-1 level correlates with ACS ($p=0.001$, 95% CI 92.2-360.2) and smoking ($p=0.06$, 95% CI 1.9-137.6) and with elevated creatinine ($p=0.03$, 95% CI 27.0-502.3). ROC analysis of plasma sTREM-1 level among ACS vs. NCCP was AUC 0.703, 95% C.I 0.610-0.796 $P<0.001$, and in the group of STEMI/NSTEMI ($n=30$) vs. control was AUC 0.842, 95% C.I 0.760-0.924 $P<0.001$.

Conclusions: Our data of elevated plasma sTREM1- level in ACS is in accordance to previous studies that suggest a role for innate immune activation, and more specifically TREM-1, in the evolution of ACS including MI. We suggest that plasma sTREM-1 might serve as a biomarker for the differentiation of ACS from NCCP in the ED.

Trial Registration / Funding Information (only) :

Shachaf Shiber 1, 2, 6, Vitaly Klemiski 4, 6, Katia Orvin 3, 6, Iftach Sagy 1, 5, Mordechai Vaturi 3, 6, Yair Molad 1, 4, 6 1Rheumatology Unit, Rabin Medical Center, Beilinson Campus, Petah Tikva, Israel 2Emergency Department, Rabin Medical Center, Beilinson Campus, Petah Tikva, Israel 3Cardiology Department, Rabin Medical Center, Beilinson Campus, Petah Tikva, Israel 4Laboratory of Inflammation Research, Felsenstein Medical Research, Petach Tikva, Israel 5Clinical Research Center, Soroka University Medical Center, Beer Sheva, Israel, 6Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel.

#18127 : Pregnancy outcome following bacteriuria in pregnancy and the significance of nitrites in urinalysis - A retrospective cohort study**Authors:**

shachaf shiber (1), Irit Ayalon-Dangur (2), Naamany Eviatar (3), Drescher Michael (4)

1. rabin campus, beilinson hospital, tel aviv, ISRAEL
2. , none, petach tikva, ISRAEL
3. sackler faculty of medicine, Tel aviv university, none, Tel Aviv , ISRAEL
4. Head of Emergency department Rabin medical center, none, Petach tikva, ISRAEL

Keywords: pregnancy, nitrite, complication, bacteria, urinary tract infection

Abstract :

Objective: An association between bacteriuria and adverse pregnancy outcomes has been extensively described. The current practice of screening all pregnant women for bacteriuria has been challenged by recent studies. We aimed to evaluate pregnancy outcomes among women with positive urine culture and to assess the significance of positive urinary nitrites in this setting.

Methods: Retrospective cohort study conducted between 2014-2018 at the emergency department(ED) of Helen Schnider women center, Israel. Included all Gravida women >18 years old within 20st week of pregnancy or above admitted to the ED with diverse complains, who had urinalysis collected and subsequently a positive urine culture. Clinical and obstetrics' characteristics were stratified by positive vs. negative nitrites in urinalysis. The primary outcome was premature delivery and the secondary outcomes were composite outcome of all recorded pregnancy complication and the significance of urinalysis in predicting UTI.

Results: Overall, 874 pregnant women with positive urine culture were included. Of them 721(79%) patients had negative nitrite in their urine exam(NNU-group) and 153(21%) patients had positive nitrite in their urine exam(PNU-group). E.coli was the most common pathogen, with significantly higher rate of growth in the PNU-group vs. NNU-group (129(84.3%)vs.227(38.4%), $p<0.001$). premature delivery was recorded with no association to symptomacy or nitrite status. Among symptomatic women with classic symptoms of UTI, PNU was significantly associated with decreased risk for major peripartum complications((OR with 95%CI of 0.22(0.05-0.94)).

Conclusions: Our findings support that PNU among symptomatic pregnant women with UTI-related symptom was associated with lower risk to develop major adverse obstetrical outcome.

Trial Registration / Funding Information (only) :

none

#18128 : Is there gender discrimination in acute renal colic pain management? DA retrospective analysis in an emergency department setting

Authors:

Naamany Eviatar (1), shachaf shiber (2), Rona Zuker-Herman (3), Drescher Michael (4)

1. sackler faculty of medicine, Tel aviv university, none, Tel Aviv , ISRAEL
2. rabin campus, beilinson hospital, tel aviv, ISRAEL
3. rabin campus, beilinson hospital, rabin campus, beilinson hospital, tel aviv, ISRAEL
4. Head of Emergency department Rabin medical center, none, Petach tikva, ISRAEL

Keywords: renal colic, gender, pain scale, opioids

Abstract :

Background: Pain is a widespread problem, affecting both men and women; studies have shown that women in the emergency department (ED) receive analgesic medication and opioids less frequently in comparison with men.

Objective: The purpose of this study was to examine the administration and management of analgesics by the medical/paramedical staff in relation to the patients' gender , and thereby to examine the extent of gender discrimination in treating pain by gender

Design: This is a single center retrospective cohort study which included 824 patients. As an acute pain model, we used renal colic, with a nephrolithiasis diagnosis confirmed by imaging. We recorded pain level by visual analog scale (VAS) and number of VAS examinations. Time intervals were calculated between admissions to different stations in the ED. We recorded the number of analgesic drugs given, type of drugs prescribed and drug class (opioids or others).

Results: A total of 824 patients (414 women and 410 men) participated. There were no significant differences in age, ethnicity and laboratory findings. VAS assessments were higher in men than in women (6.43vs.5.90, $p=0.001$, respectively). More men than women received analgesics (68.8%vs.62.1%, $p=0.04$, respectively) and opioids were prescribed more often in men than in women (48.3%vs.35.7%, $p=0.001$). The number of drugs prescribed per patient was also higher in men compared to women (1.06vs.0.93, $p=0.03$). A significant difference was found in waiting time length from admission to medical examination between non-Jewish women and Jewish women.

Conclusion: We have observed differences in pain management between genders which could be easily interpreted as gender discrimination. Yet, these differences might also be attributed to other factors which are not based on gender discrimination but rather on gender differences.

Clinical implication: The medical and paramedical staff should be made aware that women might experience and express pain differently from men and diagnostic methods and treatment may need to be adapted accordingly.

Trial Registration / Funding Information (only) :

none

#18130 : Risk of emesis increases with age in children received intramuscular ketamine sedation**Authors:**

po yao hsieh (1)

1. CMUH, emergency department, taichung, TAIWAN

Keywords: ketamine injection, emesis

Abstract :**Object:**

Intramuscular ketamine was the most common used medication for procedural sedation in pediatric patients. Emesis could be the most common complication after ketamine injection. The purpose of this study was to determine the incidence and predictive factors of vomiting in children undergoing intramuscular ketamine sedation in the emergency department.

Methods

We retrospectively collected all pediatric patients who received ketamine injection for procedural sedation between January 1, 2016 and October 31, 2017. Patients were excluded if they received intravenous ketamine or in combination with other anesthetics. All patients received standard post-sedation care, monitoring their vital signs until they were fully awake. The dosage of ketamine and all sedative agents were recorded. We also recorded the age, body height, body weight and body mass index (BMI). Univariate and multivariate logistic regression analyses were performed to identify the predictors of emesis.

Results

During the study period, 443 pediatric patients underwent intramuscular injection of ketamine for procedural sedation. 4 patients were excluded as they received intravenous ketamine, 34 patients were excluded due to combined use of other anesthetics, 71 patients were excluded due to lack of height data. 11 of the 334 enrolled patients developed vomiting after ketamine. Height, weight and BMI did not affect the risk of emesis. The risk of post-ketamine emesis increased with age, and age remained statistically significant after multivariate regression analysis. (odd ratio 1.028, p value 0.0227, table 1)

Conclusion:

The risk of emesis among pediatric patients underwent procedural sedation with intramuscular ketamine increased with age.

#18132 : Theatre of the oppressed: empowering emergency staff**Authors:**

Christina Lalani Handalage (1), Hajela Sapna (1), Javadian Parisa (1), Edmundson Heidi (1)

1. Emergency Department, Whittington Hospital, London, UK

Keywords: wellbeing, communication, conflict

Abstract :**Background and Objectives**

Originally pioneered by Augusto Boal, Forum Theatre (a technique of Theatre of the Oppressed) uses interactive drama to explore challenging encounters in a shared group environment. It promotes wider reflection and allows individuals to explore and rehearse solutions in a 'safe environment', empowering participants to address oppressive situations in real life.

Burnout and job dissatisfaction are well documented amongst staff members working in the Emergency Department (ED). Contributing factors include challenging interpersonal interactions and a lack of administrative and clinical autonomy. Measures of staff wellbeing correlate positively with patient satisfaction and are associated with reduced adverse clinical outcomes. We explored the application of Forum Theatre methods in empowering ED staff to better handle challenging encounters in the workplace.

Methods

A mixed disciplinary group from an ED in London attended a four-day course to learn the methods of forum theatre. Participants used their own experiences to write and perform two scenarios depicting workplace oppression to an audience of hospital staff. Themes, outcomes and the potential for change around the scenario were discussed by the audience and audience members assumed the role of the protagonist in the scenario to put audience suggestions into practice.

Results

Participants (n= 10, all female, average age 31) all stated that they sometimes felt they had no power or choice at work. All felt that it was important to do fun activities at work and that their wellness was important to the functioning of the department.

Attendees to the performance (doctors, nursing staff, senior management) found it uniformly enjoyable and useful. Most found that it encouraged them to think about how to handle difficult situations at work (94%).

Conclusions

Forum theatre can empower ED staff to feel more prepared and confident in addressing conflict in the workplace.

#18134 : Compassion Fatigue Among Nurses in Emergency Services

Authors:

Annikki Bring Beckman (1), Linda Fantenberg (2)

1. , Karolinska Hospital, Stockholm, SWEDEN

2. , Danderyd Hospital, Stockholm, SWEDEN

Keywords: compassion fatigue, empathy, stress, emergency care, nurse

Abstract :**Introduction**

Working in emergency services today means a heavy workload and a stressful environment. Being a nurse in this field of operation requires competence, energy and empathy. Facing critically ill patients and their relatives, demands an emotional engagement as a nurse. The capacity of the individual to maintain this engagement is due to multiple factors. Lack of energy could lead to the concept of compassion fatigue, which is a stress experienced by caregivers and effect of caring for traumatized patients (Mealer and Jones, 2013; Sabo, 2011).

The aim of this study was to describe the factors and circumstances that may cause compassion fatigue among nurses in emergency services.

Methods

The method of choice was a literature review including 17 articles related to the aim. The articles were retrieved from the databases PubMed, CINAHL and PsycINFO. To present the content of the articles, an article matrix was made and data was classified according to different visible patterns and themes and analyzed using content analysis (Forsberg and Wengström, 2013). Based on the themes that emerged from the content analysis of the articles the results were presented, both in tabular form and in current text.

Results

The findings show that multiple factors and circumstances contribute to the development of compassion fatigue in emergency service nurses. Four main categories were revealed; psycosocial factors including ethical dilemmas and mentally demanding duties, traumatization when having to cope with suffering and death, workplace related factors caused by heavy workload, lack of managerial support and lack of team spirit and demographic factors such as young age and lack of work experience.

Conclusion/Discussion

The conclusion is that the loss of energy and empathy that emergency service nurses can experience in their work environment is due to multiple factors and circumstances. The problem needs to be acknowledged, both by the employees and employers, in order to enable the support needed.

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#18145 : Characteristics and outcome of ACS type 2.

Authors:

Maha Bchir (1), Amira Sghaier (1), Youssef Hassen (2), Fatma Ben Salem (2), Imene Hlila (2), Fadoua Laajili (2), Nawres Jomaa (2), Ikhlas Ben Aicha (2), Nahla Jerbi (1), Wiem Kerkeni (1), Soudani Marghli (1)

1. service des Urgences SMUR, CHU Tahar Sfar, Mahdia, TUNISIA
2. service des urgences, CHU Tahar Sfar, Mahdia, TUNISIA

Keywords: acute coronary syndrome type 1, acute coronary syndrome type 2, outcome

Abstract :

Introduction: In clinical practice it is sometimes difficult to distinguish between ACS type 1 and ACS type 2. The therapeutic management of ACS type 2 is frequently subject to discussion. The objectives of this study were to compare the characteristics, treatment and outcome within a month of patients with ACS type 1 and type 2 in emergency department.

Methods: It is a prospective, observational study that includes patients consulting the emergency department and having a rise and/or fall of cTn values with at least one value above the 99th percentile URL. These patients were classified ACS type 1 and ACS type 2. Patients whose diagnosis retained ACS

type 3, 4 and 5 were excluded from the study. Demographic, clinical and therapeutic management characteristics were compared between patients with ACS type 1 and ACS type 2. The criteria for assessing severity were hospitalization, the incidence of major cardiovascular events (cardiovascular death, angioplasty, stroke) and overall mortality in a month.

Results: We included 92 patients [56 (60%) with ACS type 1 and 36 (40%) with ACS type2] from March 1st to August 31st 2018. ACS type 2 was more frequently associated with other diseases (94% vs 9%, $p < 0.001$) with less use of antiplatelet agents(43% vs 98%, $p < 0.001$) and anticoagulants (42% vs 95%, $p < 0.001$). hospitalization in the cardiology department was higher in the ACS type 1 group vs. the ACS type 2 group with 87% and 57% respectively ($p < 0.001$). The rate of major cardiovascular events within a month was 11% and 16% respectively in the ACS type 1 and type 2 groups ($p = 0.61$), with only one death occurring in a month in the ACS type 2 group.

Conclusion: ACS type 2 had a high prevalence. It was associated with other diseases and there was less use of antiplatelets and anticoagulants. The outcome in a month was comparable to that of the ACS type 1.

#18151 : Comparison of routine care versus Transcutaneous Electrical Nerve Stimulation (TENS) for treatment of back pain in the ED

Authors:

Yanina Purim-Shem-Tov (1), Jean-Philippe Daniel (2), Nicholas Chien (3), Kevin Dyer (2), Thomas Seagraves (4), Shital shah (5)

1. Emergency Medicine, Rush University Medical Center, Chicago, USA
2. Medical Student, Rush University Medical Center, Chicago, USA
3. MD, Resident, Emergency Medicine, Rush University Medical Center, Chicago, USA
4. Resident, Emergency Medicine, Rush University Medical Center, Chicago, USA
5. PhD, Rush University Medical Center, Chicago, USA

Keywords: back pain, TENS, ED

Abstract :

Background:

Standard care for back pain in the ED includes NSAIDs, opioids, and/or muscle relaxants, which may have harmful effects on patients and have the potential to develop dependency and addiction. Transcutaneous electrical nerve stimulation (TENS) is a promising therapy that uses skin surface electrodes to provide analgesia. The purpose of this project is to evaluate the role of an over-the-counter TENS unit in managing low back pain in the ED, and to compare the average patient length of stay in the ED compared to conventional treatment.

Methods:

Study to place in a large academic urban hospital emergency department. Study received institutional IRB approval. To date a convenience sample of 45 patients presenting with a chief complaint of low back pain has been enrolled in the active arm. Only adult English-speaking patients were included, who presented with radicular or musculoskeletal lower back pain. Pain scores on a 0-10 scale were obtained before and after treatment with the TENS unit for 30 minutes. The control group included 70 historical cases with reported pain scales before and after conventional treatment. T-test analysis was used to evaluate for any statistical difference in pain reduction between the two groups.

Results:

Pain score before treatment and post treatment in the active arms 8.16 ± 1.59 and 5.52 ± 2.49 respectively; pain scores before and after treatment for control arm 8.53 ± 1.52 and 8.53 ± 1.52 , no statistical significance found. Length of stay in minutes for the patients in the treatment arm is not significantly different than control arm (206.13 ± 111.44 ; 208.41 ± 117.72 , $p= 0.918$). No statistical significance found when active and control arms were matched for race, sex, age or co-morbidities. The average pain reduction score for the TENS group was 2.63 (the percentage reduction was 0.35). The average pain reduction score for the historical group was 2.64 (the percentage reduction was 0.31).

Discussion:

According to preliminary data, there is no statistical difference between the TENS and historical groups for pain score reduction and length of stay. These results would suggest that TENS is a viable treatment option for lower back pain in the ED compared to conventional therapy. To achieve full power, we need to enroll 70 patients and do a propensity case match evaluation

Conclusion:

Given that TENS units are available over-the-counter, patient education can potentially contribute to reducing ED visits for lower back pain.

#18153 : Utility of a pre-hospital National Early Warning Score 2 as a prognostic tool in time-dependent diseases: a multi-center observational prospective cohort study**Authors:**

Francisco Martín-Rodríguez (1), Raúl López-Izquierdo (2), Carlos Del Pozo Vegas (3), Jesús C. Minguez Bravo (4), María D. Jimenez Martínez (5), María J. Santos Larregola (1), Cristina Bolon Rodríguez (1), José M. Acebes Rey (1), Gemma de Grado Rodríguez (6), Virginia Carbajosa Rodríguez (2), Germán Fernández Bayón (3), Juan F. Delgado Benito (5), Violante Méndez Martín (7), Maria Antonia Udaondo Cascante (8), Mario Hernández Gajate (2), Rodrigues Leonardo (9), Miguel A. Castro Villamor (10)

1. Advanced Life Support Unit Valladolid, Prehospital Emergency Medical Service SACYL, Valladolid, SPAIN
2. Emergency Department, Hospital Universitario Río Hortega, Valladolid, SPAIN
3. Emergency Department, Hospital Clínico Universitario, Valladolid, SPAIN
4. Advanced Life Support Unit Segovia, Prehospital Emergency Medical Service SACYL, Segovia, SPAIN
5. Advanced Life Support Salamanca, Prehospital Emergency Medical Service SACYL, Salamanca, SPAIN
6. Advanced Life Support Burgos, Prehospital Emergency Medical Service SACYL, Burgos, SPAIN
7. Emergency Department, Complejo Hospitalario de Salamanca, Salamanca, SPAIN
8. Radiology, Hospital Universitario de Burgos, Burgos, SPAIN
9. Emergency Department, Hospital Sanatorio de Luanda, Luanda, ANGOLA
10. Facultad de Medicina, Universidad de Valladolid, Valladolid, SPAIN

Keywords: Emergency medical services, clinical decision-making, evidence-based medicine, risk stratification, early mortality, Early Warning score

Abstract :

Introduction: The time-dependent diseases represent one of the most frequent causes of attention by the Prehospital Emergency Medical Services (PhEMS), one of the most frequent reasons for hospital admission and one of the main potential causes of early mortality. The main objective was to evaluate the ability of the prehospital National Early Warning Score 2 (pNEWS2) to predict early mortality (before 48 hours) from the index event.

Material and methods: Multicentric prospective observational longitudinal study of cohorts, between April 1, 2018 and March 30, 2019. The study was developed on a reference population of 1,113,073 inhabitants, distributed in four provinces of Spain (Burgos, Salamanca, Segovia and Valladolid), in a geographical area of 41,403 km². It was considered that a patient fulfilled criteria to be included in the study if he had been attended by Advanced Life Support and transferred to the Emergency Department, and did not meet any exclusion criteria: under 18 years old, cardiorespiratory arrest, exitus, pregnant women, patients with psychiatric pathology or terminal pathology or discharged in situ. Demographic data (age and gender), vital parameters (respiratory rate, oxygen saturation, heart rate, systolic blood pressure and body temperature), clinical observations (consciousness level and use of supplemental oxygen) were collected during the first contact with the patient in prehospital care.

The temperature was measured using the ThermoScan® PRO 6000 tympanic thermometer (Welch Allyn, Inc., Skaneateles Falls, USA), and the rest of the vital parameters with the LifePAK® 15 monitor (Physio-Control, Inc., Redmond, USA).

Diagnosis and mortality data were obtained by reviewing the patient's electronic history at 3 days from the index event.

The main dependent variable was mortality from any cause in the hospital before the first 48 hours from the index event.

The area under the curve (AUC) of the receiver operating characteristic (ROC) of the pNEWS2 scale was calculated in terms of 2-day mortality as well as the best score that offered greater sensitivity and joint specificity.

Results: a total of 1466 patients were included in our study. The median age was 69 years (IQR: 54-81 years), 40.9% of them were women. The 2-day mortality was 5.6% (82 cases).

The AUCROC of pNEWS2 was 0.873 (0.82-0.92, $p < 0.001$). The value with the best sensitivity and specificity overall was 9 points, sensitivity of 74.4% (64.0-82.6), specificity of 84.5% (82.5-86.3), positive predictive value 22.2 (17.7-27.5), negative predictive value 98.2 (97.3-98.8), Likelihood ratio (+) 4.81 (4.03-5.74), Likelihood ratio (-) 0.30 (0.21-0.44), odds ratio 15.88 (9.47-26.63) and diagnostic accuracy of 84.0% (82.0-85.8).

Conclusions: Being aware of the patient's physio-pathological situation is basic to managing the situation, where early diagnosis is essential.

The PhEMS should evaluate the implementation of pNEWS2 as a routine evaluation among its procedures, since it effectively serves to predict mortality from any cause and the detection of high risk patients at an early stage.

Trial Registration / Funding Information (only) :

The study was approved by the Research Ethics Committee of all participating centers (reference CEIC: #PI 18-010, #PI 18-895, #PI 2018-10/119, #PI MBCA/dgc and #CEIC 2049). All patients (or guardians) signed informed consent, including consent for data sharing. This research has received support from the Gerencia Regional de Salud (SACYL) for research projects in Biomedicine, Healthcare Management and Healthcare Care, with registration number GRS 1678/A/18, principal investigator: Francisco Martín-Rodríguez, as part of the "Use of early warning scales in the prehospital scope as a diagnostic and prognostic tool", and Scholarship for the intensification of the research activity for the year 2019, with registration number INT/E/02/19 from the Gerencia Regional de Salud (SACYL).

#18154 : Pre-hospital blood lactate vs hospital biomarkers. A bedside clinical tool for the detection of early mortality in emergency department.**Authors:**

Francisco Martín-Rodríguez (1), Raúl López-Izquierdo (2), Carlos Del Pozo Vegas (3), Pablo Del Brio Ibañez (2), Iratxe Moro Mangas (3), Juan F. Delgado Benito (4), Rosa M. Herrero Antón (5), Tony Giancarlo Vásquez del Águila (3), Rocio Varas Manovel (6), Margarita Regidor Muñoz (4), María G. Serrano Arguello (1), Laura M. Bausela Municio (1), María C. Ramos Ortega (1), Rodrigues Leonardo (7), Agustina Lara Huerta (8), Maria Antonia Udaondo Cascante (9), Germán Fernández Bayón (3), Miguel A. Castro Villamor (10)

1. Advanced Life Support Unit Valladolid, Prehospital Emergency Medical Service SACYL, Valladolid, SPAIN
2. Emergency Department, Hospital Universitario Rio Hortega, Valladolid, SPAIN
3. Emergency Department, Hospital Clínico Universitario, Valladolid, SPAIN
4. Advanced Life Support Salamanca, Prehospital Emergency Medical Service SACYL, Salamanca, SPAIN
5. Emergency Department, Complejo Hospitalario de Salamanca, Salamanca, SPAIN
6. Advanced Life Support Unit Segovia, Prehospital Emergency Medical Service SACYL, Segovia, SPAIN
7. Emergency Department, Hospital Sanatorio de Luanda, Luanda, ANGOLA
8. Advanced Life Support Burgos, Prehospital Emergency Medical Service SACYL, Burgos, SPAIN
9. Radiology, Hospital Universitario de Burgos, Burgos, SPAIN
10. Facultad de Medicina, Universidad de Valladolid, Valladolid, SPAIN

Keywords: Biomarkers, lactate, point of care testing, clinical decision-making, mortality

Abstract :

Introduction: Point-of-care testing (POCT) represents an efficient, fast and cheap way to obtain reliable clinical data from patients in the shortest time possible, highlighting lactate acid as a prognostic biomarker. Any tool that helps professionals to decide the best treatment or destination center of patients should be tested and evaluated, and if it is useful, should be used routinely.

The main objective was to evaluate the capacity of the prehospital lactic acid (PLA) vs hospital biomarkers to predict early mortality at seven days from the index event.

Material and methods: Longitudinal prospective observational multicentric study, between April 1, 2018 and February 28, 2019. The study was developed on a reference population of 1,113,073 inhabitants, distributed in four provinces of Spain (Burgos, Salamanca, Segovia and Valladolid), in a geographical area of 41,403 km². It was considered that a patient fulfilled criteria to be included in the study if he had been attended by Advanced Life Support Units and transferred to the Emergency Department (ED), and did not meet any exclusion criteria: under 18 years old, cardiorespiratory arrest, death, pregnant women, patients with psychiatric pathology or terminal pathology.

Demographic data (age and gender) and PLA were collected during the first contact with the patient in prehospital care. To obtain the PLA values, the Accutrend Plus measuring device (Roche Diagnostics, Mannheim, Germany) was used. The remaining biomarkers (creatinine, bilirubin, hospital lactate acid -HLA-, C-reactive protein and troponin) were collected in the ED at the hospital level with the cobas b 123 POC system (Roche Diagnostics, Mannheim, Germany).

The diagnosis, days of admission and mortality data were obtained by reviewing the patient's electronic history after 10 days.

The main dependent variable was mortality from any cause in the hospital before the first seven days from the index event.

The area under the curve (AUC) of the receiver operating characteristic (ROC) for each biomarker was calculated in terms of the 7-day mortality as well as the best score that offered greater sensitivity and joint specificity.

Results: a total of 1340 patients were included in our study. The median age was 70 years (IQR: 56-82 years), 40.5% of them were women. The 7-day mortality was 8.5% (114 cases).

The best AUROC was the PLA with 0.794 (0.74-0.84, $p < 0.001$), followed by the HLA with 0.785 (0.72-0.84, $p < 0.001$). When comparing the AUC of PLA and HLA, no significant differences were observed in any of the analyzes performed ($p = 0.589$), something that does occur when comparing both determinations with the AUC of the rest of the biomarkers.

The value with the best sensitivity and specificity overall for the PLA was 3.9 mmol/L, sensitivity of 78.9% (70.6-85.4), specificity of 72.9% (70.4-75.3) and odds ratio of 10.10 (6.33-16.12), and for the HLA was 3.2 mmol/L, sensitivity of 74.7% (64.1-83.0), specificity of 73.8% (69.8-77.5) and odds ratio of 8.33 (4.83-14.37).

Conclusions: In view of the data, Emergency Medical Services should assess the implementation of PLA procedures as a routine evaluation, which effectively serves to predict early mortality.

Trial Registration / Funding Information (only) :

The study was approved by the Research Ethics Committee of all participating centers (reference CEIC: #PI 18-010, #PI 18-895, #PI 2018-10/119,

#PI MBCA/dgc and #CEIC 2049). All patients (or guardians) signed informed consent, including consent for data sharing. This research has received support from the Gerencia Regional de Salud (SACYL) for research projects in Biomedicine, Healthcare Management and Healthcare Care, with registration number GRS 1678/A/18, principal investigator: Francisco Martín-Rodríguez, as part of the "Use of early warning scales in the prehospital scope as a diagnostic and prognostic tool", and Scholarship for the intensification of the research activity for the year 2019, with registration number INT/E/02/19 from the Gerencia Regional de Salud (SACYL).

#18155 : Pre-hospital lactate and hospital troponin: short-term prognostic implications in the patient with a heart attack code, a observational prospective study**Authors:**

Francisco Martín-Rodríguez (1), Raúl López-Izquierdo (2), Carlos Del Pozo Vegas (3), Julio C. Santos Pastor (4), Ana B. López Tarazaga (3), Juan F. Delgado Benito (5), María T. Herrero de Frutos (6), Mónica Escribano Barbero (5), Ana Valderrey Mielgo (3), María Gervás de la Pisa (1), Francisco T. Martínez Fernández (1), Arancha Morate Benito (1), María P. Delgado Benito (7), Isabel Manjón Herrera (8), María Antonia Udaondo Cascante (9), Germán Fernández Bayón (3), Rodrigues Leonardo (10), Miguel A. Castro Villamor (11)

1. Advanced Life Support Unit Valladolid, Prehospital Emergency Medical Service SACYL, Valladolid, SPAIN
2. Emergency Department, Hospital Universitario Río Hortega, Valladolid, SPAIN
3. Emergency Department, Hospital Clínico Universitario, Valladolid, SPAIN
4. Emergency Department, Complejo Hospitalario de Segovia, Segovia, SPAIN
5. Advanced Life Support Salamanca, Prehospital Emergency Medical Service SACYL, Salamanca, SPAIN
6. Advanced Life Support Unit Segovia, Prehospital Emergency Medical Service SACYL, Segovia, SPAIN
7. Emergency Department, Complejo Hospitalario de Salamanca, Salamanca, SPAIN
8. Advanced Life Support Burgos, Prehospital Emergency Medical Service SACYL, Burgos, SPAIN
9. Radiology, Hospital Universitario de Burgos, Burgos, SPAIN
10. Emergency Department, Hospital Sanatorio de Luanda, Luanda, ANGOLA
11. Facultad de Medicina, Universidad de Valladolid, Valladolid, SPAIN

Keywords: Lactate, troponine, point of care testing, clinical decision-making, mortality

Abstract :

Introduction: chest pain (ischemic heart disease) represents one of the leading causes of mortality, one of the most frequent causes of hospital admission, and one of the most common causes of consultation and care of Prehospital Emergency Medical Services (PhEMS).

The main objective was to evaluate the capacity of prehospital lactic acid (PLA) vs hospital troponin (HT), to predict early mortality at two days from the index event in patients with chest pain (ischemic heart disease).

Material and methods: Longitudinal prospective observational study, between April 1 and December 31, 2018. The study was developed on a reference population of 1,021,086 inhabitants, distributed in three provinces of Spain (Burgos, Salamanca and Valladolid) . All the hospitals included in the study have Intensive Care Unit (ICU) and hemodynamic service. It was considered that a patient fulfilled criteria to be included in the study if he had been attended by Advanced Life Support Units and transferred to the emergency services with a main diagnosis of chest pain (ischemic heart disease), and did not meet any exclusion criteria: under 18 years old, cardiorespiratory arrest, exitus and pregnant women.

Demographic data (age and gender) and PLA were collected during the first contact with the patient in prehospital care. To obtain the PLA values, the Accutrend Plus measuring device (Roche Diagnostics, Mannheim, Germany) was used. HT was collected in the Emergency Department at the hospital level with the cobas b 123 POC system (Roche Diagnostics, Mannheim, Germany).

The days of admission, need for ICU and / or hemodynamics and mortality data were obtained by reviewing the patient's electronic history at 30 days.

The main dependent variable was mortality from any cause in the hospital before the first two days from the index event.

The area under the curve (AUC) of the receiver operating characteristic (ROC) was calculated for each biomarker in terms of 2-day mortality, as well as the best score that offered greater sensitivity and joint specificity.

Results: a total of 258 patients were included in our study. The median age was 68 years (IQR: 58-81 years), 30.2% of them were women. The 2-day mortality was 7.4% (19 cases). 49.2% (127 cases) of patients required ICU.

The PLA obtained an AUROC for the two-day mortality of 0.918 (0.83-1, $p < 0.001$), and the HT of 0.727 (0.59-0.85, $p = 0.001$). When comparing both curves, significant differences were observed ($p = 0.001$).

The value with the best sensitivity and specificity overall for the PLA was 4.1 mmol/L, sensitivity of 94.7% (75.4-99.1), specificity of 79.9% (74.4-84.5), positive predictive value 27.3 (18.0-39.0), negative predictive value 99.5 (97.1-99.9), Likelihood ratio (+) 4.72 (3.59-6.21), Likelihood ratio (-) 0.07 (0.01-0.45) and odds ratio 71.63 (9.33-549-97).

Conclusions: The use of PLA presents a very high AUROC in patients with chest pain (ischemic heart disease). The PLA can help PhEMS in the selection of the most appropriate hospital center, with acute cardiac care unit and hemodynamic unit, in order to reduce morbidity and mortality due to this prevalent pathology.

Trial Registration / Funding Information (only) :

The study was approved by the Research Ethics Committee of all participating centers (reference CEIC: #PI 18-895, #PI 2018-10/119 and #CEIC

2049). All patients (or guardians) signed informed consent, including consent for data sharing. This research has received support from the Gerencia Regional de Salud (SACYL) for research projects in Biomedicine, Healthcare Management and Healthcare Care, with registration number GRS 1678/A/18, principal investigator: Francisco Martín-Rodríguez, as part of the "Use of early warning scales in the prehospital scope as a diagnostic and prognostic tool", and Scholarship for the intensification of the research activity for the year 2019, with registration number INT/E/02/19 from the Gerencia Regional de Salud (SACYL).

#18157 : Medical assistance coordination of terrorist attack**Authors:**

François-Xavier Duchateau (1), Anne Lepetit (2), Eic Vanhalewyn (3), Massemba Diop (4)

1. Medical Operations, Allianz Partners, Paris, FRANCE
2. Medical Operations, Allianz Partners, paris, FRANCE
3. Medical Global Competency Centre Europe Brussels, Allianz Partners, Brussels, BELGIUM
4. SOS Médecins, SOS médecins, Dakar, SENEGAL

Keywords: disaster medicine, aeromedical evacuation, coordinations

Abstract :

Introduction: In case of mass casualty incident (MCI) abroad, medical assistance companies are entrusted to provide a rapid and appropriate response. In addition to a standardized and regularly updated operating process, exercises are key component to ensure performance. The purpose of the present report was to evaluate the effectiveness of our primary casualty plan on our different platforms around the world.

Methods and Setting: Our medical assistance company is present in 28 countries but only 5 large regional platforms are accredited to deal with MCIs. A primary casualty plan, common to all entities, governs all aspects of MCI management (activation, coordination, forwarded team on the spot, relation with Foreign Affairs, communication with media...) under the responsibility of the Group Medical Direction. The present simulation was a tabletop exercise (no field deployment). The scenario was a terrorist attack (fire arms, no bomb) in a touristic place in Senegal with 10 killed and 20 severely injured people from 6 different countries. Coordination of the exercise was performed by the Group Medical Direction with the help of an external team of facilitators located in the country of occurrence, following a detailed chronogram and giving inputs/responding to the different platforms involved. There were also observers on each platform. The exercise was kept secret toward platforms. The main evaluative criterion was the concordance between the response each platform provided and the primary casualty plan (considered as the standard).

Results: Alert was sent to 6 platforms with victims involved at 8:00 GMT on Sept 19, 2018. After 60 min, 1 regional platform had implemented a specific desk with dedicated staff, activated the local medical correspondent, contacted the other platforms within its region and the other regional platforms, and been in touch with Foreign Affairs Ministry. This platform was designated as leading platform for the entire group. After 90 min, this leading platform had collected a brief description of injuries for all victims and initiated local evacuations for those who required urgent/invasive procedures. One of the doctors of the team was ready to fly over there for local coordination of repatriation, agents having flight options ready. Secrecy was disclosed at this point and exercise ended.

Discussion: This simulation clearly identified platforms in which our primary casualty plan is mature and those that need further attention or training. Since most managers and head of platforms were not present at the time of the exercise, it was also interesting to challenge on how not to rely on them. Also the email server of the company was down that morning, which invited to further think on communication tools. Formal debriefing was conducted with heads of platform and chief medical officers 10 days after the exercise and improvement measures were discussed and decided. The program of simulation will be continued.

#18161 : Prevalence and severity of traumatic intracranial hemorrhage in older patients with low-energy falls – a retrospective study**Authors:**

Alina Lampart (1), Tobias Kuster (1), Isabelle Arnold (1), Nina Maeder (1), Sandra Niedermeier (2), Christian Nickel (1), Roland Bingisser (1), Vera Pedersen (1)

1. Emergency Department, University Hospital Basel, Basel, SWITZERLAND
2. University Munich, Ludwig-Maximilians-University Munich, Munich, GERMANY

Keywords: traumatic intracranial hemorrhage, low-energy fall, older patient, anticoagulation

Abstract :**Background**

Low-energy falls (LEF) in the older patient are a common reason for presentation to an emergency department (ED). Head injuries, including traumatic intracranial hemorrhage (tICH) are among the common fall related injuries in this population. Current clinical decision rules consider anticoagulation (AC) or antiplatelet (AP) therapy as potential risk factor for a tICH. The objective of the study was to analyze the prevalence and severity of tICH and the association to AC/AP therapy in a large cohort of older patients with LEF presenting without trauma-team activation.

Methods

We performed a bicentric retrospective study on patients of 65 years and older presenting to the ED with a LEF between 01 January 2016 and 31 December 2016. Patients presenting to one of the two tertiary care centers (Emergency Departments of the University Hospital Basel and the University Hospital Munich) who obtained cranial computed tomography (cCT) examinations were included. Primary data were retrieved from radiology databases, detailed chart review abstractions were conducted by two independent observers to obtain information about medication, clinical signs of head injury and final diagnosis in both study centers. The prevalence and severity of tICH of patients with and without AC/AP therapy were compared. Multivariate regression models were used to measure the association between AC/AP therapy and the risk for tICH after adjustment for known predictors.

Results

Overall 2567 patients met inclusion criteria, of these 1424 (55%) had an AC/AP therapy. Prevalence for a tICH detected by cCT was 176/2567 (6.9%). Multivariate regression models showed no differences for the risk of a tICH (OR: 1.05, 95% CI: 0.76–1.47, $p = 0.76$) or association with head specific injury severity (IRR: 1.08, 95% CI: 0.97–1.19, $p = 0.15$) in patients with or without AC/AP therapy. CT-detected skull fracture and injury signs above clavicle were the strongest predictors for tICH (OR: 4.28, 95% CI: 2.79– 6.51 respectively OR: 1.88, 95% CI: 1.3–2.73).

Discussion and Conclusion

In this retrospective bicentric cohort analysis we found an overall prevalence of 6.9% for tICH in older patients with LEF and ED presentation without trauma-team activation. Therapy with AP/AC agents resulted in a prevalence of 7.2%, compared to 6.8% in patients without AP/AC therapy. Multivariate analysis revealed that neither AC, nor AP therapy or the combined treatment with AC and AP were risk factors for tICH in older patients with LEF. Injury signs above the clavicle were the strongest clinical predictor for a tICH and should therefore be considered to trigger imaging of the head in older patients with LEF, independently of AC or AP medication history.

The study was planned using STROBE guidelines, in accordance with the declaration of Helsinki, approved by local ethic committees (EKNZ 2017-01078, EK LMU 17-217).

#18166 : Multicentre observational cohorts study to evaluation of mortality reduction with the early use of the non-invasive ventilation prehospitalary in severe respiratory insufficiency.

Authors:

CRISTINA HORRILLO GARCIA (1), CRISTINA HORRILLO GARCIA (2), ANA MARÍA CINTORA SANZ (2), ALICIA GUTIERREZ MISIS (3), ANA BELEN RUBIO RIBALLO (4), LETICIA PAREJO GARCIA (4), OSCAR RODRIGUEZ RODRIGUEZ (4), OSCAR CARRILLO FERNANDEZ (4), YOLANDA ARANDA GARCIA (5), ANA MARIA PEREZ ALONSO (4), ISABEL CANALES CORCHO (2), EVA GARCIA BENAVENT (4), DAVID MAZUECOS MUÑOZ (4), LAURA PASTOR CABANILLAS (4), ANA TORRES POZA (4), MARIA MIR MONTERO (6), ANGEL TOMAS IBAÑEZ CONCEJO (7), CARLOS RUBIO CHACON (4), GEMA BORGE TOLEDANO (4), JOSE MIGUEL LAFUENTE DURA (4), YANET DUEÑAS PAREJA (4), MARIA DEL CAMINO FERNANDEZ DEL BLANCO (8), MARINA GOMEZ-MORAN QUINTANA (4), MANUEL GONZALEZ VIÑOLIS (9), JOAQUIN ANTONIO RENDO MURILLO (4), SOLEDAD GÓMEZ DE LA OLIVA (4), CRISTINA BARREIRO MARTINEZ (4), CRISTINA FERNANDEZ EGIDO (4), GLORIA MARIA GARCIA HERRERO (4), RAQUEL BARROS GONZALEZ (10), ALEJANDRO DEL CAÑO GARRIDO (11), NATASHA LECO GIL (12), MIRIAM UZURIAGA (4), ELENA PASTOR BENITO (4)

1. Servicio de Urgencias Médicas de la Comunidad de Madrid. SUMMA112, Servicio de Urgencias Médicas de la Comunidad de Madrid. SUMMA112, Madrid, SPAIN
2. Servicio de Urgencias Médicas de la Comunidad de Madrid., SUMMA112, Madrid, SPAIN
3. Profesora ayudante a doctor. Departamento de Medicina: Facultad de Medicina, Universidad Autónoma de Madrid, madrid, SPAIN
4. Servicio de Urgencias Médicas de la Comunidad de Madrid., SUMMA112, madrid, SPAIN
5. ADJUNTA DEL SERVICIO DE URGENCIAS DEL HOSPITAL RAMÓN Y CAJAL, MADRID, madrid, SPAIN
6. SERVICIO DE URGENCIAS DEL HOSPITAL INFANTA LEONOR DE VALLECAS, MADRID, madrid, SPAIN
7. SERVICIO DE URGENCIAS DEL HOSPITAL FUNDACION JIMENEZ DIAZ, MADRID, madrid, SPAIN
8. SERVICIO DE URGENCIAS DEL HOSPITAL FUNDACION ALCORCON, MADRID, madrid, SPAIN
9. SERVICIO DE URGENCIAS DEL HOSPITAL LA PAZ, MADRID, madrid, SPAIN
10. SERVICIO DE URGENCIAS DEL HOSPITAL HENARES-COSLADA, MADRID, madrid, SPAIN
11. SERVICIO DE URGENCIAS DEL HOSPITAL PUERTA DE HIERRO, MADRID, madrid, SPAIN
12. SERVICIO DE URGENCIAS DEL HOSPITAL DE FUENLABRADA, MADRID, madrid, SPAIN

Keywords: noninvasive ventilation; dyspnea; emergency medical services

Abstract :

Noninvasive ventilation is a new type of modality in out-of-hospital environment, not having it in all out-of-hospital Emergency Services. This has shown its usefulness by using it early at hospital, reducing mortality and hospital stay, but there are no multicenter studies up to date in this line used in prehospital emergencies, not knowing the actual percentage of reduction in mortality, hospital stay and complications that would involve the use in mobile ICUs. It could have a great impact on the patient's prognosis and at a cost-effectiveness level. This study tries to give a vision of the current situation that exists in the Community of Madrid, to demonstrate its usefulness of noninvasive ventilation in the out-of-hospital setting and analyze possible solutions to the problems observed mainly in transfers with the hospitals.

Objectives: Primary: to assess whether an early noninvasive used in outpatients hospital with acute pulmonary edema and chronic obstructive pulmonary disease, reduce the prehospital mortality compared with patients that initiate the noninvasive ventilation in hospital. **Secondaries:** to assess survival, hospital stay, ICU admissions ratio, hospital readmissions after 30 days and cost effectiveness between outpatients hospital treated with noninvasive ventilation and in patients hospital treated with noninvasive ventilation. **Desing:** Observational, analytic, longitudinal and multicentre prospective cohorts' Study. **Setting:** the exposed cohort would be patients with severe respiratory failure, who initiate their symptoms at home and are treated with non-invasive ventilation in prehospital emergency medical services . The non-exposed cohort are those patients in whom ventilation is started in the hospital.

Desing: Observational, analytic, longitudinal and multicentre prospective cohorts' Study. This study began in November 2017, with 11 hospitals of the Community of Madrid health network. During six months the study was in the phase of recruitment of patients. A duration of 1.5 years is foreseen. **Study Setting:** the exposed cohort would be patients with severe respiratory insufficiency, who initiate their symptoms at home and are treated with non-invasive ventilation in prehospital care and the unexposed cohort the same patients in whom ventilation is initiated in hospital. **Population:** patients with acute pulmonary edema and / or chronic obstructive pulmonary disease treated by the services of medical emergency of Madrid (SUMMA112) and Hospital, who are recommended to be treated with noninvasive ventilation according to the recommendations of the European Respiratory Society / American Thoracic Society of 2017. **Sample size:** N = 360 patients- 180 in each cohort. **Sampling:** consecutive non probabilistic sample. **Variables: Primary result:** Inhospital mortality; **Secondary results:** In-hospital average stay, survival, readmissions, percentage of ICU admissions and cost effectiveness. **Analysis:** Descriptive analysis of characteristics, bivariate and multivariate analysis, survival analysis and cost effectiveness. Results: the sample recruited is 88 of the 360 patients without being able to provide preliminary data at the current date.

Trial Registration / Funding Information (only) :

The study was endorsed by the court of the Regional Ethics Committee of the Community of Madrid in April 2018 with a favorable opinion, approving the informed consent that participants must sign in order to review their medical records.

#18170 : Validation of the Bacterial Meningitis Score in adults consulting at an emergency department: a retrospective study**Authors:**

CHAUVIN ANTHONY (1), Celine Mesnil (2), Gauthier Pean-de-Ponfilly (3), Patrick PLAISANCE (4), Emmanuelle CAMBAU (3), Hervé Jacquier (3)

1. Emergency Department, APHP, Paris, FRANCE
2. Service des Urgences Adultes, Hopital Lariboisiere, AP-HP, Paris, FRANCE
3. Service de bactériologie, Hopital Lariboisiere, AP-HP, Paris, FRANCE
4. Service Accueil des Urgences, Lariboisière, PARIS, FRANCE

Keywords: bacterial meningitis; admission, CSF, emergency medicine; score

Abstract :

Background: In emergency medicine literature, several authors attempted to develop a prediction rule of bacterial meningitis. In 2007, Nigrovic *et al.* developed and validated a clinical prediction rule, the Bacterial Meningitis Score, for identifying children with very low risk of bacterial meningitis. But, This score is not validated in adult population. We hypothesized that using the BMS in adults could help to rule out the diagnosis of bacterial meningitis and consequently limit unnecessary hospital admissions and prolonged antibiotic use. Our objective was to evaluate its performance in adults.

Methods: We conducted a monocentric retrospective study including all adults who consulted the Emergency Department with meningitis between January 1, 2014 to December 31, 2017. We excluded patient who had at least one of the following items: antibiotics within the last 72 hours, co-occurring of another bacterial infection, recent neurosurgery, immunosuppression or immunodeficiency, resence of purpura or critical illness. Definition of patients with bacterial meningitis was based on a positive bacterial analysis of CSF (Gram stain, culture, and PCR). The patients with a non-bacterial meningitis had a negative bacterial analysis of CSF, a positive viral analysis of CSF, or an unspecified aseptic meningitis. BMS variables were: positive Gram stain of cerebrospinal fluid (CSF), CSF absolute neutrophil count ≥ 1000 cells/ μ L, CSF protein ≥ 80 mg/dL, peripheral blood absolute neutrophil count $\geq 10,000$ cells/ μ L and history of seizure before or at the time of presentation. A patient was classified at very low risk for bacterial meningitis if he did not have any of these items. Our primary outcomes were: the sensitivity, the specificity, the positive predictive value and the negative predictive value of the Bacterial Meningitis Score. The secondary outcome was the hospital admission rate using the BMS.

Results: Out of 600 patients consulting with meningitis symptoms, 419 were included in the analysis, and 15 were diagnosed with bacterial meningitis. A total of 282 (67%) patients were classified at very low risk, and none presented a bacterial meningitis. BMS sensitivity was 100% (95% CI, 79.6%-100%) and its specificity was 69.8% (95% CI, 65.3%-74.3%). With regard to our prevalence of 3.6% bacterial meningitis, the negative and the positive predictive values were respectively 100% (95% CI, 88.8%-100%) and 10.9% (95% CI, 5.7%-16.2%). Using the score, the hospital admission rate could have decreased from 63% (n=264/419) to 33% (n=137/419).

Conclusion: The Bacterial Meningitis Score could be a useful tool in the management of patients with suspicion of meningitis that can help to screen patients who do not require hospitalization, thus limiting the overcrowding of emergency department.

#18171 : Putting out the fire: extinguishing burnout

Authors:

Catherine Bernard (1), Sarah Tyler (2), Ben Caesar (3), Ahmed Barakat (3), Donna Butler (4)

1. Anaesthetics, Worthing Hospital , Brighton, UK
2. Emergency Medicine , Royal Sussex County Hospital , Brighton, UK
3. Orthopaedics, Royal Sussex County Hospital , Brighton, UK
4. Psychology , Royal Sussex County Hospital , Brighton, UK

Keywords: burnout, well-being, job planning

Abstract :

Background

The 2018 national training survey carried out by the General Medical Council (GMC) in the UK demonstrated that one in four of 51,956 trainees and one in five of 19,193 trainers had feelings of burnout. Burnout harbours increased risk of suicide, mental health issues, cardiovascular disease, relationship problems and substance abuse. It can lead to detrimental patient care with a recent meta-analysis showing 2-fold increased odds for poorer patient safety and satisfaction along with increased unprofessional behaviour. In this cross-sectional study, we sought to examine whether an innovative clinical fellow program in the emergency department (ED) at the Royal Sussex County Hospital (RSCH) has been beneficial to clinicians wellbeing. Our aim is to demonstrate whether decreased levels of burnout are associated with the ED clinical fellow program.

Methods

The Copenhagen Burnout Inventory (CBI) was used and disseminated via email. Scores of less than 25, 25 to 49, and 50 or more were categorized as low, intermediate, and high burnout. All answers were anonymous. The questionnaire was open between July and August 2018. It was sent to doctors of four different specialities (orthopaedics, acute medicine, emergency medicine and general surgery) and of varying grades (FY1 level to consultant).

Results

There were 128 respondents with a response rate of 77% (n=165): emergency medicine (n= 51, 39.8%), acute medicine (n=36, 28.1%), orthopaedics (n=27, 21.1%), general surgery (n=14, 10.9%). There were 25 consultants (19.5 %), 46 registrars (40 %) and 71 junior doctors (55.5 %). The general surgery doctors had the highest total burnout scores (50.00+/-28.32) followed by emergency medicine (46.47+/-23.64), acute medicine (46.13+/-24.24), and orthopaedics (40.20+/-25.49). Junior doctors had the highest burnout scores (53.42+/-24.07), followed by consultants (44.48+/-24.12) and registrars (39.54 +/-21.86).

ED clinical fellows had lower average burnout scores (38.95 +/- 24.84) than the rest of the respondents (45.43 +/-12.68), which was approaching significance (p=0.06). When compared to all other respondents within ED (49.6 +/- 9.54), clinical fellows did have statistically significantly lower average burnout scores (p=0.002)

Discussions and Conclusions

Our surgical colleagues had the highest burnout scores. There is ample data to suggest that it is emergency medicine clinicians that have amongst the highest levels of burnout and we presumed this would be the outcome.

We can see a general trend of increasing burnout scores with decreasing seniority and this is consistent with other studies comparing different grades of clinicians.

ED clinical fellows had lower burnout scores compared to all the other specialities and to the rest of the cohort within ED. The ED clinical fellows have a different job plan and this could be the contributory factor to their improved well-being. Their annualised rota, part time clinical work, simplified shift patterns and extracurricular projects along with a full workforce, 24 hour consultant cover and self-rostering for registrars appear to

have combined into the perfect storm to positively affect clinician wellbeing. More departments should be taking note of these change to try and mitigate against the devastating impact that burnout will have on the workforce and the individual it affects.

#18172 : Through the Letterbox : A Clinical Patient Feedback system for Ambulance Personnel**Authors:**

Charlotte Elliott (1), Madeline Dann (2), Tim Smith (3)

1. ST4 Emergency Medicine, Mid Cheshire Hospitals NHS Foundation Trust, Liverpool, UK
2. Emergency Department, Mid Cheshire Hospitals NHS Foundation Trust, Crewe, UK
3. Emergency Department Consultant, Mid Cheshire Hospitals NHS Foundation Trust, Crewe, UK

Keywords: ambulance, paramedic, clinical feedback

Abstract :

Introduction: North West Ambulance Service NHS Trust (NWAS) is the second largest ambulance trust in England.

Often NWAS paramedics and crew are curious about what happened to patients they cared for who were handed over to the hospitals' care. The teams do not traditionally learn the diagnosis of a patient and it is difficult for personnel to follow patients' journeys.

Work done by Pollock and Black showed that paramedics found it beneficial to receive the patient's diagnosis and discharge destination which enabled them to audit the quality of their work and improve skill in diagnosis.

Jenkinson et al also developed clinical feedback for paramedics to support their professional development.

Aim: To create a clinical patient feedback system for NWAS personnel within the Emergency Department at Mid-Cheshire Hospitals NUS Foundation Trust

Method: Buy-in was gained from NWAS with positive feedback. A post-box was installed in the triage area in the Emergency Department where the ambulances arrive with a poster advertising the clinical feedback system and a leaflet on what to do to obtain the necessary information. Clinical patient feedback forms were designed and placed next to the post-box with instructions to the NWAS personnel to fill it in and post the leaflet into the post-box. A doctor was then allocated to respond to the NWAS queries by emptying the post-box once a week.

Results: On average 10 clinical patient feedback forms are received each week. The system has only gained positive feedback. Examples of feedback received include:

"I just wish more hospitals did the same. It's the most frustrating part of our job, not finding out whether we were on the right track."

"Brilliant, thanks for the feedback!"

"As a new Paramedic I think this kind of feedback is really useful in improving my judgement for similar future cases."

Conclusion: This simple yet effective clinical feedback system for NWAS personnel has provided an invaluable learning and development tool and received a positive and encouraging response. It has also allowed positive interaction between different emergency services providers.

Trial Registration / Funding Information (only) :

None.

#18173 : Outcome prediction in emergency elderly admissions: derivation and external validation of the Geriatric Emergency Risk on Admission Score**Authors:**

Khushal Arjan (1), Luke Hodgson (2)

1. Brighton & Sussex Medical School, Brighton & Sussex University Hospital Trust, Brighton, UK
2. Intensive care medicine, Western Sussex Hospitals NHS Foundation Trust, Worthing, UK

Keywords: Elderly, Geriatric, Outcome prediction, Emergency, Mortality prediction

Abstract :

Background

The over 65 demographic have demonstrated the largest increase in emergency hospital admissions of any age group. Measures of acute illness severity using only physiological parameters have shortcomings in the older patient. Accurate risk scores combining acute physiology e.g. National Early Warning Score (NEWS), co-morbidities, and Clinical Frailty Score (CFS) in this cohort may support clinical decision making and inform discussions with patients and carers. This study aimed to derive and externally validate an in-hospital mortality risk score for the acutely unwell older patient.

Methods

This multicentre cohort study collected data on non-elective admissions in those aged ≥ 65 years from the emergency departments of two UK district general hospitals (2017-2018), which were treated as independent populations to derive and validate the score. Accessible and clinically significant variables underwent regression analysis for in-hospital mortality. Independent predictors of mortality from the derivation cohort were used to create GERAS. Model performance was assessed for discrimination and calibration in the validation cohort. Area under curve (AUC) analysis is presented with 95% confidence intervals. Secondary outcomes measured were 48-hour and seven-day mortality, 30-day readmission, and extended hospital stay.

Results

17,905 admissions were analysed in both derivation ($n = 8,974$) and validation ($n=8,931$) cohorts. GERAS was stratified into low, medium, high, and severe risk with corresponding mortality in each group of 0.4, 3.9, 9.3, and 24.1 percent, respectively. GERAS AUC for in-hospital mortality was 0.79 (0.77-0.80), compared to NEWS at 0.65 (0.62-0.67) and CFS at 0.76 (0.74-0.77) alone. GERAS demonstrated better calibration than NEWS and Clinical Frailty Score, Hosmer-Lemeshow: 0.302 vs 0.157 and 0.008, respectively. AUCs for mortality prediction at 48-hours and 7-days were 0.84 (0.78-0.90) and 0.83 (0.79-0.86), respectively. AUCs for 30-day re-admission and extended hospital stay were 0.68 (0.65-0.70) and 0.52 (0.50-0.54), respectively.

Conclusion

GERAS is an easy to use, high discriminating risk score that could be integrated into existing electronic hospital systems for use within hours of admission. Future studies could validate GERAS in external populations and consider impact analysis.

Trial Registration / Funding Information (only) :

Ethical approval: NHS South Central - Hampshire B Research Ethics Committee (REC reference 18/SC/0513)

#18174 : A retrospective observational study of predicting the severity following glufosinate ammonium containing herbicide poisoning.**Authors:**

DOOSUNG LEE (1)

1. resident, Department of Emergency Medicine, Uijeongbu St. Mary's Hospital, College of medicine, The Catholic University of Korea., Uijeongbu-si, KOREA

Keywords: Phosphinothricin, Poisoning, Complication**Abstract :**

Background : According to the increased agricultural use of glufosinate ammonium (GLA) herbicide, GLA poisoning recently has been increased in Korea. The incidence of severe complications has been frequently reported with the increased frequency of use. So, we investigated the possible predictive factors associated with the severe complications following GLA poisoning.

Methods : A retrospective review of medical records was conducted in patients who had visited with GLA poisoning in emergency medical center of Uijeongbu St. Mary's Hospital, College of medicine, The Catholic University of Korea from 2006 to 2017. The following were excluded from the study group; parenteral exposure, co-ingestion with other toxin, and patients discharged within 6 hours after the poisoning that could not observe complications. Patients included in this study were divided into severe group and non-severe group. Severe complications were defined as the followings; Respiratory failure requiring intubation, systolic blood pressure less than 90 mmHg, Glasgow Coma Scale of less than 8, and presence of seizure. We compared the demographic and clinical variables of severe group and non-severe group. Two-sample T-test or Wilcoxon Rank-Sum test was used for continuous variables. Chi-square test or Fisher's Exact test was used for nominal variables. For multivariate analysis, logistic regression analysis using backward elimination was used.

Results : 76 patients were included; 40 patients in the non-severe group and 36 patients in the severe group. The age was significantly higher for severe group (non-severe, mean \pm standard deviation, 50.2 ± 11.1 , severe, 63.4 ± 15.5 , $p < 0.001$). The ingested amount was significantly larger in the severe group (non-severe, median 95.0ml interquartile range 30.0-125.0, severe, 200.0ml 150.0-300.0, $p < 0.001$). The ingested amount per weight was also significantly larger in the severe group (non-severe, 21.2mg/kg 8.8-36.0, severe, 58.8mg/kg 46.6-80.3, $p < 0.001$). There was no significant difference in body weight between the two groups (non-severe, 64.5 ± 11.3 kg, severe, 64.9 ± 10.4 kg, $p = 0.877$). Poisoning Severity Score (PSS) 2 or higher was more in the severe group (non-severe, 8(20.0%), severe, 27(75.0%), $p < 0.001$). Acute Physiology and Chronic Health Evaluation (APACHE) II score was significantly higher in the severe group (non-severe, 3.0 2.0-6.0, severe, 8.5 5.0-12.5, $p < 0.001$). Sequential Organ Failure Assessment (SOFA) scores were also significantly higher in the severe group (non-severe, 1.0 0.0-2.0, severe 2.0 1.0-5.0, $p = 0.002$). Serum ammonia was significantly higher in the severe group (non-severe, $98.0 \mu\text{g/dl}$ 87.0-142.0, severe, $168.0 \mu\text{g/dl}$ 106.0-200.0, $p = 0.007$). Estimated glomerular filtration rate by Modification of Diet in Renal Disease equation (MDRD-GFR) was smaller in the severe group (non-severe, $88.2 \pm 16.7 \text{ mL/min/1.73m}^2$, severe, $72.9 \pm 24.0 \text{ mL/min/1.73m}^2$, $p = 0.002$). The spot urine protein was significantly higher in the severe group (non-severe, 2.9mg/dL 2.4-8.1, severe, 13.6mg/dL 5.2-76.4, $p = 0.005$). The urine protein to creatinine ratio was also significantly higher in the severe group (non-severe, 0.1mg/dL 0.0-0.1, severe, 0.2mg/dL 0.1-0.7, $p = 0.001$). In multivariate analysis, ingested amount per weight and PSS 2 or higher were more significant predictors.

Conclusion : Our study showed that MDRD-GFR seems to be significantly lower in the severe group after GLA poisoning. PSS 2 or higher and ingested amount per weight may be useful to evaluate the severity of complications after GLA poisoning.

#18175 : A prospective study of lactate, lactate clearance and Glasgow-Blatchford score for prediction of adverse outcomes in patients with upper gastrointestinal bleeding**Authors:**

Natthanicha Adunyatham (1), Lt. Col. Thananan Isarangul Na Ayudhya (2), Lt. Col. Niti Mathesiriwat (2)

1. Resident, Pramongkutklao hospital, Bangkok, THAILAND
2. Instructor, Pramongkutklao Hospital, Bangkok, THAILAND

Keywords: Upper gastrointestinal bleeding, lactate, Glasgow-Blatchford score, adverse outcomes, triage

Abstract :**A prospective study of lactate, lactate clearance and Glasgow-Blatchford score
for prediction of adverse outcomes in patients with upper gastrointestinal bleeding**

Natthanicha Adunyatham, MD

Lt. Col. Thananan Isarangul Na Ayudhya, MD

Lt. Col. Niti Mathesiriwat, MD

Emergency Department, Pramongkutklao Hospital, Thailand

Abstract

Background: Upper gastrointestinal bleeding (UGIB) is a common condition which carries significant morbidities and mortality. Triage of patients at risk who need urgent and aggressive management is challenging and an accurate screening tool is essential.

Objectives: To determine the correlation between lactate, lactate clearance and Glasgow-Blatchford score (GBS) and to investigate whether lactate, lactate clearance and GBS are predictive of adverse outcomes in patients with UGIB.

Material and Methods: A prospective observational study was conducted in the Emergency Department, Pramongkutklao Hospital, Thailand between September 2017 and October 2018. Patients, aged 18 years or older, presenting with UGIB were enrolled. Serum lactate was measured at the time of arrival (initial lactate) and 6 hours later. 30-day rebleeding, organ failure (acute kidney injury and acute respiratory failure), intensive care unit (ICU) admission and 30-day mortality were assessed as adverse outcomes. Demographic data, clinical data and GBS were collected by chart and laboratory database review. Correlation between lactate, lactate clearance and GBS and predictive value of these parameters for adverse outcomes were analyzed.

Results: Of 130 patients enrolled, mean initial lactate was 3.3 (0.8-24.1) mmol/L and 43 patients (33.1%) had adverse outcomes. Initial lactate level weakly correlated with GBS ($r=0.238$, $p = 0.006$). Initial lactate of 8 mmol/L or more was predictive of ICU admission and 30-day mortality ($p = 0.038$ and 0.024 , respectively) while GBS predicted organ failure ($p < 0.001$) and composite adverse outcomes ($p < 0.001$). There was neither correlation between lactate clearance and GBS nor any adverse outcomes.

Conclusion: Serum lactate may have a role in triage of UGIB patients at high risk of adverse outcomes in addition to the currently used screening tools.

Keywords: Upper gastrointestinal bleeding, lactate, Glasgow-Blatchford score, adverse outcomes, triage

Trial Registration / Funding Information (only) :

None

#18176 : Survey on the perception of Emergency Medicine among final year students of the Faculty of Medicine**Authors:**

Carlos Hernández Teixidó (1), Álvaro Martín Pérez (1), Concepción de Vera Guillen (2), Juan M Fernández Núñez (3), Rosario Peinado Clemens (2), Milagros Lucas Gutierrez (1)

1. Servicio de Urgencias. Complejo Hospitalario Universitario de Badajoz, Servicio Extremeño de Salud, Badajoz, SPAIN
2. Infanta Crisitina Hospital. Emergency Department, Servicio Extremño de Salud, Badajoz, SPAIN
3. Infanta Cristina Hospital. Emergency Department., Servicio Extremeño de Salud, BADAJOZ, SPAIN

Keywords: emergency medicine. Teaching. University. Medicine students.

Abstract :

Intro: Emergency Medicine (EM) is close to reach the development as speciality of its own in every country in European Union, except for three of them, including Spain. Even with good perspectives for the following years, the political changes make Emergency physicians skeptikal about achieving that goal.

As a fact, nowadays methodology for teaching is not regulated, but with accesory postgraduate education and opcional structured rotation for residents. That is why Emergency Medicine needs to become a primary speciality. However, spanish Schools of Medicine teach Emergency Medicine as a compulsory subject, specifically for the last ten years in the school attached to our hospital.

Objective: To know the opinion of the students of our faculty about EM, their predisposition to choose it if possible through the MIR system (internal resident physician) and the factors related to such choice if any.

Methods - Descriptive-analytical study carried out on students currently studying for their medical degree in Badajoz (Extremadura, Spain). All students were invited to participate through an anonymous survey (first and second cycle students) during the months of September and October 2018. Demographic variables were collected, previous contact with EM (through a relative or friend), intention to choose this specialty in the MIR if there is one, desire to rotate by Emergency Department during their academic training, importance of the specialty and if they believe that it should exist in Spain as a primary specialty. For statistical analysis, the mean and standard deviation were used for continuous variables and percentages for qualitative variables. For comparisons we used t Student for continuous variables and Chi cuadrado for qualitative variables. Statistical calculations were performed with the SPSS 24.0 program.

Results: Of the 734 students enrolled, 589 (80.25%) responded to the survey, the majority being women (69.6%) and of Spanish nationality (92.70%). Of the total number of students enrolled, the fourth highest (70.83%) in the year in which the least number of students responded. Of all of them, 17.04% would choose EM as the first option in the MIR and 46.90% would take it into account among the first 5 options, with vocation being the first reason for this (82.70%). 30.28% have a relative in the first or second degree who devotes himself/herself to medicine and the importance given to the subject on a scale of 1 to 10 is 9.28. 84.20% believe that EM should exist as a primary specialty. More than 90% wish to do internships in the emergency department.

Conclusions: The majority of our students want EM to exist as a primary specialty in Spain and a not inconsiderable part would be taken into account among their options when it comes to practicing professionally in the future. This preference is influenced by issues of vocation.

#18177 : From right hand digital ischemia to brain death**Authors:**

Maria Gracia González Trejo (1), Álvaro Martín Pérez (1), Concepción de Vera Guillen (2), Ángel Martínez Monsalve (3), Gema Guerrero Martínez (4)

1. Servicio de Urgencias. Complejo Hospitalario Universitario de Badajoz, Servicio Extremeño de Salud, Badajoz, SPAIN
2. Infanta Crisitina Hospital. Emergency Department, Servicio Extremeño de Salud, Badajoz, SPAIN
3. Vascular Surgery and Angiology Service. Complejo Hospitalario Universitario de Badajoz, Servicio Extremeño de Salud, Badajoz, SPAIN
4. Radiology Department. Complejo Universitario Hospitalario Badajoz, Servicio Extremeño de Salud, Badajoz, SPAIN

Keywords: upper limb ischemia, brain death, thrombosis

Abstract :

1-Clinical History.

A 37 years old female went to the Hospital Emergency Department presenting a clinically compatible case of acute arterial ischemia that affects first, second and fifth finger of the right hand (cyanotic coloration, coldness, pallor and sudden lancinant pain) of hours of evolution, with strong, symmetrical and bilateral radial and brachial pulse

Her medical history includes allergy to Penicillin and Beta-lactams, 10-12 cigarettes/day active smoker and with no oral contraceptive treatment.

2-Physical Examination.

Hemodynamically stable.

Cardiac Auscultation: rhythmic, controlled frequency, no murmurs.

Pulmonary auscultation: vesicular murmur preserved.

Abdomen: no pathological findings.

Lower extremities: symmetrical bilateral pedal pulses.

Upper extremities: symmetrical positive radial pulses.

Normal neurological examination.

Complementary tests.

In analyses performed, 19,000 leukocytosis stands out, without neutrophilia, coagulation, biochemistry with ions and normal CPK.

In electrocardiogram the existence of sinus rhythm at 80 bpm without acute alterations in repolarization is observed.

In AngioTAC of MSD arterial thrombosis is visualized in the origin of the right troncoobraquiocephalic and in the origin of the right subclavian with distal revascularization.

Thrombosis of the ulnar artery in the middle third of the arm with distal recanalization in the palmar arch.

4.-Procedures.

With these findings, the vascular surgeon proceeds to surgical intervention, performing simultaneous arteriotomy in right carotid and humeral artery, passing through retrograde carotid Fogarty that occludes it, another Fogarty catheter that passes through the humeral with scopic control obtaining organized thrombus and good pulsatile arterial flow; control TSA scopia shows complete repermeabilization of common carotid, right vertebral and ipsilateral subclavian.

5.-Evolution.

The patient is admitted to the ICU, normothermic, low level of consciousness, haemodynamically stable. In view of the persistence of GCS 3-4 points and punctiform pupils, Brain CT scans is informed as normal and AngioTAC TSA/cerebral are performed, with thrombosis of the right vertebral artery with hypoplastic left vertebral artery.

ICTUS code is activated for mechanical thrombectomy.

After performing the technique, most of the thrombus is extracted with repermeabilization of vertebral artery and basilar artery after three passes, with persistence of thrombus in the most distal area.

CT of the cranium is performed after thrombectomy, visualizing hypodense corticosubcortical images in both cerebellar lobes, more extensive in the left, compatible with established ischemic areas, doubtful involvement of the brainstem.

The patient is kept with GCS 4 points. Picture of progressive arterial hypertension refractory to treatment with subsequent severe hypotension.

3-point GCS and bilateral arreactive mydriasis; positive encephalic death examination is performed.

Diagnosis.

Acute arterial ischemia of the upper right limb by floating thrombus in the right brachiocephalic trunk. Thrombosis of the right vertebral artery. Cerebral ischemia. Encephalic death.

7.-Differential diagnosis.

7.1.-Hematological causes.

Antiphospholipid syndrome, Leiden factor V mutation, 20210 prothrombin gene mutation, protein S deficit, protein C and antithrombin III, thrombotic thrombocytopenic purpura, sickle cell anemia.

Systemic diseases.

Nephrotic syndrome, Paraneoplastic syndrome, systemic lupus erythematosus.

7.3.-Inflammatory vasculopathies.

Arteritis of the temporal, Takayasu's disease.

7.4.-Cardiopatias.

Arrhythmias, atrial fibrillation, valvular diseases and valvular prostheses.

7.5.-Others.

Pregnancy, puerperium, hormonal treatment and contraception.

#18182 : Effective factors in the severity of trauma due to traffic accidents; an epidemiological study based on Haddon matrix**Authors:**

Omid Garkaz (1), Shaker Salari Lak (2), Hamid Reza Khalkhali (3), Hamid Reza Mehryar (4)

1. Master of Epidemiology, Urmia University of Medical Sciences, Urmia, Iran, Master of Epidemiology, Urmia University of Medical Sciences, Urmia, Iran, Urmia, IRAN, ISLAMIC REPUBLIC
2. Associate Professor of Epidemiology, Department of Public Health, Islamic Azad University, Tabriz Branch, Tabriz, Iran, Associate Professor of Epidemiology, Department of Public Health, Islamic Azad University, Tabriz Branch, Tabriz, Iran, Urmia, IRAN, ISLAMIC REPUBLIC
3. Associate Professor of Biomedical Sciences, Urmia University of Medical Sciences, Urmia, Iran, Associate Professor of Biomedical Sciences, Urmia University of Medical Sciences, Urmia, Iran, Urmia, IRAN, ISLAMIC REPUBLIC
4. Assistant Professor of Emergency Medicine, Urmia University of Medical Sciences, Urmia, IRAN, ISLAMIC REPUBLIC

Keywords: Accident, Risk Factor, Haddon Matrix, Trauma

Abstract :

Introduction: According to the World Health Organization (WHO) road traffic accidents would be third most common cause of disability in the world by the year 2020. This study aims to determine effective factors in the severity of trauma due to traffic accidents; an epidemiological study based on Haddon matrix.

Method: This is a cross-sectional study including all injured patients due to traffic accidents during the year 2016 who referred to Urmia Imam Khomeini University Hospital. According to the Haddon matrix, three groups of hosts, agent and environment are involved in any accident. Demographic data and data related to Haddon risk factors were extracted and analyzed by SPSS software.

Results: A total of 2015 injured patient due to traumatic accidents with an average age of 33.63 ± 18.53 were evaluated. Of which 1474 (73%) cases were male. The most important and common mechanisms of trauma were car to pedestrian accidents which include 563 (27.9%), roll over includes 626(31.1%) events and two cars crash which includes 530 (26.3%) cases. The most important causes of the accident were high speed 1477 (73.2%) and deviation from the path 361(9/17%). The most common age group was between 17 and 30 years old with 694 (34.4%) cases. Most of the accidents were outside the city. The highest accident rate occurred between 15:00 to 20:00 o'clock (39.6%). Also, 700 (34.7%) cases had severe and critical injuries, while 515 (25.5%) had mildly injured. The most important mechanisms which cause severe injury in accidents were as follow: roll over 103 (30.3%), car to pedestrian 92 (27.1%) and car to cars collisions 77 (22/6%) cases. ($p < 0.001$)

Conclusion: Young adults between 17-30 years old were the main age group involved. Other risk factors which related to the severity of injury are: 1-Host related variables contain not to use safety tools and illegal speed. 2- Vehicle related variables contain: roll over, car to car and car to pedestrian accidents. 3-Environment related variables: day time between 15:00 to 20:00 o'clock and outside of the city roads were the most determinant factors involved in the severity of the injuries based on Haddon matrix.

#18184 : FAST (Focused Assessment with Sonography in Trauma) findings before and after serum therapy in blunt abdominal trauma patients**Authors:**

Hamideh Akbari (1), Esmaeil Raayatdoost (2), Samaneh Aabiri (2), Navid Kalani (3), Atefeh Abdollahi (1), Alireza Jalali (1)

1. Emergency Medicine, Tehran University of Medical Science, Tehran, IRAN, ISLAMIC REPUBLIC
2. Emergency Medicine, Jahrom University of Medical Science, Jahrom, IRAN, ISLAMIC REPUBLIC
3. technician of anesthesiology, Jahrom University of Medical Science, Jahrom, IRAN, ISLAMIC REPUBLIC

Keywords: Blunt Abdominal Trauma, FAST, Serum Therapy

Abstract :

Background:Trauma is the first cause of youth mortality in developing countries.Focused Assessment with Sonography for Trauma(FAST)has been shown to be a reliable tool for examining the trauma patients.Hence,the purpose of this study was to compare the FAST findings before and after serum therapy.**Materials and methods:**This descriptive-analytical study was performed on 200 trauma patients,who randomly entered the study.Inclusion criteria were normal FAST,and stable vital signs and exclusion criteria were positive FAST findings,penetrating abdominal trauma and unstable vital signs.The trauma patients,underwent sonography at the baseline and four hours after serum therapy.Data were analyzed using descriptive (mean and percentage) and inferential (Wilcoxon) statistics.**Results:**The mean age of patients participating in the study group was 33 ± 15.85 years,including 86.5% male and 13.5% female.The results showed that the serum therapy could significantly increase oxygen saturation,diastolic blood pressure and level of consciousness($P=0.001$).Respiratory rate,pulse rate,and systolic blood pressure were reduced,and the number of FAST-based suspicious diagnoses were also decreased($P=0.001$).**Conclusion:**Our study demonstrated that the serum therapy reduces suspected cases in the FAST examination.

#18186 : Spectrum of acute drug toxicity during the most popular house and techno party in the world**Authors:**

Ksenija Slankamenac (1), Daniel Mueller (2), Aline Herzog (1), Hugo Kupferschmidt (3), Arnold von Eckardstein (2), Dagmar I. Keller (1)

1. Emergency Department, University Hospital Zurich, Zurich, SWITZERLAND
2. Institute of Clinical Chemistry, University Hospital Zurich, Zurich, SWITZERLAND
3. Tox Info Suisse, Chemistry, University Zurich, Zurich, SWITZERLAND

Keywords: acute drug toxicity, novel psychoactive substances, prevalence, house and techno party

Abstract :

Background: Since 1991, the Street Parade, world's most popular house and techno parade in Zurich, is still a mecca for ravers. One Saturday in every August, about one million visitors celebrate this initially peaceful event which stands for love, freedom and tolerance. However, extensive drug abuse has also been commonly seen. The prevalence of acute drug toxicity (ADT) due to novel psychoactive substances (NPS) during the Street Parade is unknown. Therefore, the aim was to investigate the drug spectrum of acute intoxicated patients from the Street Parade presenting in the Emergency Department (ED).

Methods: We investigated consecutively urine samples of acute intoxicated patients who participated at the Street Parade and presented in a Swiss tertiary care ED in 2017 and 2018. The endpoints were the analysis of the drug spectrum and assessment of the prevalence of ADT by NPS.

Samples were analyzed by a screening method using liquid chromatography coupled to high-resolution mass spectrometry. Substances were identified by their theoretical exact mass and by comparing acquired tandem mass spectrometry (MS/MS) to library spectra.

Results: In total, we analyzed 47 urine samples. Ten patients presented with symptoms of ADT but only a wide spectrum of different medications was detected. In 20 patients (42.5%), alcohol without any other drug was identified. Finally, 17 intoxicated patients (36.2%) consumed drugs plus alcohol. The three leading drugs were cocaine (21.3%), 3,4-methylenedioxymethamphetamine (MDMA) (19.1%) and tetrahydrocannabinol (THC) (17.0%) followed by methamphetamine (8.5%), methylphenidate (6.4%) and 2.1% for each lysergic acid diethylamide and amphetamine. Furthermore, one patient (2.1%) showed an abuse of NPS (methylone) in combination with alcohol, cocaine and MDMA.

An overdose of methamphetamine occurred in five patients in 2018 whereas no overdose of methamphetamine was detected in 2017.

Conclusion: Cocaine, MDMA and THC in combination with alcohol are the most prevalent drugs in Street Parade patients whereas NPS are still rare. Methamphetamine intoxications seem to increase. Thus, future preventive strategies need to sensitize the rave scene about the drug spectrum and possible health consequences.

Trial Registration / Funding Information (only) :

no trial

#18188 : SHABÚ, AN UNUSUAL CAUSE OF HEART FAILURE

Authors:

Núria Ribas (1), Cora Garcia-Ribas (1), Teresa Giralt (1), Guillem Caldentey (1), Laia Belarte (1), Eduard Solé-González (1), Oriol Pallas (2), August Supervia (2), Alicia Calvo (1), Núria Farré (1), Sonia Ruiz (1), Lluís Recasens (3), Julio Martí-Almor (3)

1. Cardiology, Hospital del Mar, Barcelona, SPAIN
2. Emergency Care Unit, Hospital del Mar, Barcelona, SPAIN
3. Cardiology, Hospital del Mar, Barcelona, SPAIN

Keywords: shabu, ventricular dysfunction, non ischaemic cardiomyopathy

Abstract :

Background: *Shabu* is another name for crystal methamphetamine, a highly addictive stimulant drug, which abuse is rising up in Europe especially into the Philippine community. Both acute and chronic abuses have been related to cardiac pathology.

Aims and methods: Characterize the cardiovascular patterns of *shabu* users who have been admitted in our hospital. Consumption is confirmed by either history or positive urine toxicology tests.

-

Results: Between March and December 2018, 6 patients were admitted (mean age 45 years, 66% males and 83% Filipinos). Only 1 recognized the consumption and laboratory tests had to be used in the rest to confirm its abuse. The initial clinical manifestation was heart failure in all cases, progressing to cardiogenic shock in one of them and another patient was complicated by sudden cardiac death (polymorphic ventricular tachycardia). The ECG showed signs of ventricular overload (5/6), right bundle branch block (1/6) and QT interval prolongation in all of them. We observed left ventricular dilatation and either left and right ventricular dysfunction in 5 patients (LVEDD 56mm[48-67mm]; LVEF 24%[20-30%]); RVEDD 92mm[53-181mm];TAPSE 16mm; RVEF 23%[19-34%]). Cardiac catheterization ruled out coronary artery disease in all of them. Despite the offered support, only one-patient reached follow-up.

Conclusions: Methamphetamine abuse is associated with cardiovascular complications, being heart failure with systolic dysfunction the most common clinical manifestation in our series. The consumption denial, especially into the Philippine community, complicates the diagnostic and demands a high clinical suspicion in the differential diagnostic of non-ischemic cardiomyopathies.

LVEDD: LV end-diastolic diameter

LVEF: left ventricular ejection fraction

RVEDD: RV end-diastolic diameter

TAPSE: Tricuspid annular plane systolic excursion

#18189 : Determining mortality rate in traffic accident patients admitted in Urmia Imam Khomeini University Hospital by using TRISS methodology**Authors:**

Omid Garkaz (1), Shaker Salari Lak (2), Hamid Reza Khalkhali (3), Hamid Reza Mehryar (4)

1. Master of Epidemiology, Urmia University of Medical Sciences, Urmia, Iran, Master of Epidemiology, Urmia University of Medical Sciences, Urmia, Iran, Urmia, IRAN, ISLAMIC REPUBLIC

2. Associate Professor of Epidemiology, Department of Public Health, Islamic Azad University, Tabriz Branch, Tabriz, Iran, Associate Professor of Epidemiology, Department of Public Health, Islamic Azad University, Tabriz Branch, Tabriz, Iran, Urmia, IRAN, ISLAMIC REPUBLIC

3. Associate Professor of Biomedical Sciences, Urmia University of Medical Sciences, Urmia, Iran, Associate Professor of Biomedical Sciences, Urmia University of Medical Sciences, Urmia, Iran, Urmia, IRAN, ISLAMIC REPUBLIC

4. Assistant Professor of Emergency Medicine, Urmia University of Medical Sciences, Urmia, IRAN, ISLAMIC REPUBLIC

Keywords: Mortality, TRISS, Traffic Injuries

Abstract :

Introduction: One of the most common causes of trauma is driving accidents that endanger the humans' health. Road accidents are the second leading cause of death and life threatening event in the Iran. The purpose of this study was to determine the survival rate of randomized patients and assess the quality of hospital care using the TRISS method.

Methods: This cross-sectional study was performed on 1697 randomized patients admitted to Imam Khomeini Hospital of Urmia in 1395. Blood pressure, GCS and respiratory rate were obtained at the time of admission. The severity of injuries classified according to the description of the operation note, results taken from brain CT scans and ultrasound reports. Survival rate assessed and compared with deaths occurred by using TRISS method. In addition Z and W were used to compare the survival probability.

Results: In this study, 1697 injured traffic accident patients with incidence criteria were investigated. The results showed that 1226 (72.2%) were men and 471 (27.7%) were female. About 238 (14/0%) people were between 0 and 14 years old, 1197 (70/5%) were between 15 and 54 years old and 262 (15.5%) were over 54 years old. The mean age of the subjects was 33.25 years. The mean RTS score for recovered patients was 7.75 (SD = 0.38) and for dead patients (SD = 1.57). The mean ISS for recovered patients subjects was 14.57 (SD = 13.72) and for dead patients was 56.32 (SD = 25.02). In this study, 60 deaths were predictable according to TRISS score, while the study found that 69 deaths occurred (35 per 1,000 injured deaths). of which 9 deaths were more than expected.

Conclusion: This study showed that the actual rate of mortality rate was more than predictable rate (about 9 cases) and it could be caused by low level of quality of care in hospitals.

#18190 : Demographic characteristics of injuries Traumatic injuries due to driving accidents referring to Imam Khomeini Hospital in Urmia in 2016**Authors:**

Omid Garkaz (1), Shaker Salari Lak (2), Hamid Reza Khalkhali (3), Hamid Reza Mehryar (4)

1. Master of Epidemiology, Urmia University of Medical Sciences, Urmia, Iran, Master of Epidemiology, Urmia University of Medical Sciences, Urmia, Iran, Urmia, IRAN, ISLAMIC REPUBLIC

2. Associate Professor of Epidemiology, Department of Public Health, Islamic Azad University, Tabriz Branch, Tabriz, Iran, Associate Professor of Epidemiology, Department of Public Health, Islamic Azad University, Tabriz Branch, Tabriz, Iran, Urmia, IRAN, ISLAMIC REPUBLIC

3. Associate Professor of Biomedical Sciences, Urmia University of Medical Sciences, Urmia, Iran, Associate Professor of Biomedical Sciences, Urmia University of Medical Sciences, Urmia, Iran, Urmia, IRAN, ISLAMIC REPUBLIC

4. Assistant Professor of Emergency Medicine, Urmia University of Medical Sciences, Urmia, IRAN, ISLAMIC REPUBLIC

Keywords: Demographic, Traffic, Accident

Abstract :

Background and Aim: Nowadays accidents and its growing rate is one of the most important risks that threaten the development of community health. Mortality rate caused by accidents are one of the most important causes of death in the world and the first cause of death in Iran. The purpose of this study was to determine the demographic characteristics of injured traumatic patients due to road accidents in referred to Urmia Imam Khomeini University Hospital in 2016.

Materials and Method: This cross-sectional and retrospective census study was conducted on 2015 traumatized trauma victims who were referred to Urmia Imam Khomeini University Hospital in 2016. The data were collected using a checklist for demographic data and type of the injury. Data were analyzed by SPSS software version 23 using descriptive statistics.

Results: The mean age of the injured was 33.63 years. Most of them were men (73.2%) and the majority of them were not employed (46.8%). The majority of women were housekeeper (70.8%). Among the two gender groups, most accidents occurred inside the city. About 48.1% of the male injured and 48.1% of the women was transferred to the hospital by EMS and 56 (0.20%) The number of injured died before being hospitalized.

Conclusion: Most accidents occurred in the city and majority of injured were in low socioeconomic level. Therefore this group is in a priority for designing and implementing educational and cultural interventions. Because of active young people are common age group which involved, it leads irreversible effects on community and families' life. Then full and strict enforcement of traffic regulations can help reduce accidents.

#18193 : ASSOCIATION OF suPAR, PROCALCITONIN, C-REACTIVE PROTEIN, LACTATE, AND TROPONIN I WITH ADMISSION, READMISSION AND MORTALITY IN ACUTE MEDICAL PATIENTS.
Authors:

ARIEL RUBEN LINDO NORIEGA (1), MIGUEL ANGEL CALLEJAS MONTOYA (2), ANA CASTILLO MORCILLO (2), Carolina Andres Fernandez (3), Fidel Urtecho Paredes (2), Juan Luis Sanchez Rocamora (2), Gonzalez Luis Jesus (4), Maria Soledad Navarro Ruiz (5)

1. , Villarrobledo`s General Hospital, albacete, SPAIN
2. emergency department, Villarrobledo`s General Hospital, albacete, SPAIN
3. Laboratory, Hospital General de Villarrobledo, Albacete, SPAIN
4. emergency department, Villarrobledo`s General Hospital, Tomelloso, SPAIN
5. emergency department, Villarrobledo`s General Hospital, Albacete, SPAIN

Keywords: suPAR, readmission, mortality

Abstract :

Aim: To determine the usefulness of the biomarkers suPAR, procalcitonin, C-reactive protein (CRP), troponin I and lactate on the decision of admission/discharge in relation to readmission and mortality rates of acute medical patients.

Methods: Patients included were those presenting at ER ; aged >18 years, with suspected infection. Data of the biomarkers of interest and demographic details were obtained at initial triage. Admission or discharge status was recorded, and patient history followed until outcomes of interests occurred within 3 months from baseline (readmissions, death). Differences in biomarkers related to outcomes were assessed with independent samples t-test and C-statistics (ROC curve analysis). Analysis was carried out with SPSS version 25.

Results: Two hundred and one (n=201) acute medical patients were inclusion, of which 186 patients (93%) had all the data needed for analysis. Median age was 69 years (IQR 42-83) and 51% were men. Patients who were admitted had significantly higher suPAR, lactate and CRP levels compared to those admitted. No significant differences were observed in age, procalcitonin or troponin. Fourteen patients were readmitted within 14 days from initial presentation, and suPAR was associated with risk of readmission. A subanalysis of the predictive value of the biomarkers with readmission was performed including only those patients that were not hospitalised at index presentation to ER. These (n = 7) had higher probability of 15-day readmission: suPAR AUC 0,815, p = 0.006. No other biomarkers were associated with readmission. The analysis considering readmission in 30 days provided similar results.

Regarding mortality, suPAR levels were significantly higher in patients that died (n = 5, mean suPAR 12,7 ng/ml, SD 3,2) compared to survivors (n = 194, suPAR 8,2, SD 3,5 p = 0.006). ROC curve analysis resulted in AUC 0,83, p = 0.012 for suPAR. No other biomarkers were associated with mortality in this analysis, but inequality in compared groups might have limited the results.

Conclusion: Of the investigated biomarkers, suPAR at first presentation in ER was the strongest predictive factor for readmission and mortality of patients admitted or discharged. In particular, it was a strong marker of readmission in early discharged patients.

Analysis and ROC graphs:

Patient ID 2489954 had a suPAR value of 0.31 and was censored (2 is the lowest of the QT assay). Patients with suPAR above 15 ng/ml was set to 15 ng/ml.

Admission or discharge (variable name DischargeDomAdmis1on1). Data available on biomarkers, readmission, and mortality on 186 pt. 81 patients were admitted and 105 discharged. suPAR (AUC 0.70,

95%CI: 0,63-0,78), PCT (0,66, 95%CI 0,58-0,74) and CRP (0,62, 95%CI: 0,53-0,70) levels were significantly higher in patients admitted compared to discharged.

Trial Registration / Funding Information (only) :

Virogates(www.virogates.com)

#18194 : Analgesic efficacy of Fascia Iliaca Compartment Block performed to patients with suspected neck of femur and intertrochanteric fractures in an Italian Emergency Department

Authors:

Alice Comaglio (1), Paolo Terragnoli (1), Vittorio Bendotti (1), Simone Franzoni (2), Monica Bettonagli (1)

1. A&E, Fondazione Poliambulanza, Istituto Ospedaliero, Brescia, ITALY
2. Ortho-geriatrics, Fondazione Poliambulanza, Istituto Ospedaliero, Brescia, ITALY

Keywords: Fascia Iliaca Compartment Block, analgesia, hip fracture

Abstract :

Background: Fascia Iliaca Compartment Block (FICB) is a local analgesic technique proved to reduce pain in patients with proximal femur fractures. It integrates systemic analgesic treatment (with Paracetamol, NSAIDs, and Opioids) and allows the “opioid-sparing”, reducing the number of adverse effects related to opioids’ use. With this study, we verified the effectiveness of FICB 10 minutes and 1 hour after administration and according to different types of fracture (neck of femur/intertrochanteric) and the necessity of systemic analgesia.

Methods: monocentric, prospective study on a convenience sample of patients admitted to the A&E of Fondazione Poliambulanza – Istituto Ospedaliero (Brescia) with clinical suspicion of proximal femur fracture between 9th February 2018 and 9th February 2019, treated with FICB just after the triage, in addition to systemic analgesic therapy if required. FICB was performed with the “double pop technique” using Mepivacaine and Ropivacaine. Pain was measured with the “Verbal Rating Scale” (VRS) at rest and with active movement or passive leg raise in three different moments: before FICB, 10/20 minutes after FICB and 1 hour after FICB. Statistical analysis was performed using SPSS statistics ver. 25.

Results: In the 12-month-period considered, 209 patients were admitted to the A&E with clinically suspected proximal femur fracture but we enrolled 151 patients who had inclusion criteria (proximal femur fracture, FICB administered, able to rate the pain). Females were 68.9%; the mean age of the whole sample was $82,2 \pm 9,5$ years; the mean ASA score was $2,9 \pm 0,7$. More than one-half of patients (55,2%) experienced an effective improvement in pain after the FICB. In 16,1% of cases, there was no improvement in pain score despite the FICB. Pain was more often classified as “unbearable” in intertrochanteric fractures than in neck of femur fractures, respectively counting 18.5% and 12.9% of cases. One hour after FICB, pain was classified as “severe” or “unbearable” in 18.7% of patients with intertrochanteric fractures and in 7.9% of patients with neck of femur fractures. The 20.3% of patients were treated also with systemic analgesia: in neck of femur fractures 15.2% of cases were treated with Paracetamol/NSAIDs and 6.1% with Opioids; in intertrochanteric fractures, 8.3% of patients were treated with Paracetamol/NSAIDs and 11.1% with Opioids. We didn’t have any adverse event after FICB.

Conclusions:

in our experience, FICB was an effective procedure: one-quarter of the patients included had “mild” or “absent” pain 10 minutes after the procedure and another one quarter had the same result after 1 hour.

FICB seemed to be more effective in intertrochanteric fractures than in neck of femur fractures, but, at the same time, cases that didn’t improve after FICB were the double among patients with intertrochanteric fractures than in those with neck of femur fractures.

The type of systemic analgesia was related to the initial pain intensity and to the type of fracture: Paracetamol/NSAIDs were used especially in neck of femur fractures, Opioids in intertrochanteric fractures.

FICB turned out to be an easy technique, that could be administered in the vast majority of patients with a suspected hip fracture, without complications.

#18195 : The effect of hemostatic dressings designed for emergency services on blood components in the swine coagulation system**Authors:**

Pawel Jastrzebski (1), Zbigniew Adamiak (2), Anna Doboszynska (1), Tadeusz Milowski (1)

1. Faculty of Health Sciences, University of Warmia and Masury, Olsztyn, POLAND
2. Faculty of Veterinary Medicine, University of Warmia and Masury, Olsztyn, POLAND

Keywords: hemostatic dressing, bleeding, wound

Abstract :

The main role of haemostasis is to maintain the fluidity of the circulating blood, preserve the integrity of the intravascular compartment and prevent blood loss when the endothelial continuity in blood vessels is broken.

Extensive injuries accompanied by severe bleeding pose a life-threatening risk. Trauma-induced haemorrhaging can cause coagulopathy, even in patients without a prior history of clotting disorders. This process can be exacerbated when haemostatic dressings are used to stop massive bleeding.

Materials and Methods

The study was approved by the Institute for Animal Welfare and the Bioethics Committee. All animals were handled humanely in compliance with the Policy on Humane Care and Use of Laboratory Animals and the standards of the Polish Council on Animal Care. The experiments were also approved by the Local Committee for Animal Care in Olsztyn (Decision No.44/2014/N).

The total amount of animals used in this experiment was 24.

The surgical procedures were done under general anaesthetics. The hemostatic dressings were applied on incised femoral arteries.

Animals were divided on two groups:

Group 1 – 12 pigs,

Group 2 – 12 pigs.

Results

Significant changes in whole blood cell (WBC) counts were observed in groups I and II, which increased significantly 24 hours after the induction of injury and remained high in both experimental groups until day 7. Fourteen days later, significant changes were noted in WBC counts between groups I (G) and II (S). In group I (G), platelet (PLT) counts decreased significantly 1 hour following injury but they increased significantly from 24 hours onwards. In group II (S), PLT counts continued to increase throughout the duration of the experiment, with the highest peak on day 7. Fourteen days.

Statistically significant differences were also noted between groups I (G) and II (S) in mean corpuscular haemoglobin (MCH) and mean corpuscular volume (MPV) values 14 days following injury.

Significant changes were observed in the concentration of the remaining coagulation parameters; i) fibrinogen, ii) D- dimer, iii) antithrombin III activity and iv) thrombin- antithrombin complexes. Fibrinogen concentration increased significantly, and DD increased highly significantly 24 h after injury in both groups I (G) and group II (S). By day 7, FIB values decreased, whereas DD values continued to increase. Fibrinogen concentration was significantly lower in group I (G) 1 hour following injury compared to the second groups.

The greatest decrease in ATIII values was observed 1 hour following injury in both groups I and II, which continued to increase progressively until day 14. The observed changes in ATIII values were accompanied by changes in TAT values.

Discussion

The modified haemostatic dressings used in this study had a strong procoagulant effect. Due to a strong reaction and high fibrinogen concentrations, which can cause disseminated intravascular coagulation, further studies with modified dressing types are required.

#18200 : Salivary biomarkers role in pain diagnostics**Authors:**

Kristina Ganzijeva (1), Lina Jankauskaite (2)

1. Student, Lithuanian University of Health Sciences, Kaunas, LITHUANIA

2. MD, PhD, Lithuanian University of Health Sciences; Hospital of Lithuanian University of Health Sciences Kauno klinikos Department of Pediatrics, Kaunas, LITHUANIA

Keywords: pediatric pain, pain diagnostics, biomarkers

Abstract :**Introduction**

The key to adequate pain management is assessing its presence and identifying exact severity of the pain. Current 'gold-standard' pain assessment tools rely on self-reporting, requiring an ability to communicate this personal experience. Self-reporting varies from patient to patient and could be inaccurately understood by healthcare professionals. According to the study results, acute as well as chronic pain remains one of the most misunderstood, under-diagnosed, and under-treated medical problems, particularly in children. Pain diagnosis and management would benefit from the development of objective markers of nociception and pain.

Aims

To investigate concentration of salivary cortisol and melatonin in children with acute pain and compare it with severity of pain and changes in vital signs.

Methods

We conducted a pilot observational study in Lithuanian University of Health Sciences Hospital Kauno Klinikos Pediatric emergency department (PED). Twenty six patients complaining of acute pain referred to PED were included into the study. Patients having chronic conditions (cancer, immunodeficiency, diabetes etc.), fever, dehydration or chronic pain were excluded. We recorded patient's gender, age, vital signs (heart rate (HR), blood pressure (BP), respiratory rate (RR), temperature (t°) and oxygen saturation (SaO₂)), pain characteristics (severity and duration of pain according the used pain scale and its localization). Saliva samples were collected and were stored in -80° C till analysis was performed. Samples were analyzed using cortisol and melatonin ELISA kits.

Results

Sixteen boys and 10 girls were involved in our research. Age median was 10 (4-16) years. Fourteen cases were trauma patients, 12 cases referred due to pain of other origin than trauma. Analyzing vital signs, we noticed HR and BP increase with regard to pain. Other parameters (RR, t° , SaO₂) were within the age range. The median of cortisol and melatonin levels were 287.5 (68-1330) pg/ml and 17.6 (8.6-46.8) pg/ml respectively. There were several findings related to saliva hormone level and intensity of pain, duration of pain and its link to vital signs. There was a tendency to melatonin reduction with increased intensity of pain ($p=0,136$). The longer the pain lasted, the higher cortisol levels were identified ($p=0,01$). However, there was no link between abnormal vital signs and changes in our biomarkers.

Conclusion

Our primary results show a cortisol rise with regard to pain in time dependent manner. Melatonin levels decreased in relation to increased pain intensity. These results show a potential of cortisol and melatonin as biomarkers in acute pain diagnostics.

#18201 : Evolution in acute pain assessment and treatment in urgent pediatrics: experience from Lithuanian University of Health Sciences Kauno Klinikos**Authors:**

Kristina Ganzijeva (1), Ieva Kindereviciute (1), Lina Jankauskaite (2), Algirdas Dagys (3)

1. Student, Lithuanian University of Health Sciences, Kaunas, LITHUANIA

2. MD, PhD, Lithuanian University of Health Sciences; Hospital of Lithuanian University of Health Sciences Kauno klinikos Department of Pediatrics, Kaunas, LITHUANIA

3. MD, Lithuanian University of Health Sciences; Hospital of Lithuanian University of Health Sciences Kauno klinikos Department of Pediatrics, Kaunas, LITHUANIA

Keywords: pediatric pain, trauma, pain assessment, pediatric emergency

Abstract :**Introduction**

Today, pain is characterized not only as physiological reaction and response to tissue damage, it is recognized as multidisciplinary issue and multi-profile problem. Over the last decades great progress was made in pediatric pain evaluation and pain management. However, acute as well as chronic pain remains one of the most misunderstood, under-diagnosed, and under-treated medical problems, particularly in children.

Aims

To investigate accuracy of acute pain assessment and management in Pediatric Emergency Department (PED) in Lithuania University of Health Sciences Hospital Kauno Klinikos (LSMU KK).

Methods

We performed a retrospective card record analysis before (year 2017) and after (year 2018) pediatric pain training course was conducted. In total, 1000 randomly selected outpatient card records were analyzed. All cases were divided into two groups: group A records from 2017, group B – from 2018. Cases were further divided into trauma and non-trauma and subdivided into 4 different age groups. We collected patient age, origin of pain, pain characteristics, pain score and medication.

Results

We compared 500 pain cases in each group. Group A and B consisted of 154 (30.8%) and 116 (23.2%) traumatic patients respectively. Pain was scored less in group A (420 children (84%)) comparing to group B (94.4% of all 500 cases, $p < 0.001$). In all age groups of group B pain was assessed more frequently and pain medication was prescribed more often compared to group A ($p < 0.001$). There was a tendency to assess pain more often in non-traumatic patients in group A ($p = 0.054$). However, pain relief in traumatic patients was less adequate compared to non-traumatic.

Conclusion

Pain evaluation differed in both groups. In group B pain was evaluated more frequently and received pain-medication more often than group A. Teenagers are still less likely to receive analgesics than toddlers. Tendency remains to give less painkillers to trauma patients compared to non-traumatic children.

#18203 : Association of Neutrophil to Lymphocyte Ratio and Platelet to Lymphocyte Ratio with In-Hospital Mortality in Patients with Gastrointestinal Perforation Undergoing Surgery**Authors:**

yeonghoon bae (1)

1. , CMC, Seoul, KOREA

Keywords: platelets to lymphocyte ratio; gastrointestinal perforation; mortality; prognostic factor

Abstract :

Objective: The Neutrophil to lymphocyte ratio (NLR) and platelet to lymphocyte ratio (PLR) are recognized markers of inflammation associated with poor outcomes in various clinical situations. Gastrointestinal perforation (GIP) is a life-threatening disease with a high mortality rate. We analyzed the prognostic significance of NLR and PLR in patients with gastrointestinal perforation (GIP) undergoing surgery.

Methods: This was a multi-center observational retrospective study. We reviewed electronic medical records of adult patients with GIP admitted to three academic hospitals between January 2009 and December 2018, who also received surgical operation. We obtained demographic and clinical data of GIP patients. Multivariate logistic regression model was used to determine the predictive value of NLR and PLR on in-hospital mortality and to evaluate risk factors associated with in-hospital mortality. The primary outcome was all-cause in-hospital mortality.

Results: Among 9279 patients, 879 adult patients with GIP underwent surgical operation. Seventy eight patients (8.9%) were died and 801 (91.1%) were survived. In the Multivariate logistic regression analysis, factors associated with in-hospital mortality were female, underlying chronic renal failure, C-reactive protein >100mg/l and Albumin <3.5g/dl (Adjusted odds ratio [95%CI]; 2.73 [1.07-6.97], 4.20 [1.83-9.68], 8.43 [2.29-31.03], 5.36 [2.29-12.59], respectively).

Conclusion: NLR and PLR are not associated with mortality in patients with gastrointestinal perforation undergoing surgery in the study. Female, underlying chronic renal failure, C-reactive protein>100 mg/l and Albumin<3.5 g/dl may help to identify high-risk patients.

Trial Registration / Funding Information (only) :

Financial support None Conflict of interest: None of the authors has declared a conflict of interest.

#18205 : Evaluation of diagnostic and prognostic value of serum D-dimer level in thoracic aortic dissection: an observational study**Authors:**

Pourya Pouryahya (1), Hamid Reza Morteza Bagi (2), Sajjad Ahmadi (3), Seyed Hesam Rahmani (4)

1. Emergency Medicine Consultant, Department of Emergency Medicine, Casey Hospital, Monash Health., Adjunct Lecturer, School of Clinical Sciences, Monash University, MELBOURNE, AUSTRALIA

2. Assistant Professor of Emergency Medicine, Department of Emergency Medicine, Imam Reza Hospital, Tabriz University of Medical Sciences, TABRIZ, IRAN, ISLAMIC REPUBLIC

3. Assistant Professor of Emergency Medicine, Department of Emergency Medicine, Sina Hospital, Tabriz University of Medical Sciences, TABRIZ, IRAN, ISLAMIC REPUBLIC

4. Emergency Medicine Consultant, Department of Emergency Medicine, Ostad Alinasab Hospital, Iranian Social Security, TABRIZ, IRAN, ISLAMIC REPUBLIC

Keywords: D-dimer ,Aortic dissection ,Prognostic value

Abstract :**Background:**

Thoracic aortic dissection occurs at an approximate annual rate of 3 per 100000 people in the world. No information is available on the prevalence of Aortic Dissection in Iran. Delay in diagnosis and without treatment, mortality rate is 1 to 3% per hour during the first 24 hour.

Thoracic aortic dissection can imitates other conditions such as ischemic heart diseases, pulmonary embolism, and heart failure. Because of its high mortality rate, definitive diagnosis and immediate treatment are crucial. The aim of this study was to determine the efficacy of measuring the serum D-dimer level in diagnosis of patients with thoracic aortic dissection.

Methods:

This study was performed in the Emergency Medicine Department of Islamic Azad University of Tabriz. In this study serum D-dimer level measured in all patients with confirmed thoracic aortic dissection in CT Aortogram. 30 patients from this group then were randomly selected and compared with 30 normal samples as the control group. The sampling method was simple random sampling.

Result:

66.66% patients in the experimental group and 53.33% in the control group were male while 33.33% patients in the experimental group and 46.66% in the control group were female ($P=0.292$).

The mean age of patients in the experimental group (with thoracic aortic dissection) was 52.33 ± 9.85 years and in the control group was 52.83 ± 10.31 years ($P=0.848$).

The mean level of D-dimer in patients in the experimental group and control group was 1303.30 ± 147.57 and 58.60 ± 13.15 , respectively.

The mean level of D-dimer in the experimental group was significantly higher than control group ($P < 0.001$).

Conclusion:

No significant difference was observed between the levels of D-dimer in patients in the experimental group who died and patients who survived, D-dimer level dose not predict mortality ($P=0.176$).

This study shows that serum D-dimer level might be a good test to rule out thoracic aortic dissection but not in the prognosis.

Trial Registration / Funding Information (only) :

Emergency Medicine Department of Islamic Azad University of Tabriz, IRAN No found

#18206 : Lingual and sublingual hematoma: a case report**Authors:**

Pourya Pouryahya (1), Seyed Hesam Rahmani (2), Sajjad Ahmadi (3)

1. Emergency Medicine Consultant, Department of Emergency Medicine, Casey Hospital, Monash Health., Adjunct Lecturer, School of Clinical Sciences, Monash University, MELBOURNE, AUSTRALIA
2. Emergency Medicine Consultant, Department of Emergency Medicine, Ostad Alinasab Hospital, Iranian Social Security, TABRIZ, IRAN, ISLAMIC REPUBLIC
3. Assistant Professor of Emergency Medicine, Department of Emergency Medicine, Sina Hospital, Tabriz University of Medical Sciences, TABRIZ, IRAN, ISLAMIC REPUBLIC

Keywords: Lingual, Hematoma, Endoscopy

Abstract :**Background:**

Lingual hematoma without any previous associated trauma or any bleeding risk factors is a rare entity. Its spontaneous presentation is commonly described in patients on anticoagulation therapy.

Case:

We present a rare case of severe Lingual and sublingual Hematoma in an 81-year-old woman, 2 hours prior to admission. She had hypertension without any history of coagulation disorders, recent dental work or consuming any anticoagulant or antiplatelet drugs. She had a history of upper endoscopy due to upper GI bleeding and 2 units packed cell transfusion one week ago. The patient was awake and oriented without complaining of pain or breathlessness. Her Blood pressure was 160/90 mmHg, heart rate 100 bpm, respiratory rate 21 bpm and oxygen saturation 93% without supplemental oxygen. The exploration of the oral cavity showed a severe hematoma in dorsum surface, ventral surface and floor of the mouth, the lesion was slightly painful in the digital palpation, there was slightly submental swelling in the anterior neck. She couldn't close her mouth completely due to swollen tongue but she had no dyspnea. The blood test parameters including platelet and coagulation studies were within normal ranges. She was admitted to surgery ward for more evaluation and probably potentially life-threatening airway obstruction. After 2 days there wasn't any progression in hematoma size or dyspnea and she was discharged home without any complication or intervention. On follow-up visit after 1 week she was well, and hematoma was decreased obviously.

Discussion:

Although there are few case reports of lingual hematoma in patients with uncontrolled hypertension and most iatrogenic cases are after dental implants placement or thrombolytic treatments, however we think in this case delayed lingual and sublingual hematoma following upper GI endoscopy should be considered.

Trial Registration / Funding Information (only) :

No funding

#18208 : The role of viral coinfection in children affected by bronchiolitis and treated with High Flow Nasal Cannula**Authors:**

Maria Chiara Supino (1), Valentina Ferro (1), Elena Boccuzzi (1), Carla Olita (1), Massimo Battaglia (1), Francesco Paolo Rossi (1), Carlo Concato (2), Livia Piccioni (2), Fabio Massimo Pietrangeli (1), Daniela Perrotta (3), Antonino Reale (4), Emanuele Gligioni (1)

1. Pediatric Emergency Department, Bambino Gesù Children's Hospital, IRCCS, Rome, ITALY
2. Virology Unit, Bambino Gesù Children's Hospital, IRCCS, Rome, ITALY
3. Pediatric Intensive Care Unit, Bambino Gesù Children's Hospital, IRCCS, Rome, ITALY
4. Pediatric Emergency Department, Bambino Gesù Children's Hospital, IRCCS, Rome, ITALY

Keywords: High Flow Nasal Cannula, Bronchiolitis, Children

Abstract :

Background: Bronchiolitis is the leading cause of hospitalizations in children younger than 12 months of age. The role of multiple virus respiratory infections in bronchiolitis treated with High Flow Nasal Cannula (HFNC) has not been thoroughly investigated. HFNC is increasingly utilized not only in Pediatric Intensive Care Unit (PICU), but in the overall pediatric ward and in emergency setting with a favorable patient safety. Our propose is to evaluate the contribution of coinfection on clinical course of bronchiolitis and on response to HFNC.

Methods: We conducted a retrospective observational study from September 2016 to April 2018 including children with diagnosis of bronchiolitis who were admitted to the Pediatric Emergency Department of the Bambino Gesù Children's Hospital and needed a noninvasive respiratory support. HFNC therapy was provided using AIRVO™ 2 (Fisher & Paykel Healthcare). The identification of respiratory viruses on nasopharyngeal aspirates was accomplished by multiplex RT-PCR. The panel is made up of 3 mixes which allow the identification of 16 different viruses. We compared single and multiple virus infection groups in relation to specific outcomes such the clinical response to HFNC and HFNC failure. We also performed a confrontation between HFNC failure and HFNC not-failure groups according to the number and the type of virus.

Results: Three hundred and fifty consecutive patients underwent support by HFNC during the period study. We found a coinfection in 41.7% of cases and a single virus infection in 58.3% of cases. Upon 6 hours after HFNC initiation, the two groups presented similar HR \geq 90th, RR \geq 90th but SpO₂ was significantly lower in viral coinfection group ($p=0.004$). No significant difference was reported on laboratory parameters such as CRP, leukocytes, neutrophils, lymphocytes, but radiological findings were characterized by the significant prevalence of atelectasis in coinfection (34% versus 18.6%; $p=0.04$). The duration of HFNC treatment was more prolonged in coinfection but not significantly ($p=0.09$). Maximum FiO₂ was significantly more elevated in coinfection [median (range): 0.37 (0.21-0.50) versus 0.32 (0.21-0.50); $p=0.04$]. The likelihood of coinfection decreased by 23.1% for each increase of saturation O₂ after HFNC initiation (OR: 0.769; CI95%: 0.609-0.972; $p=0.028$). The atelectasis was a positive predictive factor of coinfection (OR: 2.923; CI95%: 1.049-8.148; $p=0.04$). The duration of HFNC treatment was a positive predictor of coinfection (OR: 1.018; CI95%: 1.006-1.029; $p=0.002$). No significant differences were described between HFNC failure and HFNC not failure groups about the number and the type of viruses identified.

Conclusions: The detection of two or more viruses, as well as the type of virus, does not influence the failure of HFNC. The coinfection might play a more complex and articulate role in the clinical course of bronchiolitis assisted by HFNC.

Trial Registration / Funding Information (only) :

This study did not receive any specific funding Since it is a retrospective observational study, informed consent and registration were not necessary.

#18209 : Porto-spleno-mesenteric venous thrombosis, a potential emergency medical trap

Authors:

Pauline HAESSLER (1), Martin BEHR (2), Manana POTOCHNIK (3), Eric BAYLE (3), Fadi KHALIL (3), Ruxandra COJOCARU (3), Pascal BILBAULT (3), Paul GAYOL (3)

1. Emergency Department, New University Hospital (NHC), Strasbourg, FRANCE
2. Emergency Department, University Hospital NHC (Nouvel Hôpital Civil), Strasbourg, FRANCE
3. Emergency Department, Strasbourg University Hospital NHC (Nouvel Hôpital Civil), Strasbourg, FRANCE

Keywords: venous thrombosis, medical trap, intestinal infarct

Abstract :

Introduction: Porto-spleno-mesenteric (PSM) venous thrombosis is a rare medical condition that has an incidence rate of 1 % in the general population, and a mortality rate of 10.3 % . It mainly affects cancer and cirrhotic patients, and it also has a strong link with the presence of a myeloproliferative syndrome. In addition, it can be complicated by an acute mesenteric venous ischemia, with a risk of intestinal infarct when the three veins are reached. **Method:** observational retrospective study realized over a period of 10 years (2007-2017), including all patients admitted in our hospital with a final diagnosis of PSM venous thrombosis (pediatric population excluded). **Objective:** compare the clinical, diagnostic and therapeutic data with those of the literature. **Results:** a total of 187 patients were included (67.9% men and 32.1% women), with an average age of 64 years. Abdominal pain was the most common symptom (63.6%). Etiologies mostly identified were acute hepato-pancreatic inflammatory diseases (25.1%), hepatocarcinoma (22.5%), cirrhosis (20.9%) and digestive cancers (17.1%). In most cases, the diagnosis was obtained by contrast-enhanced abdominal computed tomography imaging (81.8%). Diagnosis of PSM venous thrombosis was an incidental finding in 24.6% of cases. Thrombophilia check-up was rare (18.2%). Anticoagulant was frequently prescribed (72.7%), including HBPM and AVK relay, but no treatment with thrombolysis was found. Acute mesenteric venous ischemia was the most common immediate complication (9.3%). Acute mortality was 1.1% at day 1, 6.5% at day 7, and 23.3% at day 30, this later related primarily to the underlying pathology. Chronic complications were also common, especially portal hypertension (28.5%). One-year mortality was of 45.3%. **Conclusion:** PSM venous thrombosis is a multifactorial disorder with heterogeneous clinical presentation and potentially life-threatening evolution. These patients require an early and accurate diagnosis and medical management, as well as a long-term follow-up.

#18210 : Epidemiological profile of emergency medical services performance and regional variations in Japan: a nationwide population-based study**Authors:**

Shunichiro Nakao (1), Yusuke Katayama (1), Tetsuhisa Kitamura (2), Jotaro Tachino (1), Takeshi Shimazu (1)

1. Department of Traumatology and Acute Critical Medicine, Osaka University Hospital, Suita, JAPAN
2. Division of Environmental Medicine and Population Sciences, Osaka University, Suita, JAPAN

Keywords: Emergency Medical Services, regional variation

Abstract :

Background: Emergency medical services (EMS) are key component of prehospital care. Evidence on EMS performance and its regional variation is limited. We sought to describe epidemiologic characteristics of ambulance transport to the emergency department (ED) and possible regional variations in Japan.

Methods: We conducted a nationwide, population-based, descriptive review of anonymized ambulance transport records in Japan. The EMS system in Japan is operated by local fire departments and is activated by phoning 119. The data were obtained from the Fire and Disaster Management Agency in Japan. All emergency patients transported to the emergency medical institution by EMS from January 1 to December 31 in 2016 were enrolled in this study. We excluded patients who were not transported. We described regional variations with eight divisions; Hokkaido, Tohoku, Kanto, Chubu, Kansai, Chugoku, Shikoku, and Kyushu/Okinawa regions.

Results: Over the study period, there were 5,707,177 transported to a hospital. The median age of the patients was 69 [interquartile range (IQR) 44-82] years and 50.6% of them were male. Patients aged over 65 years were 56.4%, and those aged 75 to 84 years were the largest group (22.3%). The median time duration from EMS call to EMS arrival on scene was 8 (IQR 6-10) minutes and that from EMS arrival to medical facility was 34 (IQR 27-43) minutes. The median time durations from EMS call to EMS arrival at the scene were similar among regions, which were ranged from 7 to 9 minutes. The longest median time duration from EMS call to hospital arrival was 38 minutes (Kanto region), whereas the shortest median time duration was 31 minutes (Chubu and Kyushu/Okinawa regions).

Conclusions: We demonstrated epidemiological profile of EMS performance and regional variations in Japan. In this nation-wide, population-based study, we found a wide regional variation in time to transport patients to medical facility.

#18212 : Comparison of characteristics and injury severity of passenger motor vehicle accidents between rural and urban city**Authors:**

JaeYeon Park (1), HoJung Kim (1), HyoJung Choi (1)

1. , SoonChunHyang university Bucheon hospital, Bucheon, Gyeonggi-do , KOREA

Keywords: Motor vehicle accident, Injury severity score, Geographic difference, Risk factor

Abstract :**Background**

The purpose of this study is to analyze the motor vehicle accidents in two different traffic environments and to compare the severity of the differences between the regions.

Methods

From January 2011 to December 2017, To compare regional characteristics, the passenger traffic accident patients who presented an emergency medical center in Wonju (population 345,143 in 2019), Gangwon-do were classified as the rural area, and in Bucheon (population 870,735 in 2019), Gyeonggi-do were classified as the urban area. Using Korean In-Depth Accident Study(KIDAS), human injury data were collected by the Emergency Medicine and Traffic Accident Research Team. The Injury severity score were classified into four categories of no treatment required (<9), mild (<15), major (<25), and critical ($25 \leq$).

Results

1484 patients in rural city, and 323 patients in urban city were enrolled. There were no differences in sex, age, height, and weight between the two regions. There were more daytime, big cars, seats other than the driver's seat, and no seatbelt in rural city than urban city. The mean ISS value was 8.98 in rural city and 4.62 in urban city ($p < 0.001$). Minor (20.4% vs. 10.8%) and above major (15.7% vs. 5.0%) injury patients were more frequent in rural city than those of urban city ($p < 0.001$). Among the factors that showed differences between the two regions, those who showed a significant relationship with the severity were the driver's seat ($p = 0.037$) and the no wearing seatbelt ($p < 0.001$).

Discussion & Conclusions

Patients who presented the emergency room due to passenger motor vehicle accidents have a higher severity of injury in rural city than urban city, and wearing seat belt was a major factor in the difference in severity between the two regions.

#18213 : Bedside ultrasound in acute patients with suspected kidney involvement - a prospective observational study**Authors:**

Pernilla G. Borggaard (1), Ole Graumann (2), Christian Laursen B. (3), Annmarie Touborg Lassen (4), Stefan Posth (4)

1. Emergency medicine - Clinical institute, University of Southern Denmark + Department of emergency medicine, Odense University Hospital, Odense, DENMARK
2. Department of radiology, Odense University Hospital, Odense, DENMARK
3. Department of respiratory medicine, Odense University Hospital, Odense, DENMARK
4. Emergency department, Odense University Hospital, Odense, DENMARK

Keywords: emergency department, bedside ultrasound, point of care, urinary tract, kidney

Abstract :

Background

Complicated urinary tract infections leading to treatment failure and readmissions is a common challenge in the emergency department (ED). An identified risk factor is obstructive uropathy. The diagnosis of hydronephrosis based on the initial clinical assessment and blood test in the emergency department is challenging.

Point-of-care ultrasound (POCUS) has the advantage of being non-radiating, rapid to apply and with increasing accessibility. POCUS has shown to be valuable when assessing the abdomen of trauma patients.

The aim of this study is to investigate incidence of hydronephrosis in patients presenting with symptoms of urinary tract infection or dehydration using POCUS in the ED and evaluate its clinical relevance and accuracy.

Methods

In this observational, prospective semi-blinded single-center study, patients were included based on preliminary diagnosis reported from general practitioner or from triage in the ED. Inclusion criteria were dehydration defined by laboratory values or urinary tract infections. In addition, patients had to present at least one of the following symptoms: Dysuria, flank pain, elevated creatinine or renal colic. Patients were collected as a convenience sample. Patients were included if aged above 18 and able to perform written consent.

POCUS of the bladder and kidneys was performed within 4 hours after admission. Results from the POCUS was blinded to the treating physician (TP) until the first questionnaire concerning radiological prescriptions was completed. After revealing the POCUS results the TP evaluated the primary assessment through a second questionnaire.

Primary outcome was hydronephrosis and urinary retention. Secondary outcome was an evaluation of applicability. Relevance and applicability were answered by analysis of questionnaires and patient laboratory values using sensitivity and specificity, χ^2 -test and logistic regression.

Results

153 patients were included during day and evening shift in the period November 4th 2018 to April 5th 2019. Hydronephrosis was found in at least one side in 10.5% (95% CI [0.98;0.22]) and urinary retention in 15.0% (95% CI [0.10;0.22]). 22.9% (95% CI [0.16;0.30]) presenting with either hydronephrosis or urinary retention. Hydronephrosis was not related to urinary retention in the study population ($p=0.2384$). 63 out of 150 TPs report by questionnaire POCUS to influence the clinical decision. TP prescribed further radiological examination in 9 of the 16 cases POCUS identified as having hydronephrosis ($p=0.4340$).

Discussion

Among limitations to this study is the single-center design and only two POCUS operators. Due to the sample size, correlations to predict subpopulations at risk for hydronephrosis remains weak. The non-coherence to urinary retention and TP assessment indicates the need for screening tools.

The use of questionnaires as measure of clinical consequence, lack specific values and actions, making it hard to analyze in terms of patient care and treatment.

Conclusion

This study found hydronephrosis in 1 in 10 included patients. Hydronephrosis based on clinical findings alone was rarely predicted, which supports POCUS as a valuable screening tool.

Trial Registration / Funding Information (only) :

The study was registered at Clinicaltrials.gov ID: NCT03873701 The study was approved by the Danish data protection agency: Journal nr. 18/48332. No ethical approval was needed. The study received funding by 'Lilly og Herbert Hansens Fond'.

#18216 : Assessment of Sedation Depth In The Patients Who Has Undergone Procedural Sedation And Analgesia In The
Emergency Department With Patient State Index (PSI) and Ramsey Sedation Scale

Authors:

Battal Yildirim (1), Murat Ersel (2)

1. Emergency Department, Batman State Hospital, Batman, TURKEY

2. Department of Emergency Medicine, Ege University School of Medicine, İzmir, TURKEY

Keywords: procedural sedation analgesia, ramsey sedation scale, patient state index, , emergency department, cerebral monitoring

Abstract :

Introduction: Painful procedures are often done in emergency departments (ED). Procedural sedation and analgesia (PSA) is frequently applied to make these procedures more comfortable and painless. The depth of sedation in patients undergone PSA is important and should be monitored closely to avoid complications may occur. Patient State Index (PSI) is calculated with the digital EEG waves and informs the clinician about the sedation level of the patient. In this study we aimed to investigate the correlation between PSI scores and Ramsay Sedation Scale (RSS) levels in patients who have undergone procedural sedation, and also to assess whether its implementation is suitable for ED.

Methods: This study was conducted cross-sectionally and prospectively. A total of 100 patients who admit to the Ege University Emergency Department with complaint of an extremity fracture or dislocation and who underwent PSA between August 2016-November 2017 were included to the study. Patients with epileptic history, altered mental status, pregnancy, intoxication and diagnosed as OSAS, and using narcoleptic drugs were excluded from the study. Sociodemographic data, vital signs, GCS, data of PSI scores and RSS levels for basal, 0, 1, 5, 10, 15, 30. minutes also complications were recorded. Statistical data were analysed with help of statistical package program SPSS 20.0.

Results: The average age of the 54 patients who enrolled to the study was $52,1 \pm 15,9$, and female/male ratio was 1. Statistically significant but a weak correlation was found between PSI scores and RSS levels in 15th, 1st, and 5th minutes after sedation onset in negative direction $-0,396$, $-0,259$ and $-0,252$ respectively ($p < 0,05$). Mean PSI scores according to RSS levels (1-5) were found to be as 85, 82, 74, 60 and 54 respectively, also this pattern was found to be coherent to the RSS levels which is clinically used. Correlation between ETCO₂ levels and PSI scores were found to be statistically significant only in 15th. minutes however very low. Complications were detected in 15 patients (%15.6). Complications were observed at 5th and 10th minutes. In 14 (93.3%) of the 15 patients with a complication, a decrease in PSI scores were detected in comparison with basal PSI scores. However no significant difference between PSI levels in between the patients groups of who has complications or has not were observed. On the other hand, RSS levels were changed only in %53,4 (n=8) of patient who experienced a complication.

Conclusion: A poor correlation was found between the RSS and PSI monitoring at the 1st, 5th and 15th minutes in patients who underwent emergency PSA. PSI decrease occurred in most of the patients who has a complication when RSS scores remains unchanged in some of those. However a significant change in PSI in occurrence of complications could not be addressed. The use of PSI monitorization seems not to be useful, in patients who have undergone procedural sedation in the ED according to our data. Although, larger scaled and well designed studies are needed to determine usefulness and specific thresholds of PSI in patients underwent PSA in the ED.

#18219 : A study on the effect of regionalization strategy for the reduction of reperfusion time in the patient with ST-elevation myocardial infarction transferred from non-PCI possible hospital: PREPARE (Preparing Revascularization Equipment before Patients Arriv

Authors:

Han Ho Do (1), Seung Chul Lee (1), Jeong Hun Lee (1), jun seok Seo (1), Yong Won Kim (1), Sanghun Lee (1), MANSOO JUNG (1), Ji Ho Song (2)

1. Department of Emergency Medicine, Dongguk University Ilsan Hospital, Goyang, KOREA
2. Department of Emergency Medicine, Dongguk University Ilsan Hospital, Goyang-si, KOREA

Keywords: ST Elevation Myocardial Infarction, Reperfusion, Time Factors, Hospital Referral

Abstract :**Purpose**

Prompt reperfusion treatment is important for the patients with ST elevation myocardial infarction (STEMI). However, patients often need interhospital transfer for percutaneous coronary intervention (PCI) because not all facilities are available for this procedure. The purpose of this study is to reduce the PCI delay through the regionalization protocol, in the patients with STEMI when they are transferred from the hospital where PCI not available.

Methods

We established revascularization protocol named PREPARE (Preparing Revascularization Equipment before Patients Arrival as Regionalization Engagement) for the STEMI patients transferred from an outside regional hospital. The protocol included immediate referral acceptance by emergency physician, real-time electrocardiogram sharing via messenger service and early activation of the PCI team. We analyzed the differences between PREPARE group with non-PREPARE group about time consumption for PCI, length of hospital stay and major adverse cardiac events within 4 weeks.

Results

In PREPARE group, the median time from the visit of first hospital to the PCI in receiving facility (D1toB time) was 111 minutes, and it was significantly shorter than non-PREPARE group (147 minutes). Rate of D1toB time achieved within 120 minutes was 26.0% (13/50) in Non-PREPARE and 60.0% (30/50) in PREPARE and showed meaningful differences between the two groups($p=0.000$). There were no statistically significant differences in hospital length of stay and major adverse cardiac events within 4 weeks.

Conclusion

PREPARE protocol as a regionalization strategy was effective to reduce revascularization time in transferred STEMI patients.

#18221 : Correlation between the use of lights and siren and in-hospital time-critical interventions for medical cases: a prospective study**Authors:**

Olivier Bertholet (1), Mathieu Pasquier (1), Elina Christes (2), Damien Wirths (3), Pierre-Nicolas Carron (1), Olivier Hugli (1), Fabrice Dami (1)

1. Emergency Department, Lausanne University Hospital, Lausanne, SWITZERLAND
2. Faculty of Medicine, University of Lausanne, Lausanne, SWITZERLAND
3. Deputy head in charge of community policy, Lausanne City, Lausanne, SWITZERLAND

Keywords: Time critical hospital interventions, Lights and siren transport, Critical care medicine, Decision-making

Abstract :

Background: The use of lights and siren transport (LST) has been a matter of debate because of the very short time savings and increased risks well established for emergency medical services (EMS) and the general population. Time-critical hospital interventions (TCHIs) are urgently needed procedures that cannot be properly performed in the out-of-hospital setting. We aimed to determine whether the use of LST was correlated with the completion of TCHIs for medical cases and to evaluate the predictive variables affecting the delay and the realization of TCHIs.

Methods: This is a monocentric prospective observational study of medical cases transported by ambulance in a Swiss State University Hospital. A convenience sampling method was used. A list of non-trauma TCHIs was developed by the study team, based on literature review and informal consensus. A senior medical assessment performed in the resuscitation room or as a "quick look" at ED triage were included in that list. Routine procedures, such as setting an intra venous line without active filling nor medication, as well as performing an electrocardiogram without immediate interpretation were however not considered as TCHIs. We used descriptive statistics to determine whether the use of lights and siren transport was correlated with the completion of TCHIs.

Results: 299 patients were included. Of these, 42 patients (14%) benefitted from LST, with 35 (83.3%) receiving a TCHI ($p < 0.001$). The most frequent medical TCHIs were new medical senior assessment and the immediate interpretation of an electrocardiogram ($p < 0.001$). Mean time from arrival to the first TCHI was 5.4 [standard deviation (SD) 7.0] minutes with lights and siren *versus* 18.1 [SD 5.8] minutes without; there was no delay when the patient was admitted directly to the resuscitation room with or without lights and siren. The most significant predictive variables with regard to the completion of TCHI were the use of LST, TCHIs expected by the EMS providers, and National Advisory Committee for Aeronautics (NACA) score ≥ 4 ; they were highly specific with a significant negative predictive value and odds ratio.

Conclusion: The use of LST in medical cases is positively correlated with the completion of TCHIs. When a TCHI is expected, the small-added time benefit of using LST should be decided independently of the use of immediate access to a full resuscitation team or to a quick medical senior assessment.

Trial Registration / Funding Information (only) :

Trial registration: - Not registred Funding: - None Ethics approval and consent to participate: - The project was submitted to the Swiss ethics commission. Due to the lack of clinical data from the patients, a formal request was deemed unnecessary. Project number 2016-01763 – 25.10.2016

#18222 : Can we combine clinical decision rules to reduce imaging of the cervical spine in trauma? A prospective pilot study.

Authors:

Els van Leest (1), Dorien Varin (2), Vanessa Brown (2), Erwin Birnie (3)

1. Emergency Physician Resident, Franciscus Gasthuis & Vlietland, Rotterdam, THE NETHERLANDS
2. Emergency Physician, Franciscus Gasthuis & Vlietland, Rotterdam, THE NETHERLANDS
3. statistician, Franciscus Gasthuis & Vlietland, Rotterdam, THE NETHERLANDS

Keywords: Clinical decision rule, cervical spine injury, cervical spine fracture, trauma patients, imaging, cervical spine Computed Tomography (CT), NEXUS, Canadian C Spine rule.

Abstract :**Can we combine clinical decision rules to reduce imaging of the cervical spine in trauma?
A prospective pilot study.**

E.J. van Leest, MD, Resident Emergency Physician, D.S.E Varin, MD Emergency Physician, A.V. Brown, MD, Emergency Physician, E.Birnie, PhD, Statistician. Franciscus Gasthuis & Vlietland, Rotterdam, The Netherlands. Designated speaker: E.J. van Leest.

Abstract

Introduction The National Emergency X-Radiography Utilization Study low risk (NEXUS) criteria and the Canadian C-spine (CCS) rule are validated rules with high specificity and negative predictive values to evaluate the need for radiography. Dr. Scott Weingart proposed/suggested a combined NEXUS-CCS rule as optimal. Aim of our study is to investigate whether the diagnostic characteristics of the combined NEXUS-CCS rule is comparable or better than the separate/single NEXUS and CCS rules.

Methods This is a prospective pilot study (n=99) of adult patients with suspicion of cervical spine injury by using NEXUS criteria, presenting at the Emergency Department (ED). The NEXUS, CCS and NEXUS-CCS rule were scored before Computed Tomography (CT). CT outcome and treatment were noted. The CT amounts, negative predictive values and NRI were estimated.

Results The incidence of cervical fracture was 3.0%. Two of the three patients had multiple fractures with a sum of 6 fractures. Dens fracture (n=1), anterior/posterior arch of C1 (n=2), fracture of calcificated anterior corpus ligament (n=2), fracture of anterior syndesmophyte (n=1). The amount of C spine CT's was 64.6% [95% CI: 54.4-74.0] compared with 88.9% [95% CI: 81.0-94.3] with NEXUS and 62.6% [95% CI: 52.3-72.2] with CCS. Negative predictive value was 11.5% [95% CI: 5.9-19.6] for NEXUS, 37.5% [95% CI: 27.8-48.0] for CCS and 35.4% [95% CI 25.9-45.8] for NEXUS-CCS. An instable fracture was missed by NEXUS-CCS and the CCS rule alone due to a young frail M. Bechterew patient.

Conclusion Our small size pilot study suggests that the test characteristics of the combined NEXUS-CCS rule are comparable to the CCS rule alone and suboptimal compared to the NEXUS rule. The combined NEXUS-CCS rule cannot accurately diagnose, nor rule out, cervical spine injury. A refinement by adding an extra criteria to select patients with bone or muscle disease as high risk patients needs further investigation.

Keywords

Clinical decision rule, cervical spine injury, cervical spine fracture, trauma patients, imaging, cervical spine Computed Tomography (CT), NEXUS, Canadian C Spine rule.

#18223 : Application of a european derived high sensitivity troponin I one hour acute myocardial infarction rule-out/rule-in algorithm to emergency department patients in the united states**Authors:**

Richard Nowak (1), Robert Christenson (2), Gordon Jacobsen (3), James McCord (4), Fred Apple (5), Adam Singer (6), Alexander Limkakeng (7), William Peacock (8), Christopher deFilippi (9)

1. Emergency Department, Henry Ford Health System, Detroit, USA
2. Laboratory Medicine , University of Maryland, Baltimore, USA
3. Biostatistics, Henry Ford Hospital, Detroit, USA
4. Cardiology, Henry Ford Hospital, Detroit, USA
5. Department of Laboratory Services and Pathology, Hennepin County Medical Center, Minneapolis, USA
6. Emergency Department, SUNY Stony Brook, New York, USA
7. Emergency Department, Duke University School of Medicine, Durham, USA
8. Emergency Department, Baylor College of Medicine, Houston, USA
9. Cardiology, Inova Heart and Vascular Institute , Falls Church, USA

Keywords: high sensitivity troponin, Emergency Department, United States

Abstract :

Objective: High sensitivity cardiac troponin I (hs-cTnI) assays are currently being approved for use in the United States (US). Their accuracy across the spectrum of patients evaluated for acute myocardial infarction (AMI) in US Emergency Department (ED) patients is uncertain. Our objective was to determine the efficacy of a 1 hour (AMI) rule-out/rule-in European derived hs-cTnI algorithm when applied to a demographically and risk-factor diverse patient population in the High Sensitivity Cardiac Troponin I in the US (HIGH-US) study.

Design and Method: This was a prospective multi-center observational study. All consenting adults presenting with any suspicion by the treating emergency physician for AMI were enrolled. For this analysis all patients with ST segment elevation AMI were excluded. The baseline (< 90 minutes after initial clinical troponin) and 1 hour (\pm 30 minutes) plasma samples obtained were later batch analyzed in 3 core laboratories using the Siemens Atellica hs-cTnI assay (combined gender 99th % 45.0 ng/L). AMI diagnosis was independently adjudicated using all 30 day clinical materials available.

Results: A total of 2505 patients were enrolled in 29 US medical centers with 2113 qualifying for a validation of the 1 hour algorithm. Subject median age was 56 years (interquartile range 48-65), 1313 (56.0%) were males with 1313 (56.0%) white and 939 (40.0%) black patients. Patient past medical history included hypertension in 1626 (69.5%), coronary artery disease in 876 (37.9%), previous revascularization in 656 (28.6%), prior myocardial infarction in 473 (21.0%), heart failure in 471 (20.4%) and diabetes in 687 (29.4%), while 77 (3.3%) were receiving renal dialysis. ECG abnormalities included ST depression (\geq 0.5 mm) in 138 (5.9%) and T wave inversions in 277 (11.8%). Patients (excepting dialysis) with AMI had significantly more (all $p < 0.001$) of these characteristics but they were also commonly seen in those without AMI.

There were 1065 (50.4%) patients ruled-out with a NPV of 99.7% and sensitivity of 98.7% (95%CI: 99.2-99.9 and 96.3-99.6 respectively). Of these 714 (33.8%) had a baseline hs-cTnI value < 3 ng/ml and 351 (16.6%) had a baseline value < 6 ng/L and a delta 1 hour value < 3 ng/L. Additionally there were 265 (12.6%) individuals ruled-in with a PPV of 69.4% and specificity of 95.7% (95%CI: 63.6-74.7 and 94.7-96.5 respectively). Of these 210 (9.9%) had a baseline hs-cTnI >120 ng/L and 55 (2.5%) had a delta 1 hour value >12 ng/L. The remaining 783 (37.1%) patients placed in the continue evaluations zone had a prevalence of adjudicated AMI of 5.6% (95%CI 4.2-7.5). In the ruled out patients the overall 30-day risk of death or post discharge AMI was low (0.2%).

Conclusions: The European derived and utilized 1 hour rule-out/rule-in AMI algorithm using hs-cTnI yields

very similar results for rule-out (very high NPV) with a very low rate of 30 day adverse outcomes when used in an all comers US population having many cardiac risk factors. Further studies are needed to improve the PPV and specificity of a 1 hour rule-in algorithm for AMI for use in US EDs.

Trial Registration / Funding Information (only) :

As observational study no trial registration completed Multicenter US Trial funded by Siemens Diagnostics. All statistical analyses reported were initiated or confirmed by statistician independent of the sponsor.

#18227 : Compare the outcomes of Emergency Severity Index and Manchester Triage System in Trauma Patients**Authors:**

Hossein Zakeri (1), Behrang Rezvani kakhki (2), Tayyebeh Seyedi (3), Tayyebeh Hosseinzadeh (4), Maryam Ziadi Lotfabadi (2)

1. Department of Emergency Medicine, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC
2. Department of Emergency Medicine, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC
3. Department of Medical Library and Information Sciences, School of Allied Medical Sciences, Shahid Beheshti University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC
4. Department of Emergency Medicine, School of Nursing, Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC

Keywords: Manchester triage, Emergency Severity Index, Trauma center

Abstract :

Objective: The objective was to compare the rate of hospitalization, mortality and the length of stay (LOS) in trauma patients which was triaged with Emergency Severity Index and Manchester Triage System.

Method: A total of 950 patients were arriving at the Trauma center triaged by five trained triage nurses by Severity Index and Manchester Triage System. Rate of admission, length of stay at the ED and mortality data were evaluated.

Results: 447 patients triaged with the ESI and 503 patients triaged with the MTS were included. 70% of patients who were triaged with ESI were placed in level 3 triage, and 34% with the Manchester triage were in the yellow group (equivalent group 3). The hospitalization rate at each triage level in the both systems is approximately equal. During the study, mortality rate in both groups was 0%.

Conclusion: Based on our study, the use of ESI triage in the trauma center causes that more patients arrive to the emergency department instead of the fast tract. So losing the emergency staff' time and energy with ESI will be more. However, further studies are needed to prove this result.

Trial Registration / Funding Information (only) :

This research is supported and funded by Mashhad University of Medical Sciences

#18228 : Decompressive craniectomy may not be effective for traumatic brain injury; A Nation-wide propensity score matching cohort study in Japan

Authors:

Yumi Mitsuyama (1), Yusuke Katayama (2), Tetsuhisa Kitamura (2), Nakagawa Yuko (2), Takeshi Shimazu (2)

1. Osaka University Graduate School of Medicine, Osaka University Graduate School of Medicine, osaka, JAPAN
2. Osaka University Graduate School of Medicine, co-author, Osaka, JAPAN

Keywords: traumatic brain injury

Abstract :

Background: Cerebral edema in traumatic brain injury can lead to cerebral herniation and result in disability or death. Decompressive craniectomy (DC) has been performed for the purpose of relieving elevated intracranial pressure with outcome improvement in severe TBI patients. However, there was little evidence whether DC was effective for outcome of TBI patients. We assessed the relationship between decompressive craniectomy for patients with severe traumatic brain injury and the prognosis using nation-wide hospital-based trauma registry in Japan.

Methods: Using Japanese Trauma Data Bank, we included severe traumatic brain injury patients whose head AIS scores were 3 and over and registered from 2004 to 2017 in this study. Multivariable logistic regression analysis and conditional logistic regression analysis were used to assess the association between decompressive craniectomy and the prognosis of traumatic brain injury patients after one-to-one propensity score matching for DC versus non-DC. The primary outcome was dead at hospital discharge.

Results: Among 69411 eligible patients with severe traumatic brain injury, 1523 patients (2.2%) received DC and 67888 patients (97.8%) did not receive DC. In the univariate analysis, the proportion of dead at discharge was higher in the DC group than the non-DC group (36.5% [556/1523] vs. 14.5% [9828/67888]). In the multivariate analysis, the DC group showed a more favorable survival outcome than the non-DC group (adjusted OR 0.294, 95% CI; 0.265-0.327). However, in the propensity-matched cohort, the DC group did not show a more favorable survival outcome than the non-DC group (68.7% [1045/1522] vs. 63.5% [967/1522], adjusted OR 0.787, 95% CI; 0.675-0.919).

Conclusion: Decompressive craniectomy may not be effective for patients with severe traumatic brain injury.

#18233 : Analysis of the value of CRAMS Score System in death risk assessment in different gender and age groups of trauma patients in earthquake**Authors:**

Yaqi Chen (1), Run Lin (1), Enjiang Lai (1), Mingke You (1), Dan Yang (1), Hai Hu (2)

1. , West China School of Medicine, Sichuan University, Chengdu, CHINA

2. , Emergency Office of West China Hospital, Sichuan University; China International Emergency Medical Team (Sichuan); Chinese National Comprehensive Emergency Medical Rescue Base , Chengdu, CHINA

Keywords: Trauma, Triage, CRAMS, Death Risk Assessment

Abstract :**Background:**

The huge casualties and limited medical resources of the earthquake disaster are very contradictory. Use of effective triage method is an approach to solve this problem. CRAMS Score System (Circulation, Respiration, Abdomen, Motor and Speech) is a triage method used in mass casualty incident. However, there were still not enough evidences to prove its value in different groups of patients in earthquake. The aim of this study was to assess and make a comparison about the value of CRAMS Score System in death risk assessment in different gender and age groups consisted by the injured in earthquake.

Methods:

A retrospective analysis was conducted on 36604 trauma patients from the Earthquake Casualty Database of West China Hospital of Sichuan University. These patients who were divided into different groups according to their gender and age were scored respectively through CRAMS. Death risk assessment used area under the receiver-operator curve (AUC).

Results:

33148 valid data were finally included. In different gender groups, the ROC of male and female reflected as 0.834 ($P < 0.0001$) and 0.770 ($P < 0.0001$). In different age groups, the ROC of juvenile aged from 7 to 17, the youth aged from 18 to 40, the middle aged from 41 to 65 and the old aged 66 and over was revealed respectively as 0.810, 0.910, 0.847 and 0.717 ($P < 0.0001$).

Discussions & Conclusions:

It indicated that CRAMS Score System is of use in different gender and age groups due to its considerable value showed in this research. It performed more accurately in the male group and the middle-age group, but it was less valuable in terms of death risk assessment for the old. In conclusion, CRAMS Score System was considered to be helpful in assessing death risk of trauma patients in earthquake.

#18234 : Retrospective comparison of the effects of Revised Trauma Score Prehospital Index and Sacco Triage Method in the death risk assessment and injure severity assessment of earthquake mass trauma patients**Authors:**

Mengjiao Tao (1), Aoyu Wang (1), Run Lin (1), Zilun Shao (1), Hai Hu (2)

1. , West China School of Medicine, Sichuan University, Chengdu, CHINA
2. , Emergency Office of West China Hospital, Sichuan University;China International Emergency Medical Team (Sichuan);Chinese National Comprehensive Emergency Medical Rescue Base - Chengdu - CHINA, Chengdu,CHINA

Keywords: RTS, PHI, STM, triage method,injure severity assessment

Abstract :**Background :**

Revised Trauma Score(RTS), Prehospital Index(PHI) and Sacco Triage Method(STM) are all considered as new methods for disaster scenes compared with traditional STRAT Triage Method. However, which one is the best way to assess the degree of injury of victims, hasn't been proved.

Aims :

To determine the accuracy of three disaster triage methods RTS, PHI and STM in death risk and assess their degrees of consistency with ISS (Injury Severity Score) to verify the proof.

Methods:

Using data from trauma patients that recorded in West China Hospital, a retrospective analysis was conducted on 33,080 patients, assigned to different triage scores by RTS, PHI and STM respectively. All of the triage methods were evaluated based on death cases, during transport and in the emergency department, using area under the receiver-operator curve (ROC). All the scores were analyzed to outcome the correlation between RTS, PHI, STM and ISS by SPSS and calculate the correlation degrees.

Results:

For death, the AUC of three groups reflected as 0.702(95% confidence interval 0.697 to 0.707), 0.762(95% confidence interval 0.757 to 0.766) and 0.832(95% confidence interval 0.828 to 0.836) ($P < 0.0001$ all above). The correlation coefficient between RTS and ISS is -0.048, correlation coefficient between PHI and ISS is 0.076 and correlation coefficient between STM and ISS is -0.077.

Discussion & Conclusions:

As an accurate triage method, Sacco Triage Method is more effective to be used in mass casualty incident which offers operational advantages. It is a more valuable way than RTS and PHI for evaluation of death risk assessment of the earthquake group injured patients. STM and PHI are more related to ISS compared with RTS but the correlation coefficients are low.

#18236 : Side Effects from Opioids Used for Acute Pain after Emergency Department Discharge

Authors:

Raoul Daoust (1), Jean Paquet (2), Alexis Cournoyer (3), Eric Piette (3), Judy Morris (3), Justine Lessard (3), Veronique Castonguay (4), Williamson David (5), Jean-Marc Chauny (6)

1. Emergency department, Université de Montréal, Montréal, CANADA
2. Emergency department research center, Hôpital Sacré-Coeur de Montréal, Montréal, CANADA
3. Emergency department, Université de Montréal, Montreal, CANADA
4. Family and Emergency Medicine Department, Université de Montréal, Montreal, CANADA
5. Intensive care , Hôpital Sacre-Coeur de Montreal, Montreal, CANADA
6. Emergency department, Hôpital Sacré-Coeur de Montréal, Montréal, CANADA

Keywords: side effects, opioid, acute pain

Abstract :

Objective

Opioid side effects are common when treating chronic pain. However, the frequency of opioid side effects has rarely been examined in acute pain conditions, particularly in a post emergency department (ED) setting. The objective of this study was to evaluate the short-term incidence of opioid-induced side effects (constipation, nausea/vomiting, dizziness, drowsiness, sweating, and weakness) in patients discharged from the ED with an opioid prescription.

Methods

This is a prospective cohort study of patients aged ≥ 18 years who visited the ED for an acute pain condition (≤ 2 weeks) and were discharged with an opioid prescription. Patients completed a 14-day diary assessing daily pain medication use and side effects.

Results

We recruited 386 patients with a median age of 54 years (IQR:43-66); 50% were women. During the 2-week follow-up, 80% of patients consumed opioids. Among the patients who used opioids, 79% (95%CI:75-83) reported side effects compared to 38% (95%CI:27-49) for non-users. Adjusting for age, sex, and pain condition, patients who used opioids were more likely to report constipation (OR:7.5; 95%CI:3.1-17.9), nausea/vomiting (OR:4.1; 95%CI:1.8-9.5), dizziness (OR:5.4; 95%CI: 2.2-13.2), drowsiness (OR:4.6; 95%CI:2.5-8.7), and weakness (OR:4.2; 95%CI:1.6-11.0) compared to non-users. A dose-response trend was observed for constipation but not for the other side effects. Nausea/vomiting (OR:2.0; 95%CI:1.1-3.6) and dizziness (OR:1.9; 95%CI:1.1-3.4) were more often associated with oxycodone than with morphine.

Conclusion

As observed for chronic pain treatment, side effects are highly prevalent during short-term opioid treatment for acute pain. Physicians should inform patients about those side effects and should consider prescribing laxatives.

Trial Registration / Funding Information (only) :

Funded by "fonds de recherche des urgentistes de HSCM"

#18237 : Relationship between acute pain trajectories after an emergency department visit and chronic pain.

Authors:

Raoul Daoust (1), Jean Paquet (2), Alexis Cournoyer (3), Eric Piette (3), Judy Morris (3), Gilles Lavigne (4), Justine Lessard (3), Jean-Marc Chauny (5)

1. Emergency department, Université de Montréal, Montréal, CANADA
2. Emergency department research center, Hôpital Sacré-Coeur de Montréal, Montréal, CANADA
3. Emergency department, Université de Montréal, Montreal, CANADA
4. Faculté de médecine dentaire, Université de Montréal, Montreal, CANADA
5. Emergency department, Hôpital Sacré-Coeur de Montréal, Montréal, CANADA

Keywords: Chronic pain, trajectory analysis

Abstract :

Objective: We assessed if certain profiles of pain intensity evolution over the 14-day after emergency department (ED) discharge are predictive of chronic pain 3 months later.

Methods: This is a prospective cohort study of 18 years and older ED patients who consulted for an acute (≤ 2 weeks) pain condition that were discharged with an opioid prescription. Patients completed a 14-day diary in which they listed their daily pain intensity (0-10 numeric rating scale). Three months post-ED visit, participants were questioned by phone about their current pain intensity.

Results: A total of 305 participants remained in the study at 3 months, 49% were women, and a mean age of 55 ± 15 years. Six distinct acute pain intensity trajectories were identified post-ED discharge; two linear ones with moderate or severe pain during follow-up and four trajectories with mild or no pain at the end of the 14 days (low final pain trajectories). Twelve percent (11.9; 95%CI: 8.2-15.4) of patients had chronic pain at the 3-month follow-up. Controlling for age, sex, and pain condition, patients with moderate or severe pain trajectories and those with only a severe pain trajectory were respectively 5.1 (95%CI: 2.2-11.8) and 8.2 (95%CI: 3.4-20.0) times more likely to develop chronic pain 3 months later.

Conclusion: This study showed that moderate or severe acute pain intensity trajectories during a 14-day post-ED follow-up were highly associated with chronic pain 3 months later. These pain intensity trajectories could be useful for an early identification of patients at risk of chronic pain.

Trial Registration / Funding Information (only) :

Funded by "fonds de recherche des urgentistes de HSCM"

#18239 : High-flow nasal cannula versus low oxygen flow therapy in weaning from non-invasive ventilation in patients with acute respiratory failure due to COPD exacerbation: a subICU experience.

Authors:

Francesca Nori (1), Stefano Geniere Nigra (2), Marina Buda (3), Giacinto Pizzilli (4), Annalisa De Silvestri (5), Patrizia Cuppini (1), Alessandro Valentino (1)

1. Dipartimento Chirurgico e Grandi Traumi,, M. Bufalini Hospital, Cesena, Italy, Cesena, ITALY
2. Dipartimento chirurgico e grandi traumi, M. Bufalini Hospital, Cesena, Italy, Cesena, ITALY
3. DEA, S. Maria delle Croci Hospital, Ravenna, ITALY
4. Intensive Care Unit, M. Bufalini Hospital, Cesena, Italy, Cesena, ITALY
5. Servizio di Epidemiologia Clinica e Biometria, Fondazione IRCCS Policlinico S. Matteo, Pavia, Italy, Pavia, ITALY

Keywords: High-flow nasal cannula, weaning, non-invasive ventilation, acute respiratory failure, COPD exacerbation

Abstract :

Background:

In patients with acute respiratory failure (ARF) due to chronic obstructive pulmonary disease (COPD) exacerbation, non-invasive ventilation (NIV) is strongly recommended as first line treatment able to improve pH, reduce respiratory rate, prevent immediate intubation and improves survival. In stable COPD patient the rationale of use of high-flow nasal cannula (HFNC) is providing warm and humidified air, reducing transcutaneous carbon dioxide (CO₂) and decreasing work of breathing.

Nevertheless, weaning protocol after NIV are not so well defined.

In this study we observed the difference between the use of HFNC versus low oxygen flow treatment (LOFT) in patients with COPD exacerbation after a period of NIV. The aim was to determine if HFNC reduces the need to return to NIV compared to LOFT during the weaning period. In addition, we observed how vital signs and blood gases changes along the recovery time.

Methods:

This is a prospective randomized study. We enrolled 28 patients with ARF due to COPD exacerbation treated with NIV from January 2018 to May 2018. NIV started in emergency room (ER) and when NIV support ended, patients were randomized 1:1 between HFNC and LOFT, based on the availability of HFNC (AIRVO® 2 Fisher and Paykel) at the time of randomization.

HFNC therapy was applied at a flow of 60 L/min and minimal FiO₂ to maintain an oxygen saturation of 91% or more. LOFT was applied through nasal cannula or face mask to reach the same target.

SO₂ and pO₂ were significantly higher in HFNC than in LOFT group (p=0.030 and p=0.054 respectively). Besides, respiratory rate was significantly lower at 60 m in the HFNC group compared to LOFT group (p=0.0173).

Results:

Eight (29%) of all patients returned to NIV, 1(8%) in the HFNC and 7 (47%) in the LOFT group respectively (HR 7.5 – p=0.060). Patients in the LOFT group returned to NIV sooner than those in the HFNC group.

Conclusions:

As main result, we observed that HFNC reduces the need to return to NIV during the weaning period in patients with ARF due to COPD exacerbation. Regarding the time between the two cycles of NIV, we reported a shorter time in patients treated with LOFT. This is of great value in order to assess standard protocol of weaning from NIV in patient with COPD exacerbation, in which often the length of stay is affected by the need of prolonged ventilation. Ethical approval and informed consent are not needed due to the type of study.

#18240 : Depression as the most frequent cause of suicide attempts in Poland**Authors:**

Michał Dudek (1), Robert Kijanka (2), Małgorzata Rak (3), Piotr Białoń (2)

1. Emergency Medicine Specialist, Medical University of Lodz / Faculty of Health Sciences, Łódź, POLAND
2. Paramedic, University of Białsko-Biała / Faculty of Health Sciences, Bielsko-Biała, POLAND
3. Emergency Medicine Specialist, Nofer Institute of Occupational Medicine in Łódź / Department of Toxicology, Łódź, POLAND

Keywords: depression, suicide attempts

Abstract :

Title:

Depression as the most common cause of suicide attempts in Poland

Keywords:

depression, suicide attempt

Background:

Depression is a growing global health problem. According to World Health Organization forecasts, by 2020 it will be the second most common disease in the world and by 2030 it will be the most common one. Currently, all around the globe there are about 350 million people suffering from depression.

Material and methods:

A retrospective analysis was carried out based on police data concerning suicide attempts and data collected by the National Institute of Public Health – National Institute of Hygiene concerning persons treated outpatient for mental disorders in the years 1997-2010.

Results:

The results of the research indicate a correlation between the number of psychiatric disorders and the number of suicides. According to the statistics, almost 80% of suicide attempts are committed by people with previous psychiatric disorders, among which depression was predominant.

Discussion and Conclusion:

The incidence of depression among European citizens is estimated at 6-7%. At the same time, it is estimated that as many as/ up to 41% of the global population is likely to suffer from depression during their lifetime. Among Polish residents, 3% of the working age population has suffered from a depression, which means that 766,000 people have experienced a depressive episode during their lifetime.

According to Eurostat data, the suicide rate in Poland was 15.6/100.000, which is the sixth highest rate among the European countries.

Title:

Depression as the most common cause of suicide attempts in Poland

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According to Eurostat data, the suicide rate in Poland was 15.6/100.000, which is the sixth highest rate among the European countries.

#18241 : Participant Survey on Off-the-job-training of Resuscitation using Text Mining in Japan**Authors:**

Mizuho Ii (1), Hiroshi Okudera (2), Masahiro Wakasugi (3), Toshiomi Kawagishi (4), Tomoya Hatano (4), Tadaki Shibuya (4), Nozomu Seki (4), Tomomi Yasuda (5)

1. Assistant Professor, Department of Nursing, Graduate School of Medicine and Pharmaceutical Science, University of Toyama, TOYAMA, JAPAN
2. Professor, Department of Crisis Medicine and Patient Safety, Graduate School of Medicine and Pharmaceutical Science, University of Toyama, TOYAMA, JAPAN
3. Associate Professor, Department of Crisis Medicine and Patient Safety, Graduate School of Medicine and Pharmaceutical Science, University of Toyama, TOYAMA, JAPAN
4. Resident, Department of Crisis Medicine and Patient Safety, Graduate School of Medicine and Pharmaceutical Science, University of Toyama, TOYAMA, JAPAN
5. Professor, Department of Nursing, Graduate School of Medicine and Pharmaceutical Science, University of Toyama, TOYAMA, JAPAN

Keywords: Participant Survey, Text Mining, Off-the-job-training, Emergency Medicine, Resuscitation

Abstract :**Introduction**

In emergency care, various off-the-job-training programs have been developed and introduced because there are many types of diseases treated by various jobs. As of April 2018, there are 56 courses that can be taken in Japan, based on certain criteria such as the attendance record.

Material and Method

There are several evaluation methods in simulation trainings. Recently, Kirkpatrick evaluation (2016) has been used as an evaluation model for training. The Kirkpatrick evaluation, consisting of four levels, has been applied and revised to training in various areas. Although this model is able to evaluate the entire training, it does not reflect the training effect for the individual immediately. The Off-the-job-training course is not intended to fully complete skills and knowledge, but it is important that it provides an opportunity for continuing adult learning. Therefore, we developed simple a set of questionnaire of participant survey completed immediately after trainings. Furthermore, we analyzed free description of each participant using Text Mining Studio (NTT DATA) with Artificial Intelligence to improve details of the course. We applied the new Participant Survey system for Immediate Cardiac Life Support (ICLS) as basic one-day resuscitation training in Japan.

Result

We applied the new Participant Survey system for Immediate Cardiac Life Support (ICLS) as basic one-day resuscitation training in Japan. Various results will be presented for discussion.

Trial Registration / Funding Information (only) :

Department of Crisis Medicine and Patient Safety, Graduate School of Medicine and Pharmaceutical Science, University of Toyama

#18242 : The signaling pathway of κ -opioid receptor in ischemia-reperfusion cardiac myocytes.**Authors:**

Yi Shan (1), Jian Wan (2), zhaofen Lin (1), Wenfang Li (1), Lixue Wu (1)

1. Shanghai Changzheng Hospital, None, Shanghai, CHINA
2. Shanghai Pudong new area people's hospital, None, Shanghai, CHINA

Keywords: signaling pathway, kappa opioid receptor, ischemia, reperfusion

Abstract :

Objective The role of kappa opioid receptor (κ -OR) in limiting postresuscitation myocardial dysfunction remains unclear. **Methods** Ischemia/reperfusion (I/R) were induced in H9C2 cardiomyocytes, and randomized into control group, I/R group, I/R+ κ -OR inhibition group and I/R+ κ -OR over-expression group. κ -OR adenovirus vector was designed and constructed, the highest inhibition and over-expression efficiency of adenovirus vector was selected to infect I/R cardiomyocytes. The cell viability, mPTP opening and apoptosis were detected, the expression and activity of κ -OR were detected, and signaling pathways downstream of κ -OR, including PI3K/Akt and ERK1/2 were also detected. The expression and activity of κ -OR as well as PI3K/Akt and ERK1/2 were detected after GRK3 was inhibited by antagonist Cmpd101. **Results** 1. The cell viability, mPTP opening and apoptosis ratio were decreased after I/R, but significantly improved in I/R+ κ -OR over-expression group. 2. The expression of phosphorylated ERK and phosphorylated AKT in I/R+ κ -OR over-expression group were significantly increased in compare with I/R group. 3. The protective effects of κ -OR and PI3K/Akt and ERK1/2 signaling pathway activation on postresuscitation myocardial dysfunction were attenuated by GRK3 inhibition. **Conclusions** κ -OR activation could improve ischemia-reperfusion injury in cardiac myocytes through ERK1/2 and PI3K/Akt signaling pathway. Inhibition of GRK3 could block the protective effects of κ -OR on myocardial function.

Trial Registration / Funding Information (only) :

NFSC No.81201445

#18243 : The neutrophil-to-lymphocyte ratio is associated with bacteremia in elderly patients with urinary tract infections visiting the emergency department**Authors:**

Hyunsoon Kim (1), Seon-hee Wu (1)

1. , none, Incheon, KOREA

Keywords: neutrophil-to-lymphocyte ratio, bacteremia, elderly, urinary tract infections, emergency department

Abstract :**The neutrophil-to-lymphocyte ratio is associated with bacteremia in elderly patients with urinary tract infections visiting the emergency department**

Abstract

Purpose

We evaluated the diagnostic utility of the neutrophil-to-lymphocyte ratio (NLR) in terms of identifying bacteremia in elderly patients with urinary tract infections (UTIs) visiting the emergency department (ED).

Methods

A total of 479 patients admitted with UTIs via the ED between January 2010 and December 2015 were retrospectively reviewed. All were aged ≥ 65 years. We recorded age, sex, co-morbidities, body temperature, clinical findings, and initial laboratory results [the white blood cell (WBC) count, NLR, and levels of serum C-reactive protein (CRP) and blood urea nitrogen (BUN)].

Results

UTI with bacteremia was identified in 186 (38.8%) elderly patients. The NLR and the CRP, BUN, and creatinine levels were significantly higher in the bacteremia than in the non-bacteremia group ($p < 0.001$, $p = 0.016$, $p = 0.008$, and $p = 0.011$ respectively). The area under the curve (AUC) for the NLR was 0.624 (95% CI = 0.579–0.668, $p < 0.001$) and the cutoff 9.0 (sensitivity 74.2, specificity 49.2%). was 0.634 (95% CI = 0.578–0.691). On multivariate analysis, the proportions of patients with NLR ≥ 9 and fever 39° C differed significantly between the two groups (OR 2.43, OR 2.75: $p < 0.001$, $p < 0.001$ respectively).

Conclusion

The initial NLR and high fever reliably predicted bacteremia in elderly patients with UTI visiting the ED.

#18244 : Outcomes of intra-arterial thrombectomy in acute ischemic stroke: direct transport versus transfer from another hospital**Authors:**

yenju Chen (1), Daming Chen (1), Chihyu Chen (1), Tai-Yi Hsu (1), Weikung Chen (1)

1. emergency medicine, China medical university hospital , Taichung, TAIWAN

Keywords: ischemic stroke, thrombectomy, transport, outcome

Abstract :**Background**

There had recently been a surge in published studies documenting the effectiveness of mechanical intra-arterial thrombectomy (IA) as a treatment for patients with acute ischemia strokes(AIS).This study aim to identify whether there is benefit to direct transport patients with AIS to hospital that be able to provide IA

Methods

We retrospectively recruited all patients receiving IA as the treatment for AIS from January 2016 to December 2018. Neurologist was consulted for all AIS patients . IA criteria including 1. within 8 hours of the time last known to be well for anterior circulation stroke; within 24 hours of the time last known to be well for posterior circulation stroke,2. Computed tomography angiography demonstrated proximal large vessel occlusion,3. National Institutes of Health Stroke Scale (NIHSS) ≥ 8 or ≤ 30 .Patients were divided into two groups: direct transport to our hospital or transfer from another hospital.The primary outcome of this study was the time since symptoms onset until the time of receiving IA. Our secondary outcomes were NIHSS 24 hours posttreatment , on discharge and Modified Rankin Scale (mRS) on discharge, 1 month follow up, 3 month follow up.

Results

In total, 254 patients were enrolled into this study after excluded those who met the aforementioned exclusion criteria. The majority was males (59.84%) and the transfer group had 148 (0.58) cases. There was no statistically significant in time between symptoms onset to IA between two groups. In the T- test analysis , there was statistically significant difference in NIHSS 24 posttreatment between these two groups($p = 0.002$).However, there were no significant difference in NIHSS on discharge in t- test analysis ,or mRS on discharge or further follow-up in chi-square test analysis .

Conclusions

In this retrospective study comprising 254 AIS patients receiving IA, we found there is no difference in NIHSS or mRS between those transferred from another hospital and those who visited our hospital directly.

#18245 : A retrospective cohort study of the relationship between the number of tablets taken and the strength of the intent to commit suicide in patients deliberately overdosing.

Authors:

Takefumi Tsunemitsu (1), yuki Kataoka (1), Masaru Matsumoto (1), Takao Suzuki (1)

1. , hyogo prefectural amagasaki general medical center, amagasaki, JAPAN

Keywords: drug overdose, suicide attempt, psychiatric disease, emergency medical service

Abstract :

[Objective] It is unclear whether the number of tablets taken can be used as a judgment factor when evaluating the mental state of patients who overdose drugs deliberately. We examined the relationship between the number of tablets taken and the strength of intent to commit suicide.

[Patients and methods] We performed a single center retrospective cohort study from July 2015 to March 2018. We analyzed adult patients who were overdosed for self-harm admitted to our emergency medical center in Japan. Exposure was the number of tablets taken and cut off with 50 tablets and 100 tablets. The outcomes were the strength of intent to commit suicide determined by the need of transferring to a psychiatric hospital. Patients who needed to transfer to a psychiatric hospital were assigned to the group who had strong intent to commit suicide and others were assigned to the group who didn't have strong intent to commit suicide. Psychiatrists determined if a transfer was necessary. Logistic regression analysis was used for adjustment of covariates, and a two-sided test $p < 0.05$ was taken as the significance level.

[Results] 140 patients were included in this study, 32 men (23%), median age 37 (interquartile range (IQR): 27.00-48.25), median total drug dose 66 tablets (IQR: 40.00-116.75). There were 22 patients (16%) who were determined to require continuous hospitalization at a psychiatric hospital, that is, considered to have strong intent to commit suicide. The multivariate analysis of the 3 groups divided by the number of tablets taken, compared with the group of less than 50 tablets, the odds ratio of the group of 50 to 100 tablets and the group of 100 or more is 2.93 (95% CI: 0.59 to 14.40) and 7.46 (95% CI: 1.69-33.10) respectively.

[Conclusion] It was suggested that the number of tablets taken may be related to the strength of intent to commit suicide. Patients who take more than 100 tablets are likely to need psychiatric treatment and should be carefully evaluated on their mental assessment, such as giving them the opportunity to be examined by a psychiatrist during hospitalization.

#18248 : Assessment of overdiagnosis and overtreatment in emergency department from three recommendations Choosing Wisely: a French multicentric retrospective study**Authors:**

Raquel TENA SEMPERE (1), Viet Thi TRAN (2), Youri Yordanov (3), Anthony CHAUVIN (4)

1. SAU/SMUR, CHI POISSY, Poissy , FRANCE
2. , Centre d'épidémiologie clinique - Hôpital Hôtel-Dieu (AP-HP), 1 place du Parvis Notre-Dame, 75004 Paris Centre de Recherche Épidémiologie et Statistique Sorbonne Paris Cité (CRESS-UMR1153) Inserm / Université Paris Descartes, Paris, FRANCE
3. SAU/SMUR, Hopital Saint Antoine , Paris, FRANCE
4. SAU/SMUR, Lariboisière, Paris, FRANCE

Keywords: choosing wisely, emergency medicine, overdiagnosis, overtreatment.

Abstract :

Introduction : Choosing wisely (CW) is an international initiative to avoid overdiagnosis and overtreatment. In partnership with professional societies, CW develops and identifies recommendations of potentially avoidable prescriptions. We evaluated the number of avoidable examinations or treatments prescribed in 3 Emergency Departments (ED) in Ile de France Region, using 3 CW recommendations. Our hypothesis was that, in France, the percentage of potentially avoidable prescriptions was around 20%, as described in the literature. Our first aim was to evaluate the prescription of a potentially low value test in a ED. Thus, our hypothesis was that a potentially avoidable prescriptions represented a loss of patient time in the ED.

Methods: This was a multi-centric retrospective review of medical record for patients who visited the ED of two academic hospitals and one regional hospital between the 1st of January and the 31st of December 2016. We examined a random sample of patients aged 15 to 65 years old, who consulted either for non traumatic low back pain, minor head injury or acute sinusitis. For each patient we extracted from the medical record the medical history and clinical examination to assess whether they should have had an exam prescription or a treatment according to CW recommendations. We also assessed whether patients were actually prescribed lumbar imaging, brain imaging or antibiotic therapy to determine the number of potentially avoidable prescriptions. Data are described with median and interquartile (IQR) for quantitative variables and number (%) for qualitative variables.

Results: A total of 1601 patients [43% of women] were included in the study. The median age was 38 years old IQR [28-49]. Consultation motives were low back pain, minor head injury or acute sinusitis for 710 (44%), 679 (43%), and 211 (13%) cases, respectively. A total of 549 (82%), 514 (76%) and 149 (71%) patients with low back pain, head trauma and sinusitis were treated in accordance with the CW recommendations, respectively.

For 70 (10%), 57 (8%) and 39 (8%) patients with low back pain, head trauma and sinusitis, respectively, a prescription could be considered as low value care and could have been avoided. These potentially avoidable prescriptions significantly increased length of stay in the ED for these patients: the subjects for whom an imaging exam was not indicated but obtained, stayed approximately 5.2h IQR [3.2-9.5], and subjects for whom an exam was not indicated and non obtained stayed 4.3h IQR [2.1-6.8] ($p < 0.03$).

Discussion & Conclusions: Approximately 10% of patients who consult in ED for non-traumatic back pain, minor head injury or acute sinusitis received a potentially avoidable prescription according to the CW criteria. This is the first study in France to evaluate over-diagnosis and over-treatment in the ED, using CW recommendations. Other international studies used administrative database, with more important number of subjects, and the avoidable prescriptions were between 4-40%.

Reducing the avoidable prescriptions in the ED improves the patients' quality of life and the length of a stay in the ED.

Trial Registration / Funding Information (only) :

Trial Registration: non clinical work. Funding: "This study did not receive any specific funding."

#18249 : Prehospital cardiopulmonary resuscitation outcomes in Latvia 2018: descriptive retrospective study.**Authors:**

Alise Lazdina (1), Dita Cellere-Celerte (1)

1. State Emergency Medical Service of Latvia, State Emergency Medical Service of Latvia, Riga, LATVIA

Keywords: resuscitation, pre-hospital, cardiac arrest, CPR

Abstract :**Conclusions:**

1. Medical records of 1 275 patients with cardiopulmonary resuscitation (CPR) attempted by State Emergency Medical Service of Latvia (SEMS) in 2018 were analyzed – 843 (66.1%; 95%CI 63.5-68.7) were men and 432 were women (33.9%; 95%CI 31.3-36.5).
2. Average population age was 64.1 years (SD 17.6); for women it was 70.4 (SD 17.8) and men 60.9 (SD 16.5).
3. Average SEMS response time from the end of conversation with dispatcher up to arrival at patient was 10.7 minutes (SD 7.2) – in urban areas it was 8.6 minutes (SD 5.8) and rural areas 15.8 (SD 7.8). Compared to years 2012 and 2013, average response time has decreased by 1 minute which can be explained by changes in work organization and information systems.
4. Most common call reasons were “Unconscious, breathing” (n=258; 20.2%; 95%CI 18.1-22.5), “Unconscious, not breathing” (n=171; 13.4%; 95%CI 11.7-15.4), “Potential unconsciousness” (n=142; 11.1%; 95%CI 9.5-13.0), “Breathing problems” (n=100; 7.8%; 95%CI 6.5-9.5), “Chest pain, breathing problems” (n=100; 5.0%; 95%CI 4.0-6.4).
5. Residence was the most common place of cardiac arrest (n=913; 71.6%; 95%CI 69.1-74.0), public place in 21.9% of cases cardiac (n=279; 95%CI 19.7-24.2), other (e.g., health care institution, long-term care facility) in 6.5% of cases (n=83; 95%CI 5.3-8.0).
6. In 81.8% of cases presumed cause of cardiac arrest was cardiac (n=1043; 95%CI 79.6-83.8), other non-cardiac in 7.0% of cases (n=89; 95%CI 5.7-8.5), respiratory in 5.9% of cases (n=75; 95%CI 4.7-7.3) and traumatic in 5.3% of cases (n=68; 95%CI 4.2-6.7).
7. First monitored cardiac rhythm in 51.1% of cases was pulseless electrical activity (n=652; 95%CI 48.4-53.9), ventricular fibrillation and ventricular tachycardia in 17.4% of cases (n=222; 95%CI 15.4-19.6) and asystole in 31.5% of cases (n=401; 95%CI 29.0-34.1).
8. In 36.3% of cases cardiac arrest was bystander witnessed (n=463; 95%CI 33.7-39.0), SEMS ambulance team witnessed in 36.1% of cases (n=460; 95%CI 33.5-38.6) and unwitnessed in 27.6% of cases (n=352; 95%CI 25.2-30.1).
9. Bystander CPR was performed in 36.4% of cases (n=297; 95%CI 33.2-39.8) prior to the arrival of ambulance team. Bystander CPR rate has raised in 2018 as in 2013 it was 32.6%.
10. Return of spontaneous circulation was achieved in 26.8% of all patients (n=342; 95%CI 24.5-29.3). Spontaneous circulation up to hospital admission was maintained for 22.8% (n=291; 95%CI 20.6-25.2) patients.
11. Factors associated with better survival to hospital admission were initial shockable rhythm (OR=5.8; 95%CI=4.2-7.9; p<0.0001), bystander CPR (OR=1.4; 95% CI=0.97-1.99; p=0.07), crew witnessed arrest (OR=1.9; 95%CI=1.5-2.5; p<0.0001), cardiac arrest at public place (OR=1.7; 95% CI=1.2-2.3; p=0.001), age under 65 years (OR=1.8; 95% CI=1.4-2.3; p<0.0001) and living in urban area (OR=1.3; 95% CI=1.0-1.8; p=0.06).
12. Dispatch:telephone CPR wasn't associated with better survival to hospital admission (OR=1.0; 95%CI=0.6-1.6; p=0.9) but results were not statistically significant.
13. Survival to discharge will be analyzed up to October 2019 when data is received from hospitals.

#18250 : Accuracy of TRISS and RISC II in predicting 30-day mortality in major trauma patients in Hong Kong: Retrospective cohort study**Authors:**

Kevin KC Hung (1), Cosmos Lai (2), Janice HH Yeung (3), Marc Maegele (4), Colin A Graham (1)

1. Accident and Emergency Medicine Academic Unit, Chinese University of Hong Kong, Hong Kong, CHINA
2. Emergency Department, Prince of Wales Hospital, Hong Kong, HONG KONG
3. Trauma & Emergency Centre, Prince of Wales Hospital, Hong Kong, CHINA
4. Cologne-Merheim Medical Center (CMMC), University Witten-Herdecke (UWH), Cologne, GERMANY

Abstract :

Background:

Hong Kong has established an inclusive trauma system since the early 2000, and local trauma registries have been using TRISS methodology for audit and benchmarking purposes since its establishment. TraumaRegister DGU in Germany devised its own probability of survival model using data from its 900 trauma centres. RISC II was demonstrated to be superior to TRISS in Germany, and includes pre-trauma ASA, pupil size and reactivity, pre-hospital CPR and laboratory results including INR, base deficit and haemoglobin on top of those parameters used in TRISS. The aim is to compare the predictive ability of the probability of survival calculated using TRISS and RISC II for major trauma patients in Hong Kong.

Methods:

This was a retrospective cohort study using data from all five trauma centres in Hong Kong. Adult major trauma patients (ISS>15) from January 2013 to December 2015 were extracted from the five respective trauma registries. Parameters for TRISS was collected prospectively, and those extra data points in the RISC II scores were retrieved retrospectively. The primary outcome was the area under the ROC curve for TRISS and RISC II using the expected and observed 30-day mortality. Probabilities of survival (Ps) were derived by TRISS with MTOS coefficients and RISC II methodology. The Hosmer-Lemeshow goodness of fit test was used to test for the calibration of the model. Subgroups analyses investigated the performance of TRISS and RISC II for the mechanism of injury and age>80. Ethics approval has been obtained from the local review board.

Results:

1864 patients were recruited during the study period. 67.2% was male and the median age was 60 years old. The median ISS was 24, with 40% of patients with ISS over 25. Low fall was the most common mechanism of injury, with head and neck being the most commonly injured body region. The 30-day mortality was 22.4%. The expected mortality was 20.0% using TRISS and 19.7% from RISC II. The AUC was 84.8% (CI 82.7 to 86.9) and HL test 63.2 ($p<0.001$) for TRISS. RISC II yielded a superior AUC of 89.6% (CI 88.1 to 91.2) and HL test of 78.9 ($p<0.001$).

Subgroup analyses showed that both score performed worse for ISS 25 or above (AUC: TRISS 80.4%, RISC II 87.7%), age 80 or above (AUC: TRISS 80.6%, RISC II 82.9%), low falls (<2m) (AUC: TRISS 81.7%, RISC II 85.5%), and significant head or neck injury (AIS 3 or above) (AUC: TRISS 83.1%, RISC II 87.7%). RISC II had performed significantly better than TRISS for all subgroups, except in age 80 or above and low falls.

Conclusion:

RISC II was superior to TRISS in predicting the 30-day mortality for Hong Kong adult trauma patients with ISS >15. RISC II also significantly better than TRISS in all subgroups, except in age 80 or above and low falls. These points should be taken note when performing future audit or benchmarking exercises.

Trial Registration / Funding Information (only) :

This study did not receive any specific funding.

#18252 : Results of an in-hospital nerve agent decontamination and stabilization exercise**Authors:**

Ruben De Rouck (1), Michel Debacker (1), Rafael Kneuts (2), Sam Van Hove (2), Jaen Vaes (3), Patrick Van Droogenbroeck (4), Ives Hubloue (1)

1. Research Group on Emergency and Disaster Medicine, Vrije Universiteit Brussel, Brussels, BELGIUM
2. Medical Student, Vrije Universiteit Brussel, Brussels, BELGIUM
3. Military Hospital Queen Astrid, Belgian Defence, Brussels, BELGIUM
4. Emergency Department, UZ Brussel, Brussels, BELGIUM

Keywords: VX, Nerve Agent, Decontamination, Hospital Reception, Simulation exercise, CBRNe,

Abstract :

Recent reports of organophosphate intoxications indicate the need of hospital preparedness for CBRNe events. Lessons learned from the 1995 Tokyo Sarin attack underline the need for adequate triage, respiratory support, antidotes, decontamination and protection of healthcare personnel. This stabilization and decontamination process requires expensive materials, specialized knowledge and frequent training. To our knowledge, there are only published studies on certain subsections of this stabilization process. All-inclusive real-life data is unavailable in the literature.

In Belgium, the Armed Forces operate a specialized prehospital CBRNe Mobile Medical Team (CBRNe MMT) consisting of 3 paramedics, a doctor and a nurse. This team is trained in prehospital stabilization of contaminated victims while wearing personal protective environment (PPE) clothing. The purpose of this MMT is forward medical stabilisation in a potentially vapour contaminated area, before patients undergo decontamination. They can either be deployed at the disaster site or at a local hospital receiving contaminated victims.

In order to estimate the capacity of this approach, a real-life decontamination exercise was designed modeling a fictitious VX attack. The exercise consists of the arrival of 3 waves of 2 victims in a contaminated ambulance driven by paramedics in PPE. All three waves have similar parameters and treatment requirements. The victims were triaged at the disaster site and consisted of 1 Immediate (red) victim and 1 Minimal (green) victim. Victims are unloaded straight in a forward medical post operated by the CBRNe MMT, stabilized and then guided to a disrobing area and a wet decontamination unit, spanning a distance of 30 meters.

The immediate victim was modelled using a mannequin and needs stabilization by the CBRNe MMT. It requires intubation, oxygen therapy, intramuscular antidote application and intra-osseous access (including local powdered decontamination). The goal of this treatment is stabilization, so the victim can survive decontamination and receive further in-hospital care without risks to hospital personnel. The ambulant victim receives the same antidotes by intramuscular auto-injector and is guided through the disrobing and showering process by doctors and nurses in PPE.

Total duration (and 95% CI in brackets) was for T1 victims on average 15m12s (+/- 6m48s). The average duration was 39s (+- 13s) for unloading, 7m12s (+- 3m8s) for stabilization, 2m3s (+- 1m42s) for disrobing and 5m19s (+- 1m45s) for wet decontamination. Total duration (and 95% CI in brackets) was for the T3 victims on average 5m50s (+/- 2m39s). Included in this are unloading 17s (+- 7s), 1m41 s (+-5s) for stabilization, 56s (+- 21s) for disrobing and 2m45s (+- 2m6s) for decontamination.

This exercise, to our knowledge, is the first to attempt to fully simulate the reception of a contaminated victim stream. Limitations include the limited number of victims, the usage of healthy volunteers and a scenario with a known agent. We believe however that these results are applicable for other hospitals given the short distance between the decontamination unit and ambulance terminal.

Further research should include stress testing of the reception of wild evacuees and including visual and respiratory impairment of ambulant victims in the decontamination process.

Trial Registration / Funding Information (only) :

Training materials were provided by the Brussels University Hospital (UZ Brussel) and the Military Hospital Queen Astrid.

#18254 : The utility of noninvasive nasal positive pressure ventilators for ARDS in near drowning

Authors:

Tae Hoon Kim (1), Seon Tae Kim (1), Jun Ho Hur (1), Jung Woo Choi (1), Yong Hwang (1)

1. Department of Emergency Medicine , College of Medicine, Wonkwang University, Iksan, KOREA

Keywords: Near-drowning, Noninvasive Ventilation, Acute respiratory distress syndrome

Abstract :

Objective: Drowning is the process of experiencing respiratory impairment from submersion or immersion in water which is a crucial public safety problem in the worldwide. An acute lung injury (ALI) or acute respiratory distress syndrome (ARDS) is one of the most common complications in near drowning. The objective of this study is to the feasibility and effectiveness of noninvasive nasal positive pressure ventilation (NINPPV).

Methods: This retrospective study was conducted at tertiary emergency department with hyperbaric oxygen therapy center. Noninvasive nasal positive pressure ventilation was applied with submersion or immersion patients who were more than 18 years older from June 2014 to Oct. 2018. We collected demographic data (age, gender, length of hospital day, and patients' outcome), laboratory data (ABGA, lactate, oxygen saturation, and PO_2/FiO_2 and NINPPV mode), and clinical data (acute lung injury index, complications, and ventilator failure). Statistical analysis was performed using IBM SPSS 20.0 statistics for Window.

Results: Ninety-four patients with the diagnosis of near-drowning were treated. Seventy-two of these patients (76.5%) were successfully treated with noninvasive nasal positive pressure ventilation (NINPPV) without complications. Twenty patients (21.2%) were changed the initial NINPPV to mechanical ventilation mode within 48 hours due to ARDS and acute kidney failure (ARF). Thirty-nine (63.9%) of sixty-one in sea-water near drowning patients were successfully treated with NINPPV. Sea-water drowning patients were more difficult to treat with NINPPV than fresh-water ($p < 0.05$). The most complications were acute pneumonitis with ARDS (18%), five patients (5.3%) who acute kidney failure with MODS had received hemodialysis treatment. A neurological outcome was not different between NINPPV and mechanical ventilation.

Conclusion: Noninvasive nasal positive pressure ventilation would be useful and feasibility at initial treatment for drowning patients.

Authors:

Jun Ho Hur (1), Seon Tae Kim (1), Tae Hoon Kim (1), Jung Woo Choi (1), Yong Hwang (1)

1. Department of Emergency Medicine , College of Medicine, Wonkwang University, Iksan, KOREA

Keywords: Crashing accident, Injury severity score, Weather

Abstract :

Objective: In recent years, there has been an increasing concern in serious crashing accidents on the highway. The purpose of this study is to analyze the affecting factors of serious mass crashes, and injury severity on the highways.

Methods: This retrospective study was conducted at the emergency department of a level I trauma center. We reviewed 858 patients with 238 crashing accidents on the highways from January 2015 to December 2018. We collected demographic data, clinical data, accident factors (time of accident, vehicle type, crashing mechanism, crashing speed), and meteorological data (climates, temperature, weather). Multinomial logistic analysis and ordinal logistic regression was performed using IBM SPSS 20.0 statistics for Window.

Results: The road environmental risk factors were found to be significantly associated with the incidence of crashing accident on the highway. The most common accident locations were tunnel and tunnel exit area, which were 122 cases (51.2%) and 366 injured patients (42.6%). The sport utility vehicle (SUV) had the highest rate of incident shown approximately a 2-fold odds increased rate (OR 2.18 95% CI: 1.28-3.25, $p=0.04$). The severity of injury had shown higher in sedan than any other types of vehicle. Three meteorological risk factors were found to be significantly associated with the severity of injuries crashing accident on the highway. A crashing accident had increased four-fold odds rate on snow, fog, and icy roads (OR 3.89, 95% CI: 1.98-6.33, $p<0.001$).

Conclusions: The injury severity of patients was affected by accidents car types, and accident location. The incidence of crashing accidents was strongly influenced by accident time and fog and snow.

#18256 : Public Knowledge in basic life support maneuvers and attitude towards emergencies in Spain**Authors:**

Esther Gorjón (1), Raúl Sánchez (2), Daniel Barquilla (1), César Fernández (1), Miguel Garvi (3)

1. SUMMA112, SERMAS, Madrid, SPAIN
2. ER, SESCAM, Talavera de la Reina, SPAIN
3. ER, SES, Almendralejo, SPAIN

Keywords: CPR, knowledge, basic life support, Spain

Abstract :

Introduction: out-of-hospital cardiac arrest (OHCA) is a major public health problem. In Spain there are about 15,000 cases per year. The survival with a good neurological status of the OHCA is low, around 10%. Several studies have shown the relationship between the levels of training of citizens, the number of witnesses performing cardiopulmonary resuscitation (CPR) and the survival to the OHCA. The objective of this study was to determine the level of knowledge in basic life support (BLS) maneuvers of the Spanish population and their general attitude towards emergencies.

Methods: Descriptive study of cross-sectional survey by means of randomized sampling. 1,500 telephone interviews were made to subjects 18 years of age and older living in Spain. The sample was selected randomly from an automatic telephone number generator. The questionnaire used was designed specifically for the study. The information was collected by means of a computer-assisted telephone interview (CATI) through a structured and pre-codified questionnaire. Descriptive statistics was used to show the results.

Results: 51.3% of the people surveyed were men, the predominant age was between 35 and 54 years (44.9%), 59.7% were in active labor status and 32.8% had university studies. 75.6% of the population considers the training that Spanish people have in relation to first aid is "insufficient" or "very insufficient". 98.7% of respondents consider "very important" or "important" that citizens have knowledge of first aid. 60.8% of the population does not feel able to respond to a cardiac arrest. Only 41.3% of citizens recognize that they would know how to use an AED in case of need. 34.7% of Spanish people don't know which is the unique European emergency number. 53.8% of the population has not received any training course related to first aid or BLS. 53.6% of citizens believe that caring for a person who has an emergency, without sufficient knowledge, could pose legal problems. 81.6% of the respondents believe that in our country everything is not done so that citizens have adequate training in first aid. 81.7% of the population believes that training in BLS should be initiated in the school (Primary Education and ESO).

Conclusions: Although the knowledge on BLS of the Spanish population and their ability to respond to an emergency situation has increased in the recent years, we are far from other European countries. The implementation of a National Plan of training and awareness in BLS along with public defibrillation programs, telephone CPR and public information and dissemination campaigns could increase the level of knowledge, the ability to respond, the number of witnesses that perform correctly CPR and use an AED, and, with all these things, can increase the survival of cardiac arrest.

Trial Registration / Funding Information (only) :

The study was funded by the Mapfre Foundation

#18260 : BACTERIAL SENSITIVITY and EMPIRICAL TREATMENT of BACTERIEMIA of URINARY ORIGIN

Authors:

Gaëlle BORNÁS CAYUELA (1), Alba HERNÁNDEZ SÁNCHEZ (1), Elena Del Carmen MARTÍNEZ CÁNOVAS (1), Sergio PASTOR MARIN (1), José Andrés SANCHEZ NICOLAS (1), Pascual PIÑERA SALMERON (1)

1. Medicina de Urgencias, HOSPITAL GENERAL UNIVERSITARIO REINA SOFÍA, Murcia, SPAIN

Keywords: Urinary tract infection, bacteremia, antibiotic therapy

Abstract :

Urinary tract infection is the most frequent cause of bacteremia cases (53%). Empiric and early antibiotherapy plays an essential role in the control of the primary focus.

AIMS:

To determine the proportion of cases of urinary infection in the emergency room in which we prescribed correct empirical antibiotic therapy. To know the percentage of cases in which the microorganism responsible for bacteremia with a primary urinary focus is sensitive to the initial antibiotic therapy prescribed.

Cross-sectional descriptive study that included adult patients of both sexes treated in our service on the dates between December 27, 2016 and December 27, 2017. There were 131 people with bacteremia of any origin who were extracted blood cultures. Of these, 70 individuals with bacteremia of urinary origin were selected. The variable chosen was antibiotic therapy prescribed in the emergency department according to the clinical picture. We analyzed if it was performed empirically according to the current guidelines and if it was effective against the responsible bacteria identified by blood culture.

After the analysis of the 70 samples of positive blood cultures in patients with bacteremia of urinary origin, 18.6% were contaminated and the remaining 81.4% showed conclusive results.

Of the latter, 26.3% belonged to patients with acute pyelonephritis. In 60% , correct empirical treatment was administered and it was found that in 66.6% the bacteria identified were sensitive to the initial antibiotic.

There were 10.5% of cases of prostatitis in this study. The antibiotic chosen was ceftriaxone in 66.7% against which there was resistance in 100% of the cases. However, one patient received therapy with ciprofloxacin whose blood culture showed bacterial sensitivity to it.

63.1% had low urinary tract infection as the origin of bacteremia. Appropriate empirical treatment was applied in 77.7% (28 patients): ceftriaxone in 39% , cefuroxime in 19.4% and cefixime in 11.1% . In 75% of the cases the bacterium was sensitive to treatment.

In general, correct empirical treatment of bacteremia with a urinary focus has been performed in 72% of the cases and not adequate in the remaining 28%.

In 66.7% of the conclusive blood cultures, the problem bacterium was sensitive to empirical antibiotherapy.

Trial Registration / Funding Information (only) :

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#18262 : A prediction model for mild traumatic brain injury using prehospital variables**Authors:**

Dae Kon Kim (1), Dae Kon Kim (1), Sang Do Shin (2), Kyoung Jun Song (3), Ki Jeong Hong (2), Young Sun Ro (2), Joo Jung (4), Jung Ho Park (2)

1. Clinical Fellow, Seoul National University Bundang Hospital, Seongnam-Si, KOREA
2. Professor, Seoul National University Hospital, Seoul, KOREA
3. Professor, Boramae Medical Center, Seoul, KOREA
4. Professor, Seoul National University Bundang Hospital, Seungnam-Si, KOREA

Keywords: Traumatic brain injury, prehospital variable, prediction model

Abstract :

Introduction

Traumatic brain injury (TBI) can cause mortality and social burden because of disability. While symptoms of mild TBI are generally transient, sometimes mild TBI can result in persistent brain cognitive impairments. The outcomes of EMS-assessed mild TBI can be diverse from ED disposition to hospital mortality. Adequate assessment and disposition of mild TBI patients from prehospital stage is important for improving outcomes. This study aims to develop and validate prediction model of mild TBI for clinical outcomes in EMS-assessed mild TBI patients using prehospital variables.

Method

This is a multi-center and retrospective data analysis study. Adult mild TBI patients transported by EMS from 2015 to 2018 in Korea were analyzed. Severe head injury, ED visit after 24 hours from injury, prehospital arrest, transfer from other medical facility and unknown outcome was excluded. Total 6,411 patients were enrolled. The primary outcome was ICU admission or in-hospital mortality. The secondary outcome was clinically important outcome (CIO) which is ward admission or death. Prediction models for ICU admission or in-hospital mortality rate and clinically important outcome (Ward admission or death) were constructed at ED admission. After multiple imputation, each imputed dataset was divided into training and validation sets (70% and 30% of patients, respectively). The model was derived from training set by using variables clinically available from prehospital stage and relevant to outcome. The discrimination and calibration were assessed in the training and validation sets by calculating the area under the receiver operating curve (AUROC) and by the Hosmer-Lemeshow (HL) test, respectively. Finally, the performance of our new model was compared to that of RTS variable model.

Results

From the initial 84,046 included patients, final 6,411 patients were enrolled after inclusion and exclusion criteria. Male was 3789 (59.1%) and the most common mechanism was fall (45.4%). ICU admission or in-hospital mortality rate was 3.3%. Clinically important outcome (CIO) was 6.1%. The AUROC for ICU admission or in-hospital mortality and CIO was 0.84 (95% CI, 0.80-0.89) and 0.72 (95% CI, 0.67-0.77), respectively. The HL test for ICU admission or in-hospital mortality and CIO was 11.95 (P=0.153) and 12.88 (P=0.116), respectively. The AUROC of RTS model for ICU admission or in-hospital mortality and CIO was 0.72 (95% CI, 0.69-0.76) and 0.67 (95% CI, 0.66-0.68), respectively. The HL test of RTS model for ICU admission or in-hospital mortality and CIO was 0.342 (P=0.559) and 0.110 (P=0.946), respectively.

Conclusion

This unique prediction model with variables available from the prehospital stage can offer clue for effective patient triage. Our model was superior to RTS model in predicting ICU admission or in-hospital mortality and clinically important outcome at ED.

#18263 : A retrospective descriptive study of the drugs prescribed by patients whose clinical diagnosis is an arrhythmia in the extrahospital setting in the Community of Madrid.

Authors:

ANA MORENO (1), MIRIAM UZURIAGA (2), LUCÍA GONZÁLEZ (1), CRISTINA SÁNCHEZ (1), JAVIER DE ANDRÉS (1), SARA HERNÁNDEZ (1), ANA MARÍA MARTÍN (3)

1. NURSERY, SUMMA 112, MADRID, SPAIN
2. MEDICINE, SUMMA 112, MADRID, SPAIN
3. TECHNICAL, SUMMA 112, MADRID, SPAIN

Keywords: Drugs. Arrhythmias. Summa112. Emergency.

Abstract :

The Emergency Medical Service of Madrid (SUMMA 112) is the outpatient medical emergency service of the Regional Ministry of Health of the Community of Madrid. Its scope of competences includes homes and work emergencies in the city of Madrid and all emergencies in the rest of the Community.

Taking into account all of the above, it was decided to conduct a retrospective descriptive study in the specific period of the first semester of 2017 based on the clinical records of SUMMA 112. There were 3752 clinical records with ICD 9 corresponding to some diagnosis of some type of arrhythmia. It was decided to exploit a sample of 20%, which corresponded to a figure of 750-800 medical records. Finally, data from 827 clinical histories were collected, of which 787 were considered valid, a figure that represented the final N of our analysis. This analysis is intended to describe, in a representative way by the sample size, the medications who were previously taking the appendices for cardiological diseases, to see if they correlated more or not with new episodes. These medications were collected in patients whose clinical diagnosis is an arrhythmia in the Community of Madrid. For this, we requested, first, authorization to the Management and to the Management of the SUMMA 112 and, second, accreditation to the Departments of Clinical Documentation and Information Technology, for the revision of histories and the exploitation of the obtained data.

Data were collected from a total of 787 clinical records with ICD 9 MC corresponding to some type of arrhythmia. 253 (32.14%) of the patients reviewed in our registry, followed previous treatment with beta-blockers, 245 (31.13%) were in treatment with oral anticoagulants, 106 (13.46%) were antiaggregated with ASA and 22 (2, 79%) with clopidogrel. 47 (5.97%) were being treated with chronic antiarrhythmic drugs (flecainide, amiodarone, ...), 101 (12.83%) followed treatment with calcium antagonists and 36 (4.57%) with digoxin. Especially striking is the fact of the large volume of reports where no previous treatment was refilled, 194 (25%), either because it was not followed, or because it simply has not been reflected.

#18264 : Gotta Prescribe 'em All: Quality Improvement Project On Medication Omissions in the Emergency Department**Authors:**

Yagmur Esemen (1), David Shackleton (2)

1. Junior Doctor, West Middlesex University Hospital, London, UK

2. ED Consultant, West Middlesex University Hospital, London, UK

Keywords: Medication errors, emergency medicine, prescription errors, medicine reconciliation, improving care in emergency medicine

Abstract :

Medication errors in the hospital are preventable causes of patient harm and mortality. A recent report (1) analyzing 36 studies revealed that 237 million medication errors occur in the NHS in England every year. Research shows medication errors are most likely to happen in emergency departments and when patients are transferred from one level of care to another (2). A retrospective 10 year study identified omission of medications to be the commonest cause of medication administration errors in acute healthcare setting (3). Failing to prescribe important medications at hospital admission can lead to medication omissions during a patient's hospital stay. This is why, it is important to go through medication reconciliation process and prescribe patients' regular medications early on. This is especially true for essential medications such as anticoagulants, antiparkinsonian medications and insulin.

This project investigated the use of inpatient drug chart in the ED observation unit, a small, short-stay ward within the department. Initial retrospective case note analysis showed that only 36% of patients admitted to the observation unit had undergone medication reconciliation and had the inpatient medication chart filled during admission. This caused omission of important medications and complicated patients' discharges. In several cases, patients developed erratic blood sugar levels due to missing their insulin and needed longer admissions for correction. In one case, an elderly patient developed delirium after missing her regular eye drops.

In order to identify the main issues for the poor prescribing practice and opportunities for improvement, a survey was done amongst the ED doctors. The main issue identified was that ED doctors did not know how to access accurate medication history for confused and unwell patients. In order to address the issue, three main PDSA cycles were completed: 1-Five-minute verbal teaching during morning ward rounds, 2-Placing information leaflets around the department and 3-Presentation at the departmental induction for new doctors. ED doctors were taught to access the Summary Care Record as a tool of obtaining accurate medication histories. Prescription rates improved with each intervention from 36% to 79%. The improvements were found to be sustainable over a longer period.

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Trial Registration / Funding Information (only) :

N.A

#18265 : Tick bites in the emergency department

Authors:

Ovidiu Adrian Bitere (1), Cezar Virgiliu Bologna (2), Iulia Andrei (1), Cristian Ichim (2)

1. Emergency Department, UPU-SMURD, Sibiu, ROMANIA
2. Emergency Department UPU-SMURD, Sibiu ROMANIA, none, Sibiu, ROMANIA

Keywords: tick, bites, incidence

Abstract :

Background.

Ticks are arachnids, usually 3-5 mm long, part of the order Anactinotrichidea, suborder Ixodida. From the 896 species, only 27 live in Romania. Ticks are extensively distributed ectoparasites, infesting mammals, birds, and occasionally reptiles. Ticks are involved in the transmission of numerous pathogens such as bacteria and viruses, but also protozoa. In Romania, there were reported over the years, cases of tick-borne meningoencephalitis, Crimean-Congo hemorrhagic fever, tularemia, Boutonneuse fever, Q fever and Lyme disease.

Through this study, we aim to evaluate the distribution of tick bites by year, months, age and sex.

Materials and methods

We conducted a retrospective, observational study performed on a total of 259.920 patients between 01.01.2015-31.12.2018, at Emergency Room of Sibiu County Emergency Clinical Hospital, from those 2570 (representing 0.98%) adult patients were diagnosed with tick bites.

Results

The distribution by years was: 2015 – 28.83%, 2016 -20.27%, 2017- 18.59%, 2018 -32.29%.

The distribution by months was: January – 0.07%, February – 0.07%, March – 0.97%, April – 8.17%, May – 29.92%, June – 34.82%, July – 15.52 %, August – 5.79%, September – 3.07%, October -1.29%, November – 0.27%, December – 0%.

The distribution by age groups: 18 to 35 years old – 23.73%, 36 to 50 years old – 22.10%, 51 to 75 years old – 47%, over 75 years old -7.15%

The distribution by sex: male -49.96% and female -50.03%.

Conclusions:

The number of tick bites reported a descending course in the first three years of this study (2015 to 2017) and recorded the highest peak during 2018.

The incidence of tick bite cases is the highest during late spring (May) and the beginning and middle of summer (June and July) and has the lowest values in winter months (December, January and February).

From the total number of adult patients, most cases were reported in the age group between 51 and 75 years old.

Regarding the distribution by sex, the values are almost identical, with a prevalence slightly higher in females.

#18266 : Ethanol intoxicated patients in the emergency room**Authors:**

Ovidiu Adrian Bitere (1), Iulia Andrei (1), Cezar Virgiliu Bologa (2), Alexandra Felicia Crișu-Bota (3)

1. Emergency Department, UPU-SMURD, Sibiu, ROMANIA
2. Emergency Department UPU-SMURD, Sibiu ROMANIA, none, Sibiu, ROMANIA
3. Faculty of Medicine 'Victor Papilian' Sibiu ,Romania, none, Sibiu, ROMANIA

Keywords: ethanol, intoxication, trauma,males

Abstract :

Background

The excessive use of alcohol is and has always been a significant public health issue, bringing important social and economic damages to individuals and society, many cases of harmful use of alcohol ending up in an emergency service.

Romania is situated among the countries with the highest alcohol consumption rate per capita both in Europe and worldwide.

Through this study, we aim to evaluate the distribution by year, age, sex and the presence of associated trauma in patients with ethanol intoxication.

Materials and methods

We conducted a retrospective, observational study performed on a total of 259.920 patients between 01.01.2015-31.12.2018, at Emergency Room of Sibiu County Emergency Clinical Hospital, from those 2435 (representing 0.93%) adult patients were diagnosed with ethanol intoxication.

Results

The distribution by year was: 2015 -26.16%, 2016 -20.61%, 2017 -24.31%, 2018 -28.91%.

The distribution by sex was : males -90.48% and females -9.52%

The distribution by age groups was: 18 to 29 years old – 10.1%, 30 to 45 – 27.31%, 46 to 60 – 34.04%, 61 to 75 – 24.64% and over 75 – 3.9%.

Associated trauma existed in 1154 of the patients, which represents 47.39%.

Conclusions

The number of patients is approximately constant during these four years, with a slight descent in 2016 and a modest increase in 2018.

From the total number of adult patients, most cases were reported in the age group between 46 and 60 years old, but important percentages were also observed in the groups between 30 to 45 years old and 61 to 75 years old.

Regarding the distribution by sex, the overwhelming majority of patients were males (over 90%).

A very significant and alarming aspect is represented by the presence of associated trauma in almost half of the total number of cases.

#18268 : Health promotion in emergency departments with a digital tablet: an observational study

Authors:

Thibaut Jossein (1), David Caillet-Bois (2), Olivier Hugli (2)

1. FBM UNIL , CHUV, Lausanne, SWITZERLAND

2. Urgences, CHUV, Lausanne, SWITZERLAND

Keywords: Emergency department, preventive medicine, screening, information technology, tablet computer, health promotion

Abstract :

Background: In European countries, an increasing number of patients consult the emergency department (ED) instead of a general practitioner for non-urgent primary medical care. These patients may benefit from ED-based preventive care but overloaded ED physicians are reluctant to be involved. The primary objective of this study was to evaluate the proportion of patients accepting a preventive care intervention using a digital tablet (DT) during their ED visits; the secondary objective was to evaluate the proportion of patients benefitting from counselling.

Methods: Single-center observational study conducted in the minor section of a tertiary-care ED in August and September 2018. Inclusion of consecutive patients ≥ 18 years with decision-making capacity, admitted during the investigator's presence (rotating 8-hour shifts within a 24h/7d schedule). The DT presented a menu of nine validated health questionnaires with, after completion, a personalized report with health recommendations based on individual scores, and links to support material or details of specialized services. The report could be printed or emailed to the patient.

Results presented as proportions, mean and standard deviation (SD) or median and interquartile range (IQR). The ethics committee approved this study.

Results: 500 eligible patients were approached and 317 (63%) included. Median ED length of stay: 5.2h (3.7; 7.6). Mean age: 44 ± 17 years, women: 45%; 98% Swiss residents; 54% professionals and 20% retired; 27% with a postgraduate degree, 83% registered with a GP, of whom 84% had visited at least once in the preceding year. Patients filled a median of 4 (2;9) questionnaires. Questionnaires presented by frequency of choice: 1) physical activity 71%: 55% below the recommendation of $\geq 2 \times 30$ minutes/week of moderate activity; 2) alcohol consumption 62%: 55% at-risk drinkers; 3) 62% tobacco: 53% active smokers and 58% contemplating smoking cessation; 4) diabetes 62%: 14% at high risk of developing diabetes, with 62% accepting a bedside capillary glucose check with one new diabetes diagnosis; 5) vaccination status 60%: 24% not up to date; 6) colon cancer 56%: 26% of those aged 50-69 years never screened by colonoscopy or fecal occult blood testing, and 14% having failed to keep up with screening schedules; 7) HIV 50%: 40% accepting a rapid non-targeted opt-in capillary test; no reactive test; 7) interpersonal violence 46%: 21% victims of verbal and/or physical violence, of whom 10% wished to discuss this issue with the ED physician; 9) drug misuse 48%: 35% reporting recent misuse.

Discussion & Conclusions: A majority of patients accepted a digital screening and health-counseling offer, and 50% chose at least four domains. The questionnaires revealed that a significant proportion of this mostly young and active ED population could benefit from advice to improve their health. Although we did not measure the long-term impacts of our intervention, a significant proportion accepted immediate bedside tests for diabetes and HIV. Our results suggest that a DT screening offer would allow the ED to play a complementary role in promoting health in Switzerland. However, further research on its clinical impact is needed before widespread dissemination of this intervention is attempted in Swiss EDs.

This study was approved by the Swiss ethics committees on research involving humans of the Canton of Vaud (CER-VD), Switzerland (Protocol n° 2018-01017, approved on 23 July 2018). This study did not receive any specific funding.

#18269 : Emergency Physicians Attitude towards Clinical Decision Rules

Authors:

Rasha Buhumaid (1), Maryam Siddiqi (1), Salama Al Neyadi (1)

1. Emergency Medicine, Shiekh Khalifa Medical City, AbuDHabi, UNITED ARAB EMIRATES

Keywords: CDR, Emergency Physician

Abstract :**Background:**

Clinical decision rule (CDR) is measurable decision-making tool that are derived from original research. CDR include three or more elements from the patient's history, physical examination findings or investigations that are used to calculate an estimated probability of clinical outcomes or the need of certain diagnostic or therapeutic measure. Several studies have investigated the role of established CDR in the daily practice of EPs. CDR are appealing to EPs because they can be adopted into clinical practice with relative ease and can help reduce the uncertainty of medical decision making. CDR facilitate translation of clinical evidence to bedside practice and improve patient flow.

The objective of this study is to assess EPs' use of and attitudes toward established clinical decision rules.

Methods:

This is a cross-sectional study that will include emergency physicians practicing worldwide. A self-administered online survey will be sent to various emergency physician's online databases through international emergency medicine societies and social network websites. The questionnaire includes 10 questions that will take less than 5 minutes to complete. Questions include demographic and professional characteristics of the respondents as well as the setting in which they practice emergency medicine. Respondents will identify the CDR they currently use. Respondents' general attitudes toward clinical decision rules were assessed by having them state how strongly they agreed or disagreed with 6 closed-ended statements about CDR. The survey will be implemented from May 2019 to August 2019.

#18270 : Development of the education course on marine medicine**Authors:**

Masahiro Wakasugi (1), Hisato Ikeda (2), Mizuho Ii (3), Hiroshi Okudera (3)

1. Emergency & Disaster Medicine, University of Toyama, Toyama, JAPAN
2. , Showa University, Tokyo, JAPAN
3. , University of Toyama, Toyama, JAPAN

Keywords: marine medicine, training, decompression illness

Abstract :

Japan is a maritime country composed of islands, and marine leisure are popular. There are some medical risks in marine leisure, such as diving, however, not only general doctors but also emergency doctors are not familiar with first aid and treatment on marine medicine. For emergency doctors of the seaside area, it is essential to acquire knowledge and treatment on marine medicine such as diving injury and sting by marine creatures.

For the purpose of contributing to the development of marine medicine through education and enlightenment, we developed an education course: ICMM (Immediate Care of Marine Medicine) course on behalf of the Japanese Association for Clinical Hyperbaric Oxygen and Diving Medicine.

The course starts with practice of basic life support, and provides a lecture on basics of diving medicine, response to decompression illness, bites by marine creatures, infection by marine bacteria. ICMM course is intended for medical workers. Though it can also arrange to the content for paramedics, diving instructors, maritime officials, and fishermen.

We have already held several ICMM courses for doctors and diving instructors in Japan. In these training courses, we evaluate the achievement of the students and investigate the learning effects. This time, We will introduce the details of our educational course on marine medicine and actual effects of the training.

#18271 : Trauma Severity Associated With Electric Scooter Crashes in Adults**Authors:**

Genesis Barbosa (1), Regina Sousa (1)

1. School of Nursing, University of Sao Paulo, Sao Paulo, BRAZIL

Keywords: Trauma, Severity index, Emergency, Wounds and Injuries, Accidents, Road traffic injuries

Abstract :

Introduction: electric scooters (e-scooters) for rental and sharing represent a fast and easy means of transport for short distances, and in recent years these devices have been rapidly diffused in large centers around the world. The injuries resulting from the use of e-scooters are a new phenomenon; however, the incidence and types of injuries associated with such equipment are unknown. In this sense, this study aimed to analyze the trauma severity, clinical evolution and dependence of patients with trauma associated with the use of electric scooters. Methods: prospective cohort study of patients who suffered trauma due to the use of scooters admitted in the first 2019 quarter in the emergency department of a tertiary hospital in Rio de Janeiro, Brazil. To map the severity of the lesions, the Abbreviated Injury Scale (AIS) was used. The Revised Trauma Score (RTS), Injury Severity Score (ISS), New Injury Severity Score (NISS) and Trauma and Injury Severity Score (TRISS) were used to measure the severity of trauma. Descriptive statistics were performed to characterize the sample. The data were analyzed using the R software. The Pearson, Wilcoxon-Mann-Whitney, Brunner-Munzel, Two sample t-test, Kruskal-Wallis and one tests were used to verify the association between trauma severity and other variables. way ANOVA. For all tests, $p < 0.05$ was used. Results: a total of 29 patients (68.9% males, mean age of 28.71 ± 8.49 years) were admitted to the emergency room after trauma due to scooter use. Of these, 82.39% were occupants of the scooter and 7.1% reported wearing helmets and 3.5% evolved to death. Regarding the severity of trauma, the means of RTS, ISS and TRISS were 7.39 ± 0.67 , 8.61 ± 3.74 and 98.96 ± 0.85 , respectively. External surface (75.0%), head / neck (28.6%) and thorax (28.6%) were the most affected body regions. Surgery was required in 32.1% of the sample. There was an association between patient dependence and RTS scores with GCS ($p = 0.021$), ISS ($p = 0.011$), NISS ($p = 0.004$) and TRISS ($p = 0.012$) and patient dependency. There was also an association between the screening category and RTS ($p = 0.002$), ISS ($p < 0.001$), NISS ($p = 0.008$) and TRISS ($p = 0.039$). The results indicated statistical significance between the length of hospital stay and the RTS ($p = 0.032$), ISS ($p < 0.001$), NISS ($p < 0.001$) and TRISS ($p = 0.002$); between the number of injured regions and ISS ($p = 0.005$) and TRISS ($p = 0.009$); and the level of patient dependency and RTS ($p = 0.009$), ISS ($p = 0.006$), NISS ($p = 0.002$) and TRISS ($p = 0.005$). Conclusion: the use of this means of transportation deserve attention because they cause injuries and even death, indicate dependence and longer hospitalization the greater severity; and the region most affected head, reinforces the need for protective equipment.

Trial Registration / Funding Information (only) :

This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) – Finance Code 001 and in part by National Council for Scientific and Technological Development (CNPq) - process number [148766/2016-1].

#18275 : Epidemiological profile of the victims of motorcycle accident in Ribeirão Preto / Brazil

Authors:

Rosemary F Daniel (1), Silvia Silva (2), Isabella Amadeu (3), Edilson Carita (4), Elvio Pinotti (5), Gabriela Pergoraro (3), Wallace Saran (6), Gabriel Yamaki (6), Gabriella Regalio (6), melissa cesario (7), Nazir Soubihe Neto (1), Reinaldo Bestetti (8)

1. teacher medical, UNAERP, Ribeirão Preto, São Paulo, Brasil, BRAZIL
2. teacher nurse, Unaerp, ribeirão preto, BRAZIL
3. nurse, UNAERP, Ribeirão Preto, São Paulo, Brasil, BRAZIL
4. teacher, Unaerp, ribeirão preto, BRAZIL
5. medical, SAMU, ribeirão preto, BRAZIL
6. student medical, UNAERP, Ribeirão Preto, São Paulo, Brasil, BRAZIL
7. resident doctor, UNAERP, ribeirão preto, BRAZIL
8. teacher medical, UNAERP, ribeirão preto, BRAZIL

Keywords: Motorcycle accident, victims, trauma, emergency

Abstract :

Ribeirão Preto, has a population of 694,500 inhabitants and the second largest fleet of motorcycles in the state of São Paulo / Brazil (1 motorcycle / 5,05 hab). Currently, the city occupies the fourth position in the state ranking of deaths in motorcycle accidents, causing enormous damage to society. Emergency care occurs in the fixed pre-hospital (FPH), which has four public emergency and mobile pre-hospital (MPH). The mobile emergency pre- hospital is performed by the Mobile Emergency Care Service (MECS) - municipal service, firemen and private mobile pre- hospital. After the care of the victims of traffic accident by mobile pre-hospital, these patients are referred to one of the emergency units (EU) or for in-hospital care, according to the severity of the patient. The Luís Atilio Viana Emergency Unit (EU) is one of the units for the provision of fixed pre-hospital service, considered an intermediate unit for emergency care and responsible for the largest number of patients, with this characteristic, in Ribeirão Preto. The objective of this study is to describe the epidemiological profile of the care given to the motorcycle accident victim assisted at the EU, in Ribeirão Preto, SP, Brazil.

MATERIALS AND METHODS

It is a descriptive and transversal study, with a retrospective and quantitative approach. A documentary research was carried out, aiming to characterize the profile of the victims of motorcycle accidents, attended at the EU of the study, in Ribeirão Preto / SP, from January 1 to June 30, 2018.

RESULTS

A total of 1154 records of automobile accident victims were analyzed, evidencing the predominance of motorcycle involvement in these accidents, identifying 1000 (86.26%) victims of motorcycle accidents. The profile of the victims of this type of accident was predominantly male (69.10%); being 44.5% patients in the age group of 17-26 years. Accidents occurred predominantly (37.6%) in the evening period, mainly on Wednesdays and Thursdays. Regarding the means of transport used by the victims to reach the EU, 66.9% used their own resources, 24% MECS, 4.7% Firemen and 4.4% private emergency services. Regarding the severity of the attendances, according to the Manchester risk classification, 38.1% were classified for the red room, 34.9% went directly into the red room, 25.9% as green and 1.1% qualified for the sector yellow. The prevalence of upper and lower limb injuries was 46% and 38%; respectively. After initial care, 16.3% of these victims required in-hospital care, with a prevalence of orthopedic evaluation.

CONCLUSION

The results of the study portray the high prevalence of motorcycle accidents in the young male population, attended at the EU. Despite the prevalence of mild trauma, it was clear the need to raise the population's awareness of the risks and need for specialized care at the accident site. Within society, stimulating educational practices may contribute to the reduction of traffic accidents, especially motorcycles.

Trial Registration / Funding Information (only) :

CAAE: 18334643.4.0000.5498 seem: 343.635 brazil platform: <http://plataformabrasil.saude.gov.br/login.jsf>

#18277 : Antibiotics prescriptions in the emergencies department: A sample of a moroccan secondary care hospital**Authors:**

Ezzouine Hanane (1), MAROUAN DIOURI (2)

1. medical intensive care unit-university teaching hospital Ibn Rushd, Faculty of medicine and pharmacy -University Hassan II , casablanca, MOROCCO
2. MEDICAL INTENSIVE CARE UNIT, FACULTY OF MEDICINE AND PHARMACY-UNIVERSITY HASSAN II-CASABLANCA-MOROCCO, CASABLANCA, MOROCCO

Keywords: antibiotics;prescriptions;emergencies; secondary care hospital

Abstract :**Introduction**

The use of antibiotics has revolutionized the prognosis of infectious bacterial diseases. However, they were misused with abused indications sometimes which speed up the emergence of antibioresistance. We aimed to make an inventory of antibiotic prescriptions in a Moroccan secondary care hospital emergencies department.

Patients and methods

we proceeded to a prospective study using a survey to analyze the antibiotics prescriptions for 5 months from 1st May to 1st October 2018.

Results

273 antibiotics prescriptions were noted .The main prescriptions of antibiotics were done for otolaryngological infections 34,5%, than urological and genital infections 24,5% and respiratory infections 19%. The beta-lactams were the most molecules prescribed in 62, 3% with predominance of Penicillin A added to beta lactamase inhibitor and Penicillin A alone. Monotherapy was the rule with 90,5%.

The Prescription of antibiotic therapy was not justified and non-compliant to recommendations in the context of superficial wounds and burns without any infectious risk factor, digestive , upper and lower respiratory infections with viral origin. This can have an impact on the emergence of bacterial resistance phenomena.

Conclusion

Simple and reproducible diagnostic tools are necessary for practitioners in the emergencies to establish the diagnosis, hence the diagnostic interest of biological markers including C Reactive Protein and Procalcitonin.The use of referrals in antibiotics, the reinforcement of the continuous training of physicians in infectious diseases and the optimization of the management of the patients in need of treatment must make it possible to improve the quality of the antibiotherapies.

#18278 : Epidemiological profile of traffic accidents and victims treated at the mobile pre hospital in Ribeirao Preto / Brazil**Authors:**

Silvia Silva (1), Elvio Pinotti (2), Renan Thomaz (3), Matheus Passos (3), Rafaela Saad (3), Gabriela Pergoraro (4), Nazir Soubihe Neto (5), melissa cesario (6), Edilson Carita (7), Rosemary F Daniel (5)

1. teacher nurse, Unaerp, ribeirão preto, BRAZIL
2. medical, SAMU, ribeirão preto, BRAZIL
3. student medical, UNAERP, Ribeirão Preto, São Paulo, Brasil, BRAZIL
4. nurse, UNAERP, Ribeirão Preto, São Paulo, Brasil, BRAZIL
5. teacher medical, UNAERP, Ribeirão Preto, São Paulo, Brasil, BRAZIL
6. resident doctor, UNAERP, ribeirão preto, BRAZIL
7. teacher, Unaerp, ribeirão preto, BRAZIL

Keywords: Health profile, Traffic-accidents, Pre-hospital mobile, Emergency, Trauma

Abstract :

Introduction

The city of Ribeirão Preto is located in the of the state of São Paulo - Brazil. Prehospital Assistance (PHA) started in 1996, with the implementation of pilot projects that served as a model for the implementation of the Mobile Emergency Care Service (MECS), in 2004, in the country, becoming a pioneer in the development of the MECS, nationally. The PHA, in the mentioned location, is offered by the State through the Rescue and Emergency Assistance Group (REAG) and MECS. The PHA performed by MECS is carried out by vehicles, with 14 Basic Support Units (BSU), 02 Advanced Support Units (ASU) and 02 motorcycles, which serve the population of Ribeirão Preto - about 694,543 inhabitants. In this direction, the objective of this study is to present the epidemiological profile of traffic accidents and victims assisted by MECS.

Material and Method

This is a descriptive, retrospective study with a quantitative approach. The data were provided by the administrative sector of MECS of Ribeirão Preto -SP, referring to the period of 2017 and 2018, considering the number of calls received in the Emergency Regulation Center - number 192, total calls related to traffic accidents, sex of the victims involved in the events, period of occurrence of the accidents. The number of deaths of victims of traffic accidents in the city of Ribeirão Preto and in the state of São Paulo, at the state government platform INFOSIGA, was also investigated.

Results

Considering the number of connections to the 192 and car services, in the years 2017 and 2018, 80,470 and 80,888 connections were registered; respectively, evidencing an increase in the number of connections (0.51%). In 2017 the number of traffic accident related calls was 5,506 (6.84%), while in 2018 it reached 6,221 (7.69%) of the total number of calls evidencing an increase of 12.98% in traffic accidents with victims in Ribeirão Preto-SP, in the period previously mentioned. Among the victims, males are the most vulnerable; data from 2017 and 2018 indicate that males were victims in 73.68% and 72.56% of traffic accidents; respectively. There was a predominance of the number of accidents surveyed on Saturdays and in the third quarter of the year, during the two-year period. In relation to the deaths, the main victims are male motorcyclists. In 2017, deaths prevailed in the age group of 18-24 years, in 2018 between 40-45 years, contrary to the Brazilian indices, which remained in the age group between 18-24 years (infosiga 2018). In the state and in the city, the highest death rate occurred in the period between 18:00 and 00:00 in both years.

Conclusion

The findings show a high prevalence of traffic accidents in the study municipality, in the years surveyed, evidencing an increase of the event in the period, with a predominance of male victims; differing from Brazil, in the year 2018, in relation to the age group; were motorcyclists, who were injured in the afternoon, more often at the end of the week.

Trial Registration / Funding Information (only) :

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#18279 : Virtual Patient in the Emergency Room: application to support the process of teaching the graduate in medicine**Authors:**

Rosemary Daniel (1), Sílvia Silva (2), Edilson Carita (3), Tufik Geleilete (4), Alex Xicatto (5), Gabriela Pergoraro (6), Reinaldo Bestetti (1)

1. teacher medical, UNAERP, ribeirão preto, BRAZIL
2. teacher nurse, Unaerp, ribeirão preto, BRAZIL
3. teacher, Unaerp, ribeirão preto, BRAZIL
4. teacher medical , UNAERP, Ribeirão Preto, BRAZIL
5. student , UNAERP, Ribeirão Preto, São Paulo, Brasil, BRAZIL
6. nurse, UNAERP, Ribeirão Preto, São Paulo, Brasil, BRAZIL

Keywords: emergency, virtual patient, mobile application, learning, methodology, simulation

Abstract :

Contemporary society has undergone profound changes in recent years. The questioning about the formation of professionals, including in the area of health, has intensified in a more direct and incisive way. The integral care of the individual and the community, the changes in care, determined this questioning.

The active learning methodologies have gained space, replacing the fragmentation of the knowledge used in the conservative methodology by fostering the protagonism of the learner, placing him as the main agent of his learning. The stimulus to criticism and reflection are encouraged by the teacher / mediator who conducts the activity, but the center of this process is the learner himself, working the learning in a more participative way.

In this direction, we highlight that the use of Information and Communication Technology (ICT) has become an important didactic-pedagogical resource and started to integrate the teaching-learning processes for the professional formation in its several levels, emphasizing that the current generations are familiar and have mastery over the use of these new features.

In order for a student to become a medical professional with the skills and competencies required for professional performance, he / she must continually practice the acquired knowledge and currently the Learning Objects (LO) are tools to support the teaching process when making available to different students and modern study resources, such as the computer simulations implemented for health courses.

The objective of this study is to present the development of an LO to support the teaching-learning process of the graduate in Medicine in the care of patients in the emergency room.

This is an exploratory-descriptive study with a qualitative approach.

The application was developed with the structure of Android Studio version 3.0.1 and the Integrated Development Environment IntelliJ IDEA (IDE). The Java language was used to implement the interfaces and functions of the application. The application allows the student to solve case studies in emergencies, including the contextualization of the moment of arrival of the patient in the emergency room, anamnesis and possible medical conducts (04 options), with only one option being correct, however, any option chosen will provide feedback to the student. If you choose a wrong alternative, the patient will experience worsening of the clinical picture or even death, depending on the continuity of the conduct. When marking the correct alternative, the patient will present a satisfactory clinical evolution, the clinical case will present several steps for the attendance,

The LO was validated through a qualitative analysis with three emergency teachers from a Higher Education Institution of Ribeirão Preto, Brazil. Teachers used the application, simulated examples and concluded that interfaces are user-friendly, feedback time is adequate and feedbacks are presented correctly and do not recommend changes.

It is evidenced that the OA allows the student to study different emergency situations, evaluating the clinical reasoning, decisions about the treatment with results in real time. Such information can contribute to the training and improve the performance of this future medical professional, minimizing the risk of errors in clinical behavior.

Trial Registration / Funding Information (only) :

UNAERP financing

#18280 : Lean body mass as a prognostic factor in post-cardiac arrest patients treated by targeted temperature management: a retrospective cohort study**Authors:**

Seungho Ham (1), Joon Pil Cho (1), Hyuk-Hoon Kim (1)

1. Department of Emergency Medicine , Ajou University Hospital, Suwon, KOREA

Keywords: Lean body mass, Heart arrest, Critical care outcomes

Abstract :

Background

Post-cardiac arrest patients with return of spontaneous circulation have a very low survival rate and poor prognosis despite aggressive treatments. Prediction these patients' prognosis is important for planning the treatment of the patients and providing information to their families. Several studies have reported body mass index (BMI) as a prognostic factor in post-cardiac arrest patients, which is called "obesity paradox". In this study, researchers aimed to investigate the relationship of LBM with the prognosis of post-cardiac arrest patients.

Methods

This retrospective cohort study included adult patients of out-of-hospital cardiac arrest between January 2015 and August 2018. The enrolled patients were divided into 2 groups based on clinical outcomes (cerebral performance category score, 1 to 2 and 3 to 5) and compare the characteristics of these two groups. Association of LBM with good neurologic outcomes (CPC score 1 to 2) was analyzed by dividing patients into quartile segment by their LBM. Predictive value of optimal cutoff points of LBM in post-cardiac arrest patients was evaluated.

Results

A total 169 patients were analyzed (CPC score 1 to 2, n=55; CPC score 3 to 5, n=114). Patients' age, frequency of witnessed cardiac arrest, initial shock rhythm, post-hospital flow time, estimated cardiac arrest, and LBM were different in the two groups ($p < 0.05$). LBM was associated with the prognosis of post cardiac arrest patients in the 4th quartile segment. Cutoff point of lean body mass for prediction of cardiac arrest outcomes was 48.34 (sensitivity = 0.600, specificity = 0.763, accuracy = 0.710) and the predictive value was 0.68 (95% confidence interval, 0.60 to 0.75).

Discussion and Conclusions

High LBM is related to good neurological prognosis of patients after cardiac arrest. The increase in muscle mass due to exercise is interpreted as showing positive effects on hypoxic injury in cardiac arrest and reperfusion injury after return of spontaneous circulation.

Trial Registration / Funding Information (only) :

no appropriate register. This study did not receive any specific funding.

#18281 : Evaluation of the development and site-related risks of contrast-induced nephropathy after intravenous contrast media administration: A retrospective cohort study**Authors:**

Seungho Ham (1), Joon Pil Cho (1), Hyuk-Hoon Kim (1)

1. Department of Emergency Medicine , Ajou University Hospital, Suwon, KOREA

Keywords: Kidney diseases, Intravenous administration, Emergency service

Abstract :

Background

Intravenous contrast media is frequently administered when using computed tomography (CT) to diagnosis acute critical conditions of patients in the emergency room (ER). Because of the unstable conditions of patients who visit the ER and limitation of accessibility to the medical information of these patients, clinicians sometimes hesitate to use contrast media owing to concerns of contrast-induced nephropathy (CIN). This study's objective was to evaluate the development and site-related risks of CIN after intravenous contrast media administration for CT.

Methods

This single-center, retrospective cohort study was performed in a university-affiliated tertiary hospital with an average census of 1,025,110 visits per year. Patients who underwent contrast-enhanced CT (CECT) were included and divided into two groups based on the site of where CECT was executed: the ER group and ward group. Linear regression analysis was used to examine the association between the site of where CT was executed and changes in the serum creatinine level after CECT. Logistic regression analysis was performed to determine whether the site of where CT was executed was associated with the development of CIN.

Results

We investigated 79,849 patients in this study. Overall, 43,037 patients underwent CECT in the ER, and 36,812 underwent CECT in a ward. CECT performed in the ER was negatively associated with changes in the serum creatinine level (β coefficient -0.01, standard error 0.00, $p < 0.05$) and development of CIN (odds ratio 0.91 95% confidence interval 0.86-0.95, $p < 0.05$).

Discussion and Conclusions

Unlike the general prediction, performing CECT in the ER is not associated with a higher risk of CIN than performing CECT in a ward after admission. Therefore, based on our findings, the weight attributed to potential contrast-induced renal injuries in the clinical decision-making process of clinicians who work in the ER should be adjusted.

Trial Registration / Funding Information (only) :

no appropriate register. This study did not receive any specific funding.

#18282 : The development of Thailand's hospital assessment instruction and evaluation for mass casualty incident and disaster preparedness**Authors:**

Prasit Wuthisuthimethawee (1), Rapeeporn Rojseangreung (2)

1. Department of Emergency Medicine, Faculty of Medicine, Prince of Songkla University, Hatyai, Songkhla, THAILAND
2. HRH Princess Chulabhorn Disaster and Emergency Medicine Center, HRH Princess Chulabhorn College of Medical Science, Bangkok, THAILAND

Keywords: Hospital assessment tool, Disaster, Mass casualty incident

Abstract :

Title: The development of Thailand's hospital assessment instruction and evaluation for mass casualty incident and disaster preparedness

Introduction: Community preparedness is the key component to mitigate the effects from mass casualty incident (MCI) and disaster. The hospital awareness and preparedness is one component of MCI and disaster preparedness in the community as it plays a critical role in taking care of injured patients. To improve hospital preparedness for MCI or disaster management, the first requirement is to assess the current system capacity, readiness, awareness and preparedness. Nevertheless, there is no assessment tool that is appropriate for Thai hospitals and the Thailand context.

Objective: To develop a hospital MCI and disaster preparedness assessment tool for hospitals in Thailand

Material and methods: A systematic search was done of available literature in English and Thai languages published up to 31 December 2014 in various databases: Pubmed, Medline (Ovid), Cochrane library (Wiley), Cinahl (Ebscohost), Embase (Elsevier), World Health Organization (WHO) guidelines and other organizations. The search used the key words "assessment," "evaluation," "protocol," "hospital preparedness," "thesis," and "full report." These terms were combined with disaster or mass casualty-related keywords. The enrolled articles were assessed, and information was extracted independently by three reviewers. The assessment tool was developed by using a modified Delphi method and the WHO health systems (six building blocks plus) framework, expert inputs, public hearing, stakeholders' inputs, and a pilot feasibility test.

Results: There were 5,869 total articles identified; 5,593 articles irrelevant to medicine or public health and 183 articles not related to hospitals were excluded. The remaining 76 full articles (8/76 (10%) with an assessment tool) were enrolled for analysis and data and information were extracted. A new assessment tool was developed independently by three reviewers and finalized in a joint reviewer meeting. The tool is composed of 4 parts; general information, 127 assessment items, suggestions, and hospital actual and surge capacity. All inputs obtained from experts, public hearing, stakeholders meeting, and pilot feasibility test were used to revise the tool.

Conclusion: The hospital assessment tool was developed to evaluate level of preparedness of Thai hospitals for MCI and disaster.

Trial Registration / Funding Information (only) :

Faculty of Medicine, Prince of Songkla University

#18284 : Temporal evolution of the PcvCO₂-PaCO₂ / CaO₂-CcvO₂ ratio versus serum lactate during resuscitation in septic patients with hypotension**Authors:**

Vimi Rewari (1), Shyam Madabhushi (2), Anjan Trikha (1), Rahul Kumar Anand (1), Rashmi Ramachandran (1)

1. Department of Anaesthesiology, Pain medicine and Critical Care, All India Institute of Medical Sciences, New Delhi, INDIA
2. Department of Anaesthesiology, Army Hospital(R & R), Delhi Cantt, INDIA

Abstract :

Background: Lactate as a target for resuscitation in patients with septic shock has important limitations. The PcvCO₂-PaCO₂ / CaO₂-CcvO₂ ratio may be used as an alternative for the same. The primary objective of the study was to evaluate the correlation between serum lactate and PcvCO₂-PaCO₂ / CaO₂-CcvO₂ ratio measured at various time points to a maximum of 24h in patients with septic shock (Mean arterial pressure < 65mmHg). The secondary objectives were to study the 1) Relationship between the PcvCO₂-PaCO₂ / CaO₂-CcvO₂ ratio and lactate clearance at 6, 12 and 24 hrs as compared to the initial serum lactate. 2) To study the correlation between the arterial lactate and the PcvCO₂-PaCO₂ gap at each measurement. 3) Outcome in terms of ICU length of stay, organ dysfunction and mortality at day 28.

Methods: This prospective observational cohort study was conducted at the mixed ICU(Medical/Surgical) of the All India Institute of Medical Sciences (AIIMS), New Delhi from July, 2016 to April, 2018. Thirty patients with sepsis-induced hypotension (MAP < 65mmHg) who were being actively resuscitated were enrolled. Paired arterial and central venous blood samples were obtained 0.5 hourly till stabilisation of MAP (maximum of two samples), and 6 hourly thereafter for the first 24h. Patients were followed up to day 28 of enrolment for mortality and organ system failure. All statistical analysis was performed using 'Stata' software (Ver 15.1; StataCorp LLC, Texas, USA). Correlation between the various variables was done using the Spearman coefficient. Subgroup analysis of variables between survivors and non-survival groups was done using the Wilcoxon-Mann-Whitney test. Sensitivity and specificity of the PcvCO₂-PaCO₂ / (CaO₂-CcvO₂) ratio and arterial lactate were calculated and Receiver-Operating-Characteristic curves were constructed.

Results: A positive correlation was observed between arterial lactate and PcvCO₂-PaCO₂ / CaO₂-CcvO₂ ratio at 0h, 6h, 12h, 18h (R=0.413 P=0.02; R=0.567 P=0.001; R=0.408 P=0.025; R=0.521 P=0.003, respectively). No correlation was seen between PcvCO₂-PaCO₂ / CaO₂-CcvO₂ ratio and lactate clearance. The subgroup analysis showed that neither an abnormal arterial lactate (> 2mmol/L) nor an abnormal PcvCO₂-PaCO₂ / CaO₂-CcvO₂ ratio (>1) at the time of enrolment could distinguish survivors from non-survivors (at D28 of enrolment). The median (PcvCO₂-PaCO₂ / (CaO₂-CcvO₂)) ratio was higher in non-survivors than in survivors at all time points. However, this reached statistical significance only at the 24h time point (P=0.004). A PcvCO₂-PaCO₂ / CaO₂-CcvO₂ ratio > 1.696 at 24h of resuscitation predicted mortality at 28d (Sensitivity: 80%, Specificity 69.2%, AU-ROC 0.82). This threshold also distinguished survival at D28 in the Kaplan Meier estimates (Chi-square=6.00, P=0.014). An arterial lactate > 1.6mmol/L at 24h of resuscitation predicted mortality at 28d (Sensitivity 73.33%, Specificity 69.23%, AU-ROC 0.853). This threshold also distinguished survival at D28 in the Kaplan Meier estimates (Chi-square=5.62, P=0.018)

Discussion and Conclusion(s): The (PcvCO₂-PaCO₂ / (CaO₂-CcvO₂)) ratio and the lactate are positively correlated during the first 24h following active resuscitation from sepsis-induced hypotension. The (PcvCO₂-PaCO₂ / (CaO₂-CcvO₂)) ratio at 24h is significantly higher in non-survivors, and a threshold of 1.696 mmHg/mL/dL for (PcvCO₂-PaCO₂ / (CaO₂-CcvO₂)) ratio at 24h significantly differentiates survivors from non-survivors. The (PcvCO₂-PaCO₂ / (CaO₂-CcvO₂)) ratio may be used as an end-point of haemodynamic resuscitation from septic shock.

Trial Registration / Funding Information (only) :

Registered with the Clinical Trials Registry India (CTRI/2017/11/010342) No funding received

#18285 : Antibiotic prophylaxis after primary suturing in elders is not necessary: a retrospective case-control study**Authors:**

MUHAMMED FURKAN ERBAY (1), Sultan Tuna Akgöl Gür (2), Kamber Kaşali (3)

1. EMERGENCY MEDICINE, ATATURK UNIVERSITY, ERZURUM, TURKEY
2. EMERGENCY MEDICINE, ATATÜRK UNIVERSITY, ERZURUM, TURKEY, ERZURUM, TURKEY
3. MEDICAL BIOSTATISTICS, ATATÜRK UNIVERSITY, ERZURUM, TURKEY, ERZURUM, TURKEY

Keywords: antibiotic, elder, prophylaxis, suture, wound

Abstract :

Background: Even it is not as common as in younger population, elder patients with wounds are encountered in emergency department as well. Comorbid illnesses and extremes of age are risk factors for wound infection but there is not a controlled study about antibiotic prophylaxis for wound infection in elderly. Aim of the present study is to find out whether antibiotic prophylaxis is necessary and to identify risk factors for wound infection in elder population after primary suturing of lacerations.

Methods: The study was designed as a retrospective case control study in Atatürk University Medical School Teaching Hospital, Erzurum, Turkey. Patients presented to the emergency department with wounds between 2008 and 2018 were investigated and their both medical files and electronical records were gathered from archives and electronical database. Patients older than 64 years old who were followed as outpatients and revisited emergency department and visited infectious diseases, plastic and reconstructive surgery, orthopedics, otorhinolaryngology polyclinics with wound infection after the first presentation to emergency department were included in the study. Patients who were internalized to a relevant clinic after primary suturing, whose records were incoherent according to electronical records and archived files and whose records were completely missing were excluded from the study. Data were analyzed via IBM SPSS 20 statistics analysis software. Normal distribution of the continuous variables were identified by Shapiro Wilk test. When normal distribution of continuous variables was observed in two independent groups, Independent Samples t test was used and when it was not Mann Whitney U test was performed. Comparisons of categorical variables were performed by Chi-Square and Fisher's Exact test. Statistical significance level was determined as $p < 0,05$.

Results: 594 out of 1036 patients were included in the present study. 69% of the patients were male (n: 410) and 31% of them were female (n: 184). Median age was 73 year-old. 74, 7% of the cases were judicial. Scalp were injured mostly (33%), followed by upper extremity (32%). 41% of the patients (n: 245) were prescribed oral antibiotics, 0, 03% (n: 20) of them were prescribed topical antibiotic and 23% (n: 138) of them were not prescribed antibiotics. Using oral antibiotic was not statistically significant in terms of preventing wound infection ($p = , 368$). Using topical antibiotics were strongly correlated with emergence of wound infection ($p = , 001$).

Discussion and Conclusion: In addition to currently known risk factors, hypercholesterolemia was found as a risk factor for wound infection ($p = , 004$). Some authors recommend antibiotic prophylaxis before the manipulation of the wound, others claim antibiotic prophylaxis is not necessary. Despite its benefit is not clear, applying antibiotic ointment is often recommended. However, present study shows there is a strong relation between topical antibiotics and wound infection in elders. The present study suggests antibiotic prophylaxis is not beneficial to prevent wound infection in elders whether it is systemic or local and wound care, before and after suturing, might be the key to prevent wound infection.

Trial Registration / Funding Information (only) :

Registration: Not needed because of the type of the study. Funding: This study did not receive any specific funding.

#18291 : Audit of Sepsis Management in an Irish District Hospital**Authors:**

Noorsyakira Osman (1), Mohammed Mohammed Ahmed (1), Mohamed Ismail (1), Asim Rafiq (1)

1. Emergency Department, Midland Regional Hospital Portlaoise, Laois, IRELAND

Keywords: Sepsis, antibiotics, blood cultures

Abstract :

Sepsis is defined as life-threatening organ dysfunction caused by a dysregulated host response to infection. It encompasses a clinical spectrum of increasingly severe systemic inflammatory responses (SIRS) to infection including uncomplicated sepsis, severe sepsis and septic shock. Sepsis remains a major cause of morbidity and mortality. Up to 60% of all Irish hospital deaths have a sepsis or infection diagnosis. Early recognition of sepsis and prompt treatment is crucial as sepsis is time-dependent medical emergency. Choosing a right antibiotic for a particular infection is prudent as inappropriate choice of antibiotic for infections is associated with prolonged intensive care unit (ICU) stay and increased risk of mortality. Likewise, ensuring the door-to-needle time to first antibiotics within one hour of the diagnosis of sepsis is equally important in improving patient outcomes as each additional hour until completion is associated with increased mortality by 4%. On the other hand, blood cultures are an important investigation in guiding effective management in sepsis patients. Contaminated blood samples may delay or cause incorrect changes to patient management, therefore can prolong hospital stay as well as increase cost to health boards. The primary aim of this audit is to measure the management of sepsis patients in the Emergency Department (ED) in an Irish district hospital against best practice guidelines; particularly appropriate antibiotic selection as per hospital antimicrobial guidelines and door-to-needle time to first antibiotic(s) administration in order to optimise patient outcomes and minimise the burden of chronic sequelae. The secondary aim is to determine blood culture contamination rates as part of 'Sepsis 6' bundle in our ED. This was a retrospective audit in all patients who presented to ED who met the Health Service Executive (HSE) sepsis criteria (SIRS ≥ 2) over a 6-month period from August 2018 to February 2019. 125 patients were included in this audit. Demographics (including age, gender, temperature, heart rate, respiratory rate, blood pressure, blood glucose, white cell count, presence or absence of diabetes), antibiotic(s) choice, timing to first antibiotic(s) and blood culture results were analysed from E-noting health records. Mean age of patients who met the sepsis criteria was 68.5 years. 62.4% were male. The most common suspected source of sepsis was the respiratory system (N=94, 72.3%). The second most common source of sepsis was genitourinary system (N=17, 13.1%), followed by gastrointestinal system. 77.6% (N=97) of patients with suspected sepsis received their first dose of antibiotic(s) within one hour of ED presentation. Our audit showed that 91.2% (N=114) of patients received appropriate antibiotic(s) according to types of infection as per hospital antimicrobial guidelines. Unfortunately, blood cultures were not taken in 35 (28%) patients. Of all patients who had blood cultures taken, 16.7% (15 out of 90) were contaminated. We concluded that 77.6% of suspected sepsis patients were given antibiotic(s) within an hour of presentation. 91.2% of patients received appropriate antibiotic(s) treatment. 16.7% of blood cultures were contaminated. We hope that this audit will increase awareness among healthcare professionals regarding the importance of appropriate antibiotic use and reducing the door-to-needle time to first antibiotic(s).

#18294 : Children saving lives: a randomised controlled trial comparing telephone-assisted cardiopulmonary resuscitation with and without telemetric performance feedback.

Authors:

Steffen Westelinck (1), Catheline Depuydt (2), Eva Vekeman (3), Peter De Paepe (1), Patrick Van de Voorde (1), Koenraad Monsieurs (4), Martin Valcke (3), Nicolas Mpotos (2)

1. Emergency Department, Ghent University Hospital, Ghent, BELGIUM
2. Emergency Department, St. Lucas General Hospital, Ghent, BELGIUM
3. Department of Educational Studies, Ghent University, Ghent, BELGIUM
4. Emergency Department, Antwerp University Hospital, Antwerp, BELGIUM

Keywords: BYSTANDER CPR, CHILDREN, CPR, FEEDBACK DEVICE, TELEPHONE CPR

Abstract :**Introduction**

Devices capturing performance data create the possibility of providing real-time information on Cardio-Pulmonary Resuscitation (CPR) performance. Telephone-Assisted Cardio-Pulmonary Resuscitation (TCPR) with telemetric performance feedback (TPF) could lead to better CPR quality. Little is known on the impact of TCPR instructions with a child as bystander. This study investigates TCPR quality with and without TPF in children.

Methods

In this manikin study, 1722 children aged 14-18 years were randomised to a TCPR group using a compression-only TCPR protocol (Algorithme Liégeois d'Encadrement à la Réanimation par Téléphone or ALERT) or to a TPF group where the dispatcher additionally received real-time compression quality feedback through the Q CPR™ application (Laerdal, Norway) connected to a Little Anne manikin (Laerdal, Norway). CPR quality was registered during three minutes.

Results

After randomisation, 35 participants were excluded and 473 dropped-out, the majority (n=388) being in the TPF group and due to manikin disconnection. In total 1214 simulations were analysed (TPF n=438, TCPR n=776).

The mean percentage of compressions with correct depth (5-6cm) was 21.4% (TCPR) vs. 35.1% (TPF) [mean difference 13.7% with 95%CI: 10.0 to 17.5%]. The mean percentage of compressions with correct rate was 66.7% (TCPR) vs. 72.9% (TPF) [mean difference 6.2% with 95%CI: 3.4 to 9.0%]. The mean percentage of compressions with sufficient recoil was 82.0% (TCPR) vs. 85.5% (TPF) [mean difference 3.5% with 95%CI: 0.5 to 6.5%]. The mean compression depth was 43.6 mm (TCPR) vs. 45.5 mm (TPF) [mean difference 2.0 mm with 95%CI: 0.6 to 3.3 mm].

When putting the CPR benchmark for correct compression depth, rate and recoil at 60% 53 (6.8% TCPR) vs 94 (21.5% TPF) succeeded. All differences were statistically significant.

Conclusion

In a simulated setting with children as bystanders, providing TPF to the dispatcher resulted in higher quality compression-only CPR. Clinical significance remains to be determined.

Trial Registration / Funding Information (only) :

The study was approved by the ethics committee of Ghent University Hospital (reference number B670201627199).

#18296 : A NICE combination predicting hospitalisation at triage: a European multicentre prospective observational study of febrile children presenting to the Emergency Department.

Authors:

Dorine Borensztajn (1), Nienke Hagedoorn (1), Ulrich von Both (2), Enitan D. Carrol (3), Manuel Dewez (4), Marieke Emonts (5), Michiel van der Flier (6), Ronald de Groot (6), Jethro Herberg (7), Benno Kohlmaier (8), Emma Lim (5), Ian Maconochie (9), Federico Martinon-Torres (10), Ruud Nijman (7), Marko Pokorn (11), Franc Strle (11), Maria Tsolia (12), Clementien Vermont (13), Shunmay Yeung (14), Dace Zavadska (15), Werner Zenz (8), Michael Levin (7), Henriëtte A Moll (16)

1. Department of General Paediatrics, Erasmus MC-Sophia Children's Hospital, Rotterdam, THE NETHERLANDS
2. Division of Paediatric Infectious Diseases, Dr. von Hauner Children's Hospital, university hospital, Ludwig, Ludwig-Maximilians-Universität (LMU), München, GERMANY
3. Institute of Infection and Global Health, University of Liverpool, Liverpool, UK
4. Faculty of Tropical and Infectious Disease, London School of Hygiene and Tropical Medicine, London, UK
5. Paediatric Immunology, Infectious Diseases & Allergy, Great North Children's Hospital, Newcastle upon Tyne, UK
6. , Radboudumc Nijmegen, Nijmegen, THE NETHERLANDS
7. Section of Paediatrics, Imperial College of Science, Technology and Medicine, London, UK
8. Department of General Paediatrics, Medical University of Graz, Graz, AUSTRIA
9. Section of Paediatrics, Imperial College of Science, Technology and Medicine, London, UK
10. Genetics, Vaccines, Infections and Pediatrics Research group (GENVIP), Hospital Clínico Universitario de Santiago de Compostela, Santiago de Compostela, SPAIN
11. Department of Infectious Diseases, University Medical Centre Ljubljana, Univerzitetni Klinični Center, Ljubljana, SLOVENIA
12. Second Department of Paediatrics, National and Kapodistrian University of Athens, P. and A. Kyriakou Children's Hospital, Athens, GREECE
13. Department Paediatric infectious diseases & immunology, Erasmus MC-Sophia Children's Hospital, Rotterdam, THE NETHERLANDS
14. Faculty of Tropical and Infectious Disease, London School of Hygiene and Tropical Medicine, Liverpool, UK
15. Department of Pediatrics, Rīgas Stradiņa universitāte, Children clinical university hospital, Rīga, LATVIA
16. Department of General Paediatrics, Erasmus MC - Sophia Children's Hospital, University Medical Center Rotterdam, Rotterdam, THE NETHERLANDS

Keywords: paediatrics, paediatric emergency medicine, hospitalisation, admission, PEWS, NICE alarming signs, fever

Abstract :**Background and aims:**

A large proportion of paediatric Emergency Department (ED) visits consists of febrile children. A prolonged process between arrival at the ED and hospital admission can negatively influence ED crowding and subsequent quality of care for the individual patient.

While several studies have focused on predicting hospital admission, many of those either focused on adults, on specific diseases (e.g. asthma only) or were performed in a single setting, thus limiting the generalizability of the result to other settings with a different case mix and different admission rates. Furthermore, many models included variables that were not available at triage, such as laboratory results.

We aimed to investigate early risk factors for hospital admission in febrile children attending different EDs in Europe, and to develop and validate a prediction model identifying those children needing hospitalisation, thereby improving patient flow and quality of care.

Methods:

In the MOFICHE study (Management and Outcome of Fever in children in Europe, January 2017-April 2018) data were collected on febrile children aged 0–18 years presenting to 12 European. MOFICHE is part of the PERFORM study (<http://www.perform2020.eu>). Routine data were prospectively collected and included general patient characteristics, markers of disease severity (abnormal vital signs according to the APLS reference ranges, Paediatric Early Warning Score (PEWS) and NICE fever guideline red alarming signs) and disposition (discharge, admission, ICU admission).

A prediction model for hospitalisation was constructed using multivariable logistic regression analysis. We used a stepwise approach in which models with general patient characteristics, vital signs, PEWS and NICE alarming signs were tested separately, and were subsequently combined in the final model. The prediction model was derived in a random sample of half of the cases and validated in the remaining set. We determined the discriminative value of the model by calculating the receiver operating curves (ROCs) and assessed the predictive performance (sensitivity, specificity) at a high specificity level as our aim was to identify children at high risk for admission.

Results:

38,496 children were included. Of those, 13,397 (34,9%) children were admitted to a general ward and 156 to the ICU.

When testing patient characteristics and markers of disease severity separately, only the NICE alarming signs performed well with an AUC of 0.77 (95% CI 0.77-0.77), while patient characteristics, vital signs and PEWS performed poorly (AUC's all below <0.70).

However, combining patient characteristics, vital signs and NICE alarming signs yielded an AUC of 0.82 (95% CI 0.82-0.82). The model performed equally well in the validation set.

A "rule-in model" was created, which was highly specific (95%) with low sensitivity (37%), a positive likelihood ratio of 7.5 and a positive predictive value of 72%.

A digital calculator was constructed to facilitate clinical use.

Conclusion:

The combination of patient characteristics and markers of disease severity available at triage can be used to identify children at high risk for hospitalisation at an early stage and improve ED patient flow.

#18297 : Comparing of CPR related trauma: mechanical chest devices vs. manual CPR

Authors:

Jiri Karasek (1), Betka Blankova (2), Andrea Doubkova (3), Tereza Pitasova (3), David Nahalka (3), Tomas Bartes (3), Jiri Hladik (4), Tomas Adamek (2)

1. Dpt. of Cardiology 3 rd. Medical Faculty, Hospital Liberec, Charles University, Prague, Liberec, CZECH REPUBLIC

2. Dpt. of Forensic Medicine, Hospital Liberec, Liberec, CZECH REPUBLIC

3. 3rd Medical Faculty, Charles University, Prague, CZECH REPUBLIC

4. Dpt. of Forensic Medicine, University Hospital Kralovske Vinohrady, Prague, CZECH REPUBLIC

Keywords: CRP, LUCAS, Corpulse, autopsy

Abstract :

Introduction:

Resuscitation (CPR) with mechanical chest devices are not recommended for routine CPR according to randomised trials. One of possible explanation could be CPR related trauma caused with mechanical chest devices. Current data are based on subanalysis from randomised trial, but autopsies are limited by law and autopsy results are not objectivised.

Aim:

To compare injuries after CPR in autopsy results by manual resuscitated and mechanical (LUCAS 2, AutoPulse, CORpulse) resuscitated patients and establish possible proportion of CPR related injuries on death without respect to cause of cardiac arrest.

Methods:

Retrospective multicentric study based on autopsy reports by patients died after CPR, patients with traumatic cause of cardiac arrest were excluded. Patients were divided in two groups: mechanical and manual CPR. For objective evaluation of injury seriousness we used Abbreviated injury scale scoring for the most serious injury and New Injury Scale Score for summary of all injuries.

Results:

We have enrolled 704 patients, after trauma exclusion we have analyzed 630 autopsies. Manual CPR were provided by 559 patients and mechanical by 64 patients. Both groups are not different in age, gender, bystander CPR and cardiac etiology of Arrest. Mechanical CPR was significantly longer ($p=0,0005$). Both groups have no differences in incidence of injuries of thoracic vessels, lungs, heart, pericard, pleura, stomach, liver and spleen. We have observed injuries by 80% of manual and 87,5% of mechanical CPR. The most frequent was thorax skeleton injury 85,5% vs. 87,5%. Median of the most serious injury was 3 (serious by Abbreviated injury scale scoring) without statistical difference, median of summary of injuries (New Injury Severity Score) was 13 in both groups (low probability of fatal injury). If we analysed CPR by LUCAS 2 compared to manual, results are similar, only pericard injuries are higher with LUCAS 2.

Conclusion:

Incidence and seriousness of CPR related injuries according to autopsy reports are not different in comparing of manual and mechanical CPR. Mechanical CPR is significantly longer a LUCAS 2 leads to significant more pericard injuries without influence to total seriousness of injury.

#18298 : Impact of ECG after Out of Hospital Cardiac Arrest (OHCA)

Authors:

Jiri Karasek (1), Klara Bouskova (2), Robert Pospisil (2), Jiri Seiner (3), Matej Strycek (3), Rostislav Polasek (3), Petr Ostadal (4)

1. Dpt. of Cardiology 3 rd. Medical Faculty, Hospital Liberec, Charles University, Prague, Liberec, CZECH REPUBLIC

2. 3rd Medical Faculty, Charles University, Prague, CZECH REPUBLIC

3. Dpt. of Cardiology , Hospital Liberec, Liberec, CZECH REPUBLIC

4. Dpt. of Cardiology , Hospital Na Homolce, Prague, CZECH REPUBLIC

Keywords: ECG, OHCA, coronarography

Abstract :

Introduction:

ECG is simply method accesible in prehospital care and commonly used in management of OHCA. Previous studies was focused mainly on ST elevation, ECG after OHCA could be influenced by haemodynamic instability, acido-basis changes and hyposaturation after resuscitation.

Methods:

Observation retrospective study from prospective OHCA registry. It was described different pathologies and its frequency immediately after ROSC and after Hospital Admission and their relation to coronarography findings and finally diagnosis. It was established sensitivity and specificity of the tests.

Results:

It was included 146 patients after OHCA with Restitution of Spontaneous Circulation (ROSC). Their ECG was provided after OHCA and than after Admission to Hospital. ST elevation was presented by 52% of patients after ROSC and STEMI diagnosis was confirmed by 65,8% of patients (senzitivity 66%, specificity 96% for STEMI). ACS was confirmed by 68,4% of this patients and signifficant Coronary Artery Disease (CAD) by 91,7% and percutaneous coronary intervention (PCI) by 73,3% (patients underwent coronarography).

ST elevation were presented by 36% of patients after Admission, diagnosis of STEMI confirmed by 75,5% (senzitivity 75%, specificity 89% for STEMI), ACS was confirmed by 75,5%, significant CAD by by 93,2% and PCI was provided by 77,3% of patients. Between ROSC and Admision ECG is significant difference in STE elevation incidence ($p=0,009$) and QRS latitude ($p=0,003$). Time between both curves was median 60 min, (IQR 25-75) 45-90 min. Change in ST elevation between ROSC and Admission was presented by 23 (30,3%) of patients, compared to group without differences we have no observed significant changes in systolic blood pressure, QRS latitude and shockable rythm.

Left bundle branch block (LBBB) was presetend by 9,6% of patients after ROSC and 11,6% after Admission and has low sensitivity and specificity for STEMI and ACS. Incidence of STEMI is 7,14% after ROSC and 11,8% after Admisssion. ACS is present by 21,4% after ROSC and 17,6% after Admission, significant CAD by 62,5% and 75%.

ST depression are by 24,8% of patients after ROSC and 27,8% after Admisssion, sensitivity and specificity for ACS is low (ACS by 36,1% after ROSC and 45,7% after Admission, significant CAD by 79,2% after ROSC

and 80,6% after Admission and PCI was provided by 52,4% and 51,6%).

Normal ECG has low incidence after ROSC (5,5% after ROSC and 6,85% after Admission). ACS was confirmed by 50% of patients after ROSC and 0% after Admission. (sensitivity for ACS exclusion 100%, specificity 56% after Admission). Significant CAD was by 100% after ROSC (if coronarography was provided) and 12,5% after Admission. PCI was provided by 100% and 20%.

Conclusions:

ST elevation has for STEMI diagnosis no significant higher sensitivity, if they remain after Admission and both ST elevation groups have high incidence of significant CAD and PCI. ST elevation after ROSC has high specificity for STEMI. Normal ECG after ROSC has are not well for ACS exclusion and normal ECG after Admission is very high sensitive for ACS exclusion. LBBB and ST depression has low sensitivity and specificity for ACS and CAD.

#18299 : CPR related trauma from autopsy reports, their incidence and seriousness**Authors:**

Jiri Karasek (1), Betka Blankova (2), Tomas Bartes (3), David Nahalka (3), Andrea Doubkova (3), Tereza Pitasova (3), Jiri Hladik (4), Tomas Adamek (2)

1. Dpt. of Cardiology 3rd Medical Faculty, Hospital Liberec, Charles University, Prague, Liberec, CZECH REPUBLIC

2. Dpt. of Forensic Medicine, Hospital Liberec, Liberec, CZECH REPUBLIC

3. 3rd Medical Faculty, Charles University, Prague, CZECH REPUBLIC

4. Dpt. of Forensic Medicine, University Hospital Kralovske Vinohrady, Prague, CZECH REPUBLIC

Keywords: CRP, autopsy, CPR related injury

Abstract :

Introduction:

CPR related injuries were not properly observed since were established new guidelines for resuscitation (CPR) 2015 with stronger recommendation for bystander and topless CPR. Data were not objectivised by any scale in effort to establish seriousness of injury.

Aim:

To describe incidence and seriousness of injuries related to CPR and compare it by gender, bystander CPR, out vs. in-hospital CPR and try identify factors for seriousness of injury.

Method:

Multicentric study, retrospective analysis of autopsy reports of patients after CPR, cardiac arrests caused by trauma were excluded. We describe damage of particular organs and we objectivised the most serious injury with Abbreviated injury scale (AIS) and summary of all injuries with New injury severity score (NISS).

Results:

We have enrolled 701 autopsy reports, traumatic cardiac arrests were excluded. We have analyzed 628 autopsies: 80,4% men, age median 67 years, out of hospital cardiac arrests 89,2%, bystander CPR 56,8% and cardiac etiology 78,2%. Ribs injury were founded by 94,6%, injury of lung by 9,9%, sternal injury by 62,4%, liver by 2,5% and spleen by 1,8%. Mechanical CPR was provided by 11,5%. Median of the most serious injury was 3 (serious by Abbreviated injury scale) and median of summary of injuries was 13 by NISS - low risk of fatal injury. By out of hospital cardiac arrest was higher incidence of pleural injury and thorax vessels injuries without influence on total seriousness of injury compared to hospital cardiac arrests. Bystanders provided CPR had similar incidence and seriousness of injury like CPR provided only by professional emergency staff, also by mechanical chest device CPR we have observed no differences compared to manually. Women are significantly older ($p=0,0001$), frequency of their injuries are similar to men, but seriousness of their injuries by NISS is significantly higher ($p=0,01$). Patients with life threatening injury (AIS 4 and more) has similar baseline profile to their without injury (AIS 0), except of significant higher cardiac etiology of cardiac arrest by AIS 4+.

Conclusion:

Incidence of CPR related injuries from autopsy reports is very high, but life threatening injuries create only 3%. The highest incidence have injuries of thorax skeleton, especially ribs. There is no difference if patients were resuscitated by bystander or by mechanical chest devices compared to those by professional staff or manually. Women has similar frequency of injuries like men, but significantly more serious by NISS.

#18300 : The feasibility and effectiveness of "Hour-1 Bundle" sepsis treatment in the emergency room: a retrospective before-after study.**Authors:**

Akira Sasaki (1), Machi Yanai (1), Koichi Ariyoshi (1)

1. , Kobe City General Hospital, Kobe, JAPAN

Keywords: hour-1 bundle, sepsis, septic shock

Abstract :

Background. In 2018, "Hour-1 Bundle" was proposed by The Surviving Sepsis Campaign group. It encourages clinicians to complete initial treatment of sepsis and septic shock within 1 hour. However, there is controversy about its feasibility and effectiveness.

Methods. This is a retrospective before-after study conducted at an emergency room (ER) in Kobe City General hospital from September 2017 to April 2019. Five elements of Hour-1 Bundle (measure lactate level, obtain blood cultures before administering antibiotics, administer broad-spectrum antibiotics, begin rapid administration of 30mL/kg crystalloid for hypotension or lactate level ≥ 4 mmol/L, apply vasopressors if hypotensive during or after fluid resuscitation to maintain MAP ≥ 65 mm Hg) were introduced by installing a timer in the ER, putting up original posters, providing short lectures about the bundle to staff members. We compared the outcomes and the compliance rates for the entire 1h bundle elements of consecutive suspected sepsis or septic shock patients treated in the ER and admitted to the ICU during 5 months after implementation of bundle (implementation group, from December 2018 to April 2019) with a control group treated during 6 months before the implementation group (from September 2017 to March 2018). The primary outcome was in-hospital mortality and the secondary outcome was the compliance rates for entire Hour-1 Bundle elements. Statistically significant differences were evaluated by chi-square test or Mann-Whitney U-test. P value < 0.05 was considered significant.

Results. There were 61, 65 patients in the control group and the implementation group with mean ages were 78 (IQR 65-83), 75 (67-85) years old, respectively. Sequential Organ Failure Assessment (SOFA) scores at ICU admission were 8 (IQR 5-11), and 9 (IQR 5-12), respectively. The compliance rates for the entire Hour-1 Bundle elements were 16% in the control group and 40% in the implementation group ($p < 0.05$). In-hospital mortality was 28% in the control group and 40% in the implementation group ($p = 0.15$). Infectious diseases were ruled out in 33% of the control group and 18% of the implementation group after admission based on microbiological investigations and clinical courses. The compliance rates for the conventional 3-hour bundle in the control group and in the implementation group were 70%, 91%, respectively.

Discussions and Conclusions. By introducing Hour-1 bundle to the ER, the compliance rates for the bundle significantly improved. However, it was difficult to make a definite diagnosis of sepsis or septic shock within 1 hour at the ER. No significant reduction of in-hospital mortality was observed. Implementation of novel Hour-1 Bundle in the ER was still difficult and may not improve outcomes of the sepsis or septic shock patients.

Trial Registration / Funding Information (only) :

This trial was approved by research ethics committee at Kobe City General Hospital (no. zn190514). No funding.

#18301 : Implementation of ketamine-propofol (“ketofol”) in a 1 on 4 ratio for adult procedural sedation at a university hospital emergency department – case series report on safety and effectivity

Authors:

Stig Walravens (1), Evi Steen (1), Walter Buylaert (1), Peter De Paepe (1)

1. Emergency Department - University Hospital of Ghent, Ghent, BELGIUM

Keywords: procedural sedation and analgesia, ketofol, emergency department

Abstract :

Background:

Procedural sedation is a frequently performed procedure at the emergency ward and emergency physicians should be capable of performing this safely, effectively and independently. For clinical guidance we composed an easy and unambiguous protocol for procedural sedation applicable for nearly all patients and procedures. Our sedative of choice is a mixture of ketamine and propofol (“ketofol”) in a 1 on 4 ratio. Both ketamine and propofol are known to neutralise each other’s undesirable effects and ketamine adds an analgesic quality. Ketofol has proven effective and safe in studies and is non-inferior to propofol. Though it is most often used in a 1 on 1 ratio, both pharmacological and clinical studies favour a 1 on 4 ratio. We hypothesize our protocol with ketofol 1 on 4 is safe and effective and will serve to facilitate procedural sedation by emergency physicians.

Methods:

All adults presenting at the emergency ward of the University Hospital of Ghent between February 2018 and April 2019 and in need of procedural sedation would be included in a prospective case series study. Informed consent was obtained for both the sedation and the study. Patients with an American Society of Anesthesiologist physical status classification system score (ASA-score) of III or more, with an anticipated difficult airway or intoxicated patients were discussed with the anaesthesiology department to decide the feasibility of sedation in the emergency ward setting. Pregnant patients were excluded. Ketofol 1 on 4 was prepared by mixing 1ml of ketamine (50mg) and 20ml of propofol (200mg) in a single syringe and administrated as a loading dose of 1ml/10kg, followed by a stepwise titration in aliquots of 0,5ml/10kg. Above 65 years the loading dose was halved. Registered patient outcomes were respiratory and hemodynamic events, vomiting, agitation or hallucinations, and amnesia. In addition we measured satisfaction of the physician with the performed sedation.

Results:

Sixty-one patients, between 18 and 89 years old, with an ASA-score ranging from I to III were included. Six respiratory events were registered in as many patients (9,8 %), none of them serious. All involved airway obstruction, alleviated by head tilt and chin lift and with no repercussion on vital signs save one brief episode of desaturation. There were no hemodynamic events. No vomiting was reported. Five patients (8,2%) experienced pleasant hallucinations or dreams and one patient (1,6%) was agitated upon awakening but calmed rapidly without additional medication. Amnesia was present in 58 patients (95,1%). Physician satisfaction rate was 93,4%.

Discussion & conclusions:

Implementation of our protocol ensured amnesia in majority of patients, with a low frequency of complications. Only minor respiratory events and agitation or hallucinations were observed. Respiratory events were reported slightly less than in studies using propofol or ketofol in different proportions. The rate of agitation or hallucinations is similar to that of propofol monotherapy, but lower than studies using ketofol 1 on 1. Our protocol, using ketofol in a 1 on 4 ratio, appears safe and effective and resulted in a high physician satisfaction rate.

Trial Registration / Funding Information (only) :

Trial registration: not applicable. Observational follow-up study of implemented protocol. Funding: no external funding was provided. No involved doctor received grants from commercial firms.

#18303 : Implementing near-peer learning: a descriptive study on resuscitation skills development module for medical students in low to middle income countries.

Authors:

Kaushila Thilakasiri (1), Prasanna Nadarajah (2), Praveen Weeratunga (3), N.A. Sandaruwan Kanchana (2), Chathurani Sigera (4)

1. Health service, Post Graduate Institute of Medicine, University of Colombo, GONAWALA, SRI LANKA
2. Health service, Post Graduate Institute of Medicine, University of Colombo, Colombo, SRI LANKA
3. Health service, Faculty of Medicine, University of Colombo, Colombo, SRI LANKA
4. Health service, Institute for Health Policy, Sri Lanka, Colombo, SRI LANKA

Keywords: emergency medicine, resuscitation, medical student

Abstract :**Purpose of the study**

Most medical curricula still utilize traditional, didactic, lecturer led approaches to resuscitation training. Utilization and research on Near-peer learning (NPL) in lower to middle income settings is limited. Emergency Medicine is a new and emerging specialty in Sri Lanka and has not been included in undergraduate curricula separately. This study evaluated the effectiveness of a skills training course for final year medical students, developed and delivered by postgraduate trainees in Emergency Medicine.

Materials and methods

A convenience sample of 105 (52% of the batch) (37 females, 68 males) final year medical students were selected for this observational study and given a pre-reading material based on European Resuscitation Council (ERC) Guidelines, 1 week prior to pre-course multiple choice questions (MCQ). Students were divided into groups of 14. Each group participated a 30 minute, 4 steps, skills stations on ABCDE assessment (ABCDE), BLS and safe defibrillation (BLS&SD), Airway management in cardiac arrest (AM) and a demonstration on ALS algorithm. All 12 instructors were registrars in Emergency Medicine and instructors or instructor candidates of ERC ALS course. Instructor to candidate ratio was 1:6. Same MCQ was used to assess post course knowledge. Feedback was obtained by Self-administered, online questionnaire.

Results

Mean mark was 77.7% and 53.33% obtained above the mean mark of pre-test. Post-test mean mark was 84.83% and 42.86% obtained above the mean mark of post-test. Comparison of pre and post indicate a significant improvement in the level of knowledge in paired t-test ($p < 0.01$). There was no statistically significant difference between male and female candidates. ($p > 0.05$). Majority of participants rated overall impression of the program as excellent or very good (92%). learning objectives were clear for 31.42%, 50.47% strongly agreed that course content was well planned and organized to allow all students to participate fully, 45.71% agreed course workload was appropriate. Learning environment was non-threatening for 91.42%. Instructors were available and helpful by 98.09%. Instructors effectively used time during class periods 88.57%. Instructors stimulated student interest according to 89.52%. Opportunity to practice a skill on a manikin was considered the most useful aspect. Most common improvement suggested was to include low fidelity simulation-based teaching on dealing with common emergencies. Overall level of confidence in each skill has improved from 3 or below to 4 or above in at least 64.76%. 100% would recommend this course to their peers. Instructors considered that it was great learning opportunity for them to improve their teaching and clinical skills.

Conclusion

This NPL module has enhanced the knowledge and skills of final year medical students on essential emergency skills. Candidates indicated a positive and effective learning experience, which can be implemented cost effectively in low-and-middle income countries, as a learning and development module for both the undergraduates and postgraduates to enhance skills in emergency medicine.

Ethical Approval and informed consent

Not needed

Trial Registration / Funding Information (only) :

None

#18304 : Evaluation of sensitivity and the specificity of Canadian CT head rule and New Orleans criteria in patients with head injur**Authors:**

Amir masoud Hashemian (1), Behrang Rezvani kakhki (1), nasim chobdari (2), sara shamsaei (3)

1. Faculty of Medicine, Emergency Department, Mashhad university of medical sciences, mashhad, IRAN, ISLAMIC REPUBLIC
2. Emergency medicine specialist, Mashhad university of medical sciences, mashhad, IRAN, ISLAMIC REPUBLIC
3. Family medicine, Mashhad university of medical sciences, mashhad, IRAN, ISLAMIC REPUBLIC

Keywords: Head Trauma, CT scan, New Orleans criteria, Canadian criteria

Abstract :

Millions of people around the world are annually under emergency investigation due to severe head injuries. Computed tomography (CT) scans is a diagnostic procedure that can be done for most people. Aims This study is aimed to evaluate the sensitivity and the specificity of Canadian and New Orleans criteria in determining the rate of head injury. Methods To obtain the relationship between clinical symptoms and CT scan results, the required information was obtained by filling out the records and physical examination in the emergency department and the results from the patients were statistically analysed. Data needed to complete the questionnaire was collected from patient, the patient, their concomitant examination, and the information in their medical records. The raw data from the questionnaire was analysed using SPSS version 17 software. In this study, after obtaining the CT scan results, the individuals were classified into two clinical criteria, New Orleans and Canadian, and their sensitivity and specificity were analysed using ROC curve analysis. Results ROC curve analysis data showed that the sensitivity and specificity of New Orleans criteria are 31 per cent and 69 per cent, respectively, and the sensitivity and specificity of Canadian criteria are 76 per cent and 74 per cent, respectively. Data shows that the Canadian curve has a significant difference compared to basic state (P-Value < 0.05). Conclusion Despite abnormal CT scan results in patients with head trauma, there is a significant relationship between headache and a combination of symptoms in patients. The results can be used in decision-making on involved in performing a CT scan. ROC curve analysis also showed that the Canadian criterion has higher sensitivity and specificity for the diagnosis of severe head trauma compared to New Orleans criteria

Trial Registration / Funding Information (only) :

supported and funded by mashhad university of medical sciences

#18305 : Airway management in out of hospital cardiopulmonary resuscitation

Authors:

Jurica Juričan (1), Višnja Neseck Adam (2), Ingrid Bošan Kilibarda (3)

1. , Health Centre Emergency Medical Care , Čakovec, CROATIA

2. Head of emergency department, Clinical hospital Sveti Duh, Zagreb , CROATIA

3. President of the CMA - Croatian Society of Emergency Medicine, Croatian Institute of Emergency Medicine, Zagreb , CROATIA

Keywords: airway, CPR

Abstract :

Aim: The aim of research was to determine the frequency of use of particular airway management methods in patients who underwent cardiopulmonary resuscitation (CPR).

Study design: Retrospective cohort study.

Subjects and methods: A retrospective study included 266 patients on which emergency medical service teams performed CPR during the period from 1st January 2010 to 31st December 2016. The research was conducted by collecting data from medical archives of the Čakovec Health Centre Emergency Medical Care (Hitna medicinska pomoć Doma zdravlja Čakovec), e-Hitna programme of the Institute of Emergency Medicine of Međimurje County (Zavod za hitnu medicinu Međimurske županije – ZHMMŽ) and Hospital Information System (Bolnički informacijski sustav – BIS) programme of the County Hospital Čakovec.

Results: Out of 266 subjects who underwent CPR, 80.8 per cent had their airway secured. Forty-nine patients (18.5%) survived on hospital arrival, of which 48 (22.4%) had their airway secured. The results have shown that there is no significant difference in the outcome, i.e. survival upon hospital arrival, in correlation to airway management treatment. Out of 48 subjects who survived to the hospital, 28 (58%) survived the next 24 hours. There was also no significant difference in surviving 24 hours after an out-of-hospital cardiac arrest (OHCA) in relation to used airway management methods.

Conclusion: The research has shown that the choice of airway managing methods does not affect the outcome of CPR in patients who have suffered OHCA.

Keywords: airway management, endotracheal intubation, supraglottic airway devices, out-of-hospital cardiac arrest.

#18306 : Clinical presentation of infections in the emergency department in patients older than 75 years. Are there differences according to the presence of fever?

Authors:

Ferran Llopis (1), Carles Ferre (1), Javier Jacob (1), Elena Fuentes (1), Concepcion Martinez (1), Ignasi Bardes (1)

1. Emergency Department, Hospital Universitari de Bellvitge, Barcelona, SPAIN

Keywords: Infection, emergency, fever, temperature

Abstract :**Introduction**

Infections represent up to 15% of the visits attended in the hospital emergency departments (HED) and the prevalence has increased in the last decade, especially in the elderly population. Due to the physiological changes that occur in aging, the clinical presentation in this population group is sometimes atypical and fever is frequently not recorded.

Objective

To analyze if there are differences in the clinical presentation of infections in elderly patients depending on the existence of fever.

Methodology

Multicentric descriptive, prospective, observational study of patients older than 75 years with infection treated in 69 HED in our country. We analyzed the clinical presentation and outcome according to the temperature ($\geq 37.5^{\circ}\text{C}$ or $< 37.5^{\circ}\text{C}$).

Results

We recorded 1,662 episodes of infections: 958 (58%) respiratory, 371 (22%) urinary, 189 (11%) abdominal and 114 (7%) skin and soft tissue. The temperature was documented in 1,634 (98.3%) episodes, 426 (25.63%) $\geq 37.5^{\circ}\text{C}$ (29.2% men, 23.2% women). When comparing these episodes with the 1,208 episodes with a temperature $< 37.5^{\circ}\text{C}$, statistically significant differences were observed, respectively, in the following parameters: antibiotic consumption the previous 30 days (19.2% vs. 24%, $p = 0.043$) and previous 90 days (35.8% vs. 42.3%, $p = 0.019$), heart rate (96.88 beats per minute $\pm 20, 18$ vs $86,17 \pm 18,99$, $p < 0,001$) and respiratory (22,15 breaths per minute $\pm 6,87$ vs $20,65 \pm 7,85$, $p = 0,003$), systolic blood pressure (130,02 mmHg $\pm 27,73$ vs $134,37 \pm 26,97$, $p = 0,005$) and mean arterial pressure (99.90 mmHg $\pm 19,79$ vs $103,01 \pm 18,95$, $p = 0,004$), value of C-reactive protein (10.92 mg/dL $\pm 9,38$ vs $8,11 \pm 8,75$, $p < 0,001$) and destination (discharge home 17.61% vs 32.53%, conventional hospital admission 58.68% vs 48.26%; $< 0,001$). We did not observe statistically significant differences nor in the Charlson neither Barthel index, institutionalization or hospital admission in the previous 3 months, the Glasgow scale score on arrival at the HED, lactate or procalcitonin determination, the source of infection, mortality in HED or at 30 days or in the 30-day readmission rate between the two groups. In the multivariate analysis, only the heart rate maintained the statistical significance in favor of the group with a temperature $\geq 37.5^{\circ}\text{C}$ (crude odds ratio 0.97 (95%CI 0.96-0.98), adjusted odds ratio 0.98 (95%CI 0.97-0.99); $p < 0,001$).

Conclusions

Only in one of every four patients older than 75 years with infection treated in HED we document an increase in temperature, together with other hemodynamic alterations. However, we don't objective differences in the source of infection or the prognosis according to the temperature.

#18307 : Pentraxin 3 Level in Acute Migraine Attack with Aura: Patient Management in the Emergency Department**Authors:**

Mehmet Tahir Gokdemir (1), Gul Sahika Gokdemir (2)

1. , Health Sciences University, Gazi Yasargil Research And Training Hospital, Diyarbakir, TURKEY

2. Physiology department, Dicle University Faculty of Medicine, Diyarbakir, TURKEY

Keywords: Pentraxin 3, Migraine Attack, Emergency Department, Aura

Abstract :**ABSTRACT**

Objectives: Based on the possible roles of inflammation and an impaired immune system in the pathogenesis of migraine, pentraxin 3 (PTX3) levels, as an inflammation parameter, may increase during acute migraine attacks. No previous studies have investigated the relationship between acute migraine attack and serum PTX3 status. Therefore, we investigated the state of inflammation in patients who presented to the emergency department (ED) with a complaint of headache and received a diagnosis of migraine. We investigated the PTX3 level and other routine inflammatory markers (high sensitivity C-reactive protein [hsCRP], and neutrophils). We also investigated the relationship between the clinical presentation, PTX3 level, and other routine inflammatory markers in the emergency management of these patients.

Methods: The study included 44 patients (group 1) who presented to the ED due to a migraine attack with aura and 44 controls (group 2) with similar demographic characteristics. Migraine was diagnosed according to the classification of the latest diagnostic criteria of International Headache Disorders (ICHD-1) accepted by the World Health Organization and World Neurology Federation. The basis of the diagnosis of patients who presented with headache was the story of the patient. Therefore, a detailed medical history, including details of the neurological symptoms, was obtained from all cases.

Results: The mean age was 36.52 ± 7.91 years in group 1 and 34.93 ± 8.50 years in group 2 ($P = 0.366$). The hsCRP level was slightly higher in group 1 than in group 2 ($P = 0.967$). The WBC count was $8.82 \pm 2.10 \times 10^9/L$ in group 1 and $7.85 \pm 2.04 \times 10^9/L$ in group 2. The mean PTX3 level was 11.57 ± 3.99 ng/mL in patients who presented at the ED with a migraine attack, and 4.59 ± 1.28 ng/mL in controls. The differences values of WBC and PTX3 between the two groups were significant (Respectively; $P = 0.031, P < 0.001$). However, according to pearson correlation test there was no any association between PTX3 and other inflammatory markers (CRP and WBC). ROC analyses indicated significant results for PTX3 as a marker for acute migraine attack. It had a sensitivity of 93% and specificity of 84% at a cut-off value of 5.80 ng/mL.

Conclusion: We hypothesized that plasma levels of PTX3 would be elevated in patients presenting to the ED due to an acute migraine attack. The majority of patients in the study were middle-aged women. This is the first study to investigate plasma levels of PTX3 in patients with acute migraine. Our results suggest that high levels may be helpful in the differential diagnosis of acute migraine and may also be associated with vascular deterioration. The high levels observed in this study suggest that endothelial dysfunction plays a role in the pathogenesis of acute migraine. PTX3 as a biomarker may be used as an additional examination to the current subjective criteria to support the diagnosis of patients presenting to the ED with an acute migraine attack. However, further extensive studies are needed to support this assessment.

#18310 : Nonspecific Complaints in the Emergency Department – A Systematic Review

Authors:

Kemp Kirsi (1), Reija Mertanen (1), Leila Niemi-Murola (2), Lasse Lehtonen (2), Maaret Castren (1)

1. Department of Emergency Medicine and Services, Helsinki University Hospital, and Emergency Medicine, Helsinki University, HUCH, Helsinki, FINLAND

2. University of Helsinki, HUCH, Helsinki, FINLAND

Keywords: Emergency Department, Mortality, Nonspecific Complaint, Adult, Emergency Services, Length of Stay

Abstract :

ackground Nonspecific complaint (NSC) is a common presenting complaint in the emergency setting, especially in the elderly population. Individual studies have shown that it is associated with significant morbidity and mortality. This systematic review aims to draw a synthesis of reported outcomes for patients presenting with NSC.

Methods We conducted a literature search for publications, abstracts and conference presentations from Ovid, Scopus and Web of Science for the period of past 20 years. Included were studies with adult patients presenting to the Emergency Medical Services or Emergency Department with NSC. 2057 studies were screened for eligibility and quality was assessed with the SIGN assessment for bias tool. We excluded any low-quality studies resulting in 9 studies for quantitative analysis. We analyzed included studies for in-hospital mortality, triage category, emergency department length of stay, admission rate, hospital length of stay, intensive care admissions and revisitation rate and compared outcomes to patients presenting with specific complaints (SC), where data was available. We grouped discharge diagnoses by ICD-10 categories.

Results We found that patients presenting with NSC were mostly older adults. Mortality for patients with NSC was significantly increased compared to patients presenting with SC [OR 4.22 (95% CI 1.39-12.88)]. They were triaged as urgent less often than SC patients [OR 2.10 (95% CI 1.06-4.15)]. Emergency department length of stay was increased in two out of three studies. Hospital length of stay was increased by 1-3 days. Admission rates were high in most studies, 55 to 84%, and increased in comparison to patients with SC [OR 4.93(95% CI 1.97-12.31)]. These patients seemed to require more resources than patients with SC. There was no significant increase in intensive care admissions. Data was insufficient to make conclusions regarding revisitation rates. Discharge diagnoses were spread throughout ICD-10 main chapters, infections being the most prevalent.

Conclusions Patients with NSC have a high risk of mortality, their care in the Emergency Department is slower and requires more resources than for patients with SC. We suggest that NSC should be considered a major emergency presentation.

Trial Registration / Funding Information (only) :

The protocol has been registered with Prospero ID CRD42019123552 The authors report no conflict of interest

#18314 : A retrospective, descriptive study of the physical examination of patients whose clinical diagnosis is an arrhythmia in the out-of-hospital setting in the Community of Madrid**Authors:**

Miguel Santiuste Garcia (1), Enrique Claudio Romero (1), Maria Jesus De Marcos Ubero (1), Miriam Uzuriaga Martin (2), Eva Hidalgo Gonzalez (3), Felipe Alfonso Jimenez Pedreño (3), Javier De Andrés (1), Lucia Gonzalez Torralba (1)

1. Nursery, Summa 112, MADRID, SPAIN

2. , Summa 112, Madrid, SPAIN

3. Medicine, Summa 112, MADRID, SPAIN

Keywords: # Physical exploration # Arrhythmias # Summa 112 # Emergency #

Abstract :

The Emergency Medical Service of Madrid (SUMMA 112) is the outpatient medical emergency service of the Regional Ministry of Health of the Community of Madrid. Its scope of competences includes homes and work emergencies in the city of Madrid and all emergencies in the rest of the Community.

Taking into account all of the above, it was decided to conduct a retrospective descriptive study in the specific period of the first semester of 2017 based on the clinical records of SUMMA 112. There were 3752 clinical records with ICD 9 corresponding to some diagnosis of some type of arrhythmia. It was decided to exploit a sample of 20%, which corresponded to a figure of 750-800 medical records. Finally, data from 827 clinical histories were collected, of which 787 were considered valid, a figure that represented the final N of our analysis. This analysis is intended to describe, in a representative way by the sample size, the exploration Physics of patients who are finally diagnosed with an arrhythmia in the Community of Madrid. For this, we requested, first, authorization to the Management and to the Management of the SUMMA 112 and, second, accreditation to the Departments of Clinical Documentation and Information Technology, for the revision of histories and the exploitation of the obtained data.

Data were collected from a total of 787 clinical records with ICD 9 MC corresponding to some type of arrhythmia.

On physical examination, it seemed essential to collect data on cardiac auscultation and pulmonary auscultation.

In 274 (34.81%) the cardiac auscultation was regular and in 401 (50.95%), it was irregular. In a significant number of cases, 113 (14.35%) are not reflected, in the clinical history, data on cardiac auscultation.

Regarding pulmonary auscultation, it was normal in 492 cases (62.51%), with wheezing 47 (5.97%). Heart failure data, with crepitations below mean fields, appeared in 137 cases (17.40%) and data of severe left heart failure, with crackles above mid-range fields, in 13 (1.65%). In 98 cases (12.45%), pulmonary auscultation is not reflected.

Again this data seems fundamental since the criteria that determine the hemodynamic instability of the arrhythmias are both clinical and exploratory and are fundamental to determine if the arrhythmia is well or poorly tolerated hemodynamically.

According to the heart rate presented by patients (Table 12), following the usual division of arrhythmias in adults, the patients reviewed had tachycardia (HR > 100 bpm) in 457 cases (58.06%), presented bradycardia (HR ≤ 60 bpm) 120 cases (15.24%). In 171 cases (21.72%) the heart rate was normal (61 to 100 bpm) and in 39 cases (4.95%) this data is not recorded.

Therefore, we can deduce that a significant percentage of patients, who could reach up to a fourth or fifth of them (depending on how strict we are when applying the above criteria), would present clinical and/or exploratory data of hemodynamic instability.

In these sections of AC and AP we were again struck by the absence of registration in medical records in a very high percentage, above 14% and 12% respectively.

#18315 : Artificial intelligence outperforms early warning scores at detecting sepsis: a retrospective Danish study**Authors:**

Simon Meyer Lauritsen (1), Mads Kristensen (2), Katrine Meyer Lauritsen (3), Marianne Johansson Jørgensen (4), Jeppe Lange (4), Bo Thieson (5)

1. Department of Clinical Medicine, Aarhus University, Enversion A/S, Aarhus, DENMARK
2. , Enversion A/S, Aarhus, DENMARK
3. Department of Clinical Medicine, Aarhus University, Department of Endocrinology and Internal Medicine, Aarhus University Hospital, Aarhus, DENMARK
4. Department of Clinical Medicine, Aarhus University, Department of Research, Horsens Regional Hospital, Horsens, DENMARK
5. Department of Engineering, Aarhus University School of Engineering, Enversion A/S, Aarhus, DENMARK

Keywords: Sepsis, Clinical decision support systems, Machine learning, Medical informatics, Early diagnosis, Electronic health records

Abstract :**Background:**

Sepsis is a life-threatening condition, and it is essential that the healthcare system quickly identifies patients and treats them adequately. Unfortunately, the early detection of sepsis remains a challenging problem, and even experienced physicians have difficulties in detecting sepsis early and accurately. We aimed to develop an Artificial Intelligence-based Early Warning Score System (AI-EWS) for the early detection of sepsis that is better than the currently used Modified Early Warning Scores (MEWS) and Sequential Organ Failure Assessment (SOFA).

Methods:

In this register study, we included health data from the years 2010 to 2017 on all citizens 18 years or older with residency in one of four Danish municipalities (Odder, Hedensted, Skanderborg, and Horsens). All relevant hospital contacts from multiple hospitals within the region were identified by the unique national social security system number (1,002,450 contacts). 754,179 non-acute outpatient contacts and 89,202 inpatient contacts with a duration of less than six hours were removed. 134,983 contacts with no episodes of suspected infection were removed leaving 24,076 inpatient contacts included for analysis. After inclusion each inpatient contact underwent a binary classification process to denote them as either *sepsis-positive* or *sepsis-negative*. The classification was made based on patients meeting the gold standard for sepsis based on the Third International Consensus Definitions for Sepsis (Sepsis-3). 1,635 (6.8%) inpatient contacts were classified as sepsis positive. We included data about biochemical blood tests, vital signs and glasgow coma scores from the electronic health record.

We developed the AI-EWS early sepsis detection model as a deep neural network composed of an embedding layer followed by a temporal convolutional network (TCN). The TCN has four temporal blocks, each with 540 filters of kernel size 10. The dilation rate of the convolutional filters was exponentially increased for each of the stacked temporal blocks. The AI-EWS was trained using Adam optimization, with a learning rate of 0.0005 and a batch size of 200.

The AI-EWS was validated using 5-fold cross-validation. As comparative measures, we used the area under the receiver operating characteristic curve (AUROC) and the area under the precision-recall curve (AUPRC). The model was compared with TOKS (Tidlig Opsporing af Kritisk Sygdom), a Danish MEWS variant, and SOFA.

Results:

The following results are reported three, six, and twelve hours before sepsis with mean values and 95% confidence intervals. AI-EWS: (AUROC: 0.88(0.85;0.91), 0.83(0.79;0.87), 0.82(0.79;0.87); AUPRC: 0.41(0.40;0.43), 0.37(0.34-0.39), 0.30(0.26;0.33)), SOFA: (AUROC: 0.77(0.74;0.79), 0.73(0.71;0.74), 0.70(0.65;0.75); AUPRC 0.18(0.16;0.19), 0.16(0.15;0.18), 0.13(0.11;0.16)), and TOKS: (AUROC: 0.68(0.67;0.70), 0.59(0.58;0.59), 0.57(0.55;0.58); AUPRC: 0.12(0.10;0.14), 0.09(0.07;0.10), 0.10(0.09;0.10)). Furthermore, the AI-EWS reduced the number of false positives relatively by 84.6% and 79.4% compared to TOKS and SOFA, respectively, at the same sensitivity of 0.4.

Discussion and conclusions:

The AI-EWS outperformed the SOFA and TOKS in the early detection of sepsis, with an increase in AUROC by 29.4% and AUPRC by 241.7% when compared to TOKS, the currently used early warning tool in Denmark. We conclude that the AI-EWS could be used to improve clinical utility by enabling earlier sepsis interventions and should be tested in a prospective randomized trial.

Trial Registration / Funding Information (only) :

Trial Registration: Not registered. Register study. Funding: This work was supported by the Innovation Fund Denmark (case number 8053-00076B). Ethical approval and informed consent: Not needed

#18320 : Understanding the perceptions of emergency physicians and general surgeons with regards to the diagnosis, management and the use of POCUS in acute cholecystitis**Authors:**

Bao Yu Geraldine Leong (1), Peter Glen (2), Edmund Kwok (3), Brandon Ritcey (3), A Sheik (4), Michael Woo (5)

1. Department of Emergency Medicine, Changi General Hospital, Singhealth , Singapore, SINGAPORE
2. Department of Surgery, University of Ottawa, OTTAWA, ON, CANADA
3. Department of Emergency Medicine, University of Ottawa, OTTAWA, ON, CANADA
4. Department of Radiology, University of Ottawa, OTTAWA, ON, CANADA
5. Department of Emergency Medicine, University of Ottawa, OTTAWA, CANADA

Keywords: POCUS, acute cholecystitis, biliary ultrasonography, emergency department

Abstract :**INTRODUCTION:**

Patients presenting with acute cholecystitis to the emergency department will often have to wait for a diagnostic radiology performed ultrasound (US). Point of care ultrasonography (POCUS) with targeted images of the gallbladder has the potential to assist in early identification and expedite management. Our objectives are to identify the clinical features and the potential role that POCUS may have for emergency physicians (EPs) and general surgeons (GS) in the diagnosis of acute cholecystitis in the emergency department.

METHODS:

An electronic survey with questions relating to diagnosis, management and use of biliary POCUS in patients with acute cholecystitis was devised. The survey was pilot tested by two EPs and two GS. Staff EPs and GS at an urban academic hospital were invited to participate in the survey using a modified Dillman method as part of a quality improvement project. Descriptive statistics were used to analyze the data.

RESULTS:

The response rate for EPs was 76% (59/78) and GS was 68% (17/25). Both EPs and GS used a constellation of clinical signs and symptoms, laboratory and radiological investigations for the diagnosis of acute cholecystitis. Only 22% of EPs and 18% of GS were confident in interpreting US images for acute cholecystitis with most not reviewing or interpreting radiology performed US images in the course of patient care. Although most EPs (95%) utilize POCUS in their daily practice, only 39% of EPs perform biliary POCUS, citing limited exposure and training and non-acceptance by GS as main barriers to use. None of the GS perform biliary POCUS themselves and 70% did not feel comfortable using biliary POCUS to diagnose acute cholecystitis. In three different clinical scenarios involving patients presenting with acute cholecystitis in the emergency department with POCUS findings presented, over 80% of ACS respondents were willing to accept consultation from EPs while awaiting radiology US and 44% were willing to admit in a typical scenario prior to radiology US with only one GS willing to take to the OR without radiology US. GS identified the following that would improve acceptance of POCUS in the diagnosis of acute cholecystitis - improved training and decreased operator variability, access to POCUS images, and clear written interpretation of POCUS images on the medical record, recognizing that POCUS is not a replacement for pre-operative imaging but to improve ED length of stay (LOS) and expedite ED management.

CONCLUSIONS:

Our survey has identified important clinical and imaging features for the diagnosis of acute cholecystitis in the emergent setting by EPs and GS, especially with regards to expectations and perceptions of the use of biliary POCUS. Both EPs and GS have identified a willingness to incorporate POCUS for patients with acute cholecystitis to potentially improve ED LOS. Quality improvement initiatives that include education, training, and change in work processes can now be directed to incorporate POCUS in the diagnosis of acute cholecystitis for both EPs and GS.

#18322 : The analysis of cardiopulmonary arrest cases in the population of the North area of Suceava County, Romania: impact and level of knowledge**Authors:**

Alina Popescu (1), Alin Iacob (2), Constantin Mihai Parasca (2), Liliana Paraschiva Lazar (3), Ionut Cobziuc (4)

1. Firefighter/paramedic, The Emergency Situation Inspectorate of Suceava County, Radauti Fire Department, Radauti, ROMANIA
2. Firefighter , The Emergency Situation Inspectorate of Suceava County, Radauti Fire Department, Radauti, ROMANIA
3. Volunteer, Radauti Municipal Hospital, Suceava County, Radauti, ROMANIA
4. Firefighter , The Emergency Situation Inspectorate of Suceava County, Suceava, ROMANIA

Keywords: cardiac arrest, basic life support, cardiopulmonary resuscitation, training

Abstract :

Background: The cardiopulmonary arrest (CPA) is one of the main causes of sudden death worldwide. The initiation of cardiopulmonary resuscitation (CPR) maneuvers together with early defibrillation can increase the chance of survival of the patient in CPA by more than 50% if they are in the first 3 - 5 minutes after the CPA is installed. In such a situation time is critical, for each minute of delay from the occurrence of CPA to defibrillation, the chance of survival of the victim drop by 7 - 10%. It is therefore very important that first aid training be offered to the population in order to ensure an optimal first response and to rapidly access the 112 emergency number.

The purpose of this study is to assess the need to create educational programs for the population in order to reduce mortality due to CPA cases not resolved on time.

Material and method: For this purpose, the authors analyzed the incidence of CPA victims assisted by Mobile Emergency Service for Resuscitation and Extrication (SMURD) from Radauti Fire Department, in the North area of Suceava County, Romania, a specialized unit who services a population of 82.234 people, concurrently with the creation of an opinion poll among the population aimed at assessing the level of knowledge of first aid measures and the interest in acquiring information and skills in this field. The research was carried out by following several variables: the CPA cases assisted by the SMURD medical first aid teams from Radauti Fire Department from 2015 to 2018, the age groups and sex victims, the basic life support maneuvers (BLS) offered to the patient before the arrival of the medical crew and the urban/rural environment. The authors also followed the level of education of the population targeted regarding the provision of the first aid in medical emergencies and the recognition of a person in CPA.

Conclusions: The CPR training level of population is the main factor influencing the health of any community. Fast access to the emergency medical system for a CPA patient is always influenced by factors such as the availability of medical first aid crews, response time and distance to the place of request. That is why implementation of CPR training programs and assistance in understanding BLS maneuvers among the population of the North area of Suceava County is the first step towards saving lives and increase the survival rate of CPA victims.

#18323 : Comparison of a subjective triage and Emergency Severity Index**Authors:**

Jan Bydžovský (1)

1. Emergency Department, Hospital České Budějovice, České Budějovice, CZECHREPUBLIC

Keywords: triage, subjective, Emergency Severity Index, undertriage, overtriage

Abstract :

Background: A three-level subjective triage was used to sort patients at the Emergency Department of University Hospital Motol, Prague, until 2018. P1 priority was defined as an emergency (a life- and/or health-threatening condition) to be seen by a physician immediately, P2 as an urgent case to be seen within an hour and P3 as conditions where the care can be delayed according to the current capacity. This was replaced by an objective triage using Emergency Severity Index v. 4 in 2018. Results of both approaches were compared during a one-month period.

Methods: Triage nurses were instructed to triage all the patients using both conventional subjective triage (P1-P3) and ESI v. 4 (P1-P5) and record both the priorities during December 2017. Former subjective P1 priority was replaced by P1 and P2 priorities, P2 by P3 and former P3 by new categories P4 and P5. Their decision making was supported by a paper ESI flow-chart and a computer application.

Results: Both priorities were recorded in 1,010 out of total 1,782 patients (56.7 %), 376 out of them were admitted to the hospital (37.2 %). The average priority using a subjective triage was 2.37 (median 2) and 3.11 using ESI (median 3). The correlation between both priorities was 0.71 ($p < .00001$). The new ESI priority was, in comparison to the previous subjective triage, lower in 62.9 %, the same in 35.0 % and higher in 2.1 %. A priority obtained by a subjective triage corresponded to ESI as stated above in only 62.2 % cases, in 33.7 % cases (340 cases, 139 out of them were admitted to the hospital, i.e. 40.9 %) it can be evaluated as a possible undertriage and in 4.1 % cases as an overtriage.

Discussion & Conclusions: Despite inevitable errors when using any objective triage system, a subjective triage, although done by an experienced triage nurse, might be burdened by errors in approximately 37 % cases, therefore a more sensitive five-level triage system using objective criteria and values is highly recommended.

#18325 : Diagnostic value of Coronary Artery Disease Consortium and updated Diamond–Forrester scores in predicting obstructive coronary artery disease among emergency department patients with chest pain**Authors:**

YOSEP SHIN (1), Ahn Shin (1), Un Woo LEE (1)

1. Department of Emergency Medicine, Asan Medical Center, SEOUL, KOREA

Keywords: chest pain, coronary artery disease, emergency department, pretest probability, risk assessment

Abstract :

Objective Assessing the pretest probability of coronary artery disease (CAD) is crucial for patients with chest pain at an emergency department (ED). Current guidelines recommend the use of the updated Diamond–Forrester (DF) method and Coronary Artery Disease (CAD) Consortium models by the American College of Cardiology/American Heart Association (ACC/AHA) and European Society of Cardiology (ESC), respectively. In the situation which methods or models have not been proved definitely superior over others for assessing it, we studied to compare the performance of these models among patients with chest pain presented in the ED.

Methods We compared three scores (DF, CAD consortium basic, and clinical) among 536 patients with chest pain who underwent coronary computed tomographic angiography (CTA). Invasive angiography was performed to confirm the stenosis shown on CTA, if clinically indicated. Primary outcome was the presence of obstructive CAD ($\geq 50\%$ stenosis).

Results Overall, 174 (32.5%) patients were diagnosed with obstructive CAD. CAD consortium clinical model underestimated the prevalence of CAD (26.1%), and on the other hand, DF model overestimated (53.1%). To predict obstructive CAD, the CAD consortium clinical model had superior area under the receiver-operating curve (0.754), followed by the CAD consortium basic (0.736), and finally, the DF model (0.718). Whereas the CAD consortium models more accurately classified patients without any CAD or nonobstructive CAD as low-risk patients, the DF model more accurately classified high-risk patients with obstructive CAD. The net reclassification improvement of CAD consortium basic and clinical models were 15.3% and 18.0%, respectively.

Conclusion Compared with the DF model, the CAD consortium clinical model appears to be superior for the prediction of low-risk patients with $<15\%$ probability of having obstructive CAD. However, this model needs caution when using in high-risk population.

#18326 : Factors prognostic of ruptured hepatocellular carcinoma presenting to the Emergency Department**Authors:**

YOSEP SHIN (1), Ahn Shin (1), June-Sung Kim Kim (1), Sang-Hun Lee Lee (1)

1. Department of Emergency Medicine, Asan Medical Center, SEOUL, KOREA

Keywords: Carcinoma, Hepatocellular; Prognosis; Rupture, Emergencies

Abstract :

Purpose: This study aimed to assess whether characteristics at presentation to the Emergency Department (ED) affected patient outcomes and evaluate factors prognostic of ruptured hepatocellular carcinoma (rHCC), in particular treatment modalities.

Methods: This retrospective study evaluated patients presenting to the ED with rHCC between 2008 and 2017. Parameters associated with 30 and 90 day mortality were investigated. Clinical characteristics and treatments were analyzed.

Results: In total, 121 patients presented to the ED with rHCC. Of these, 29 died within 30 days. Multivariate logistic regression analysis showed that platelet count (odds ratio [OR] 0.98; 95% confidence interval [CI] 0.976–0.995) and prothrombin time (OR 16.20; 95% CI 1.91–137.2) were associated with 30 day mortality rate, whereas the presence or absence of acute abdominal pain and shock at presentation to the ED was not significant. Patients who underwent embolization had a lower 30 day mortality rate than those treated conservatively (OR 0.04; 95% CI 0.001–0.20). Sixty-one patients died within 90 days after presentation to the ED. Serum albumin concentration (OR 0.25; 95% CI 0.09–0.071) was associated with 90 day mortality. Moreover, compared with patients treated conservatively, patients who underwent embolization (OR 0.19; 95% CI 0.06–0.60) and emergency hepatectomy (OR 0.09; 95% CI 0.01–0.99) had lower 90 day mortality rates.

Conclusions: Presence of acute abdominal pain at presentation to the ED did not affect patient outcomes. Early aggressive treatments, such as embolization or emergency hepatectomy, may improve outcomes in patients with rHCC.

#18327 : Assessment of Emergency Physician Clinical Judgment Accuracy in Severity and Discharge Criteria of Patients With Asthma Attack in Comparison with Peak Flowmetry**Authors:**

Mohammad davood sharifi (1), Hamideh Feiz Disfani (2), Roohie Farzaneh (2), Hamid Reza Rahmatzadeh (3), Mohammad davood Sharifi (1)

1. Associate Professor of Emergency Medicine, Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC
2. Assistant Professor of Emergency Medicine, Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC
3. Emergency Physician, Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC

Keywords: Clinical Judgment, Asthma Attack, Peak Flowmetry

Abstract :

Introduction: In the emergency department, admission or discharge decisions are based on clinical symptoms and physical examination. The aim of this study is the comparison of assessment of emergency physician clinical judgment accuracy with actual amount of peak expiratory flow rate (PEFR).

Method: The present research was a cross-sectional study. In this study, 138 patients with asthma by the age of 18 to 55 years were enrolled. From admission to discharge, clinical signs and symptoms were investigated and recorded by emergency physician then the severity of asthma was determined (mild, moderate, severe). In both stages (admission and discharge) the PEFR was measured by the researcher and was compared with severity of asthma (determined based on clinical symptoms and physical examination).

Results: 37.7% of patients were male and the rest were female and the mean age of participants was 49.84 years. The number of mild, moderate and severe asthma cases was 14, 36 and 88, respectively in peak flow meter. The number of mild, moderate and severe asthma cases was 37, 32 and 69, respectively in clinical judgment. In assessment of emergency physician clinical judgment accuracy in severity of asthma in comparison with peak flowmetry the result was the kappa value of 0.231 ($P < 0.001$).

Conclusion: The study showed that clinical judgment of physicians in the emergency department is not a good predictor for prediction of severity of asthma.

#18328 : Assessing Diagnostic Accuracy of Ultrasound Machine in Prescription of Thrombolytic for Patients with Massive Pulmonary Embolism in Emergency Department**Authors:**

Mohammad davood Sharifi (1), Hamideh Feiz Disfani (2), Roohie Farzaneh (2), Amir Masoud Hashemian (1), Mojtaba Fazel (3), Javad Ramezani (4)

1. Associate Professor of Emergency Medicine, Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC
2. Assistant Professor of Emergency Medicine, Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC
3. Emergency Physician, Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC
4. Atherosclerosis Prevention Research Center, Department of Cardiology, Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC

Keywords: Pulmonary thromboembolism, echocardiography, ultrasonography, right ventricular dilatation, Mc Connell's sign, right ventricular hypokinesia, septal paradoxal movements

Abstract :

Introduction: Undiagnosed and untreated Pulmonary Thromboembolism (PTE) results in high mortality. Echocardiographic assessment is a current widely-used technique in diagnosis of PTE. However, patient's instable situation may provoke a need for faster diagnosis and treatment and lack of access to a cardiologist in emergency department might slow down the procedure. The purpose of this study is to assess diagnostic accuracy of ultrasound machine in prescription of thrombolytic for patients with massive pulmonary embolism in emergency department.

Methods: This is a cross-sectional study of patients suffering PTE, attending emergency department of Emam Reza hospital (Edalatian) within six months. All patients were assessed simultaneously by a cardiologist and an emergency medicine specialist. Both diagnostic methods were assessed according to the presence of four signs including right ventricular dilatation, Mc Connell's sign, hypokinesia of right ventricle and septal paradoxal movements. Results were evaluated using SPSS software (V-19). Sensitivity, specificity, positive and negative predictive values were calculated based on echocardiographic results.

Results: 28 patients (17 male and 11 female) were included in the study. The most common abnormal finding was right ventricular dilatation (71% in sonography and 89% in echocardiography), followed by septal paradoxal movements and Mc Connell's sign. Sensitivity, specificity, true positive and negative rates of right ventricular dilatation using sonography were assessed to be 80%, 100%, 100% and 37.5% respectively. And for McConnell's sign the numbers are 67%, 85%, 83%, 69% respectively. In the same manner, the results for hypokinesia of right ventricle are 45%, 75%, 82% and 35%. As for the septal paradoxal movements the results are 57%, 71%, 86% and 36% respectively.

Conclusion: According to the present study, using ultrasonography machine in emergencies is considered an appropriate adjunctive utility accompanying echocardiography in diagnosis of cardiac problems resulting from thromboemboly.

#18330 : Site of infection affects the prognosis performance of endothelial biomarkers to predict clinical deterioration of septic patients in Emergency Department**Authors:**

Thomas Lafon (1), Marie-Angélique Cazalis (2), Arnaud Desachy (3), Valérie Gissot (4), Thomas Daix (5), Franck Verschuren (6), Karim Tazarourte (7), Pierre-François Laterre (6), Christine Vallejo (1), Bruno François (8)

1. Inserm CIC 1435 / Service d'accueil des Urgences, CHU Dupuytren, Limoges, FRANCE
2. Medical Diagnostics Discovery Department , bioMérieux SA, Marcy L'Etoile, FRANCE
3. Réanimation polyvalente, CHU Dupuytren, Limoges, FRANCE
4. Inserm CIC 1415, CHRU de Tours, Tours, FRANCE
5. Intensive Care Unit, Limoges University Hospital, Limoges, FRANCE
6. Departments of Emergency and Intensive Care, Cliniques universitaires Saint-Luc, UCL, Bruxelles, BELGIUM
7. Service médical d'accueil, Groupement Hospitalier Edouard Herriot - Hospices Civils de Lyon, Lyon, FRANCE
8. Intensive Care Unit and Inserm CIC 1435, Limoges University Hospital, Limoges, FRANCE

Abstract :

Background: Early prognostic assessment of septic patients in the Emergency Department (ED) is crucial. Therefore, identification of patients at high risk of organ failure or shock is key to prevent deterioration and reduce mortality. Currently, no prognostic tool seems efficient to identify these patients. The infection site could represent a major factor of heterogeneity in the prognostic performance of biomarkers in septic patients. Thus, we evaluated the prognostic performances of biomarkers to predict the clinical deterioration of patients with sepsis in ED according to their site of infection.

Methods: TRIAGE was an international multi-centre (France and Belgium) prospective observational study (ClinicalTrials.gov: NCT02739152) designed to evaluate a panel of prognostic biomarkers in adult septic patients admitted in ED (SIRS criteria). Blood samples were collected at 0, 6 and 24 hours after ED inclusion. Main outcome was subsequent deterioration (death, ICU admission, 1-point increase of SOFA score) within 72 hours. The diagnosis of sepsis and the evolution criteria were centrally validated by an independent adjudication committee of sepsis experts. The prognostic performances of endothelial biomarkers (sVEGFR2, sUPAR) were assessed according to the site of infection using logistic regression models. AUC were calculated using the DeLong method.

Results: Overall 462 patients were analysed, 124 patients were confirmed as deterioration and 338 patients without deterioration. Sites of infection were mainly lungs (29%), urinary tract (27%) and abdomen / pelvis (25%). Patients with pulmonary infection were significantly more severe (qSOFA, and Charlson score) ($p < 0.001$) than the other patients. These patients were also the ones who deteriorated the most within 72 hours and had a higher D28 mortality ($p = 0.0047$). Expression of biomarkers was significantly associated with the risk of deterioration regardless of the site of infection (Lung: OR = 1.9 [1.24-2.86], Urinary: OR = 2.6 [1.3-5.82], Abdomen-pelvis: OR = 2.4 [1.26-4.97], Others: OR = 1.67 [1.05-2.74], $p < 0.05$). Nevertheless, the predictive performance of short-term deterioration by the biomarkers was higher in patients with urinary and abdominopelvic infections (AUC = 0.70, $sp = 51$, NPV = 95 and AUC = 0.81, $sp = 51$, NPV = 93, respectively) compared to lung infections and other sites of infection (AUC = 0.66, $sp = 19$, NPV = 79).

Conclusion: Although biomarkers were associated with a risk of deterioration of septic patients, the predictive performance of sVEGFR2 and sUPAR was significantly lower in patients with pulmonary infection when compared to those with urinary tract or abdominopelvic infection.

Trial Registration / Funding Information (only) :

ClinicalTrials.gov: NCT02739152

#18331 : Prognostic performance comparison between clinicians and endothelial biomarkers to predict the deterioration of septic patients in Emergency Department**Authors:**

Thomas Lafon (1), Marie-Angélique Cazalis (2), Arthur Baisse (3), Christine Vallejo (1), Karim Tazarourte (4), Pierre-François Laterre (5), Valérie Gissot (6), Bruno François (7)

1. Inserm CIC 1435 / Service d'accueil des Urgences, CHU Dupuytren, Limoges, FRANCE
2. Medical Diagnostics Discovery Department , bioMérieux SA, Marcy L'Etoile, FRANCE
3. Service d'Accueil des Urgences, CHU Dupuytren, Limoges, FRANCE
4. Service médical d'accueil, Groupement Hospitalier Edouard Herriot - Hospices Civils de Lyon, Lyon, FRANCE
5. Departments of Emergency and Intensive Care, Cliniques universitaires Saint-Luc, UCL, Bruxelles, BELGIUM
6. Inserm CIC 1415, CHRU de Tours, Tours, FRANCE
7. Intensive Care Unit and Inserm CIC 1435, Limoges University Hospital, Limoges, FRANCE

Abstract :

Background: Accurate prognostic assessment of septic patients is challenging in the emergency department (ED). Identification of patients at high risk of organ failure or shock could help to prevent deterioration and reduce mortality. Clinician's assessment is based on initial severity, scoring, social context, hospital bed capacity, and on personal experience. The performance of emergency physicians in predicting septic patient's outcome has been scarcely described, and the additional value of a prognostic biomarker has not often been evaluated in the ED. Therefore, we calculated the prognostic performance of emergency physicians to predict clinical deterioration of septic patients during their initial management in the ED and evaluated whether adding biomarkers information could improve this clinical prediction.

Methods: This is an ancillary study of the TRIAGE study (ClinicalTrials.gov: NCT02739152) designed to evaluate a panel of prognostic endothelial biomarkers (sVEGFR2 and sUPAR) in a cohort of adult septic patients admitted to the ED. The analysis was performed on non-severe patients (SOFA<2) of two teaching hospitals. The risk of clinical deterioration was assessed by an adjudication committee composed of three independent emergency physicians (blinded from deterioration outcome) according to the emergency medical records and the first conventional biological and imaging results. This first judgement allowed calculating the clinical emergency physician's performance. Then, adjudicators were unblinded from the results of biomarkers (which helped classifying patients into two groups: "high risk" or "low risk") and were asked to keep or revise their first judgement. This second judgement allowed assessing the additional value of biomarkers. Finally, the performance of biomarkers alone was calculated.

Results: Analyses were performed on 145 patients (age = 50 ± 20 yr; Charlson score: 1.7 [0-3]; SOFA score: 0.5 [0-1]; lactates: 2.03 [1.17-2.41]; site of infection: pulmonary 12.4%, urinary 32.4%, abdominopelvic 34.5% and 30 patients deteriorated (21%). The clinical performance of emergency physicians to predict deterioration was: Sensitivity=80; Specificity=21; Negative Predictive Value=80; Positive Predictive Value=21. Adding the biomarkers improved the clinical prognostic performance of emergency physicians (Sensitivity=90; Specificity=19; Negative Predictive Value =88; Positive Predictive Value =23). Biomarker alone was the best predictor of deterioration (Sensitivity =93; Specificity =50; Negative Predictive Value =97; Positive Predictive Value =33).

Conclusion: This study confirms that predicting the clinical deterioration of septic patients in the ED remains challenging. Adding prognostic biomarkers (sVEGFR2 and sUPAR) to clinical evaluation could be helpful in early assessing the risk of deterioration of septic patients, and safely ruling out patients after ED admission due to its high negative predictive value.

Trial Registration / Funding Information (only) :

ClinicalTrials.gov: NCT02739152

#18332 : 'Hi, is it me you're looking for?'

Authors:

Pourya Pouryahya (1)

1. Casey hospital, Emergency Department, Program of Emergency Medicine, Monash Health, Department of Medicine, School of Clinical Sciences at Monash Health, Monash University, Melbourne, AUSTRALIA

Keywords: ISBAR, introduction, ED, consultant in charge, In charge, phone, Answering in charge phone

Abstract :**Objectives:**

1. Observe the way of introduction and communication of Consultant in Charge (CIC) of Emergency departments (ED) of major hospitals in Australia, when receiving an unknown external phone call.
2. Identifying the factor(s) associated with (in)adequate introductions over the phone
 1. Awareness of need to
 2. hospital policy
 3. Workload
 4. Others

Background and Rationale for study:

- Informal observational data suggest that the consultants-in-charge (CIC)/admitting officers (AO) of Emergency Departments often do not properly introduce themselves or clarify their roles, prior to engaging in a conversations over the phone.
- Other practitioners and family members often do not know to whom they spoke with over the phone.
- This becomes problematic when there is a need to follow up on the information exchanged during the interaction
 - Joint Commission Centre for Transforming Healthcare identified "Inability of sender to follow up with receiver if additional information needs to be shared" as one of the root causes of communication failure in patient handovers. (2014)

What is unknown:

- Are there similar breakdowns in communication between transfers of information between medical and non-medical personnel (family members)?
- With whom does the burden lie for the lack of effective communication between external persons (other practitioners/general public) and ED physicians over the phone?
- If ED staff members are not introducing themselves adequately, are there any identifiable factors that could be addressed?

What is known:

- There is a purported lack of effective communication between external persons (other practitioners/general public) and ED physicians over the phone
- Recently, there has been a movement encouraging doctors to properly introduce themselves to patients, however doctors less often introduce themselves properly to other healthcare staff.
- There is a paucity of available information regarding how doctors introduce themselves over the phone.

#18334 : Prevalence and Utility of Point-Of-Care Ultrasound in the Emergency Department: a prospective observational study**Authors:**

Pourya Pouryahya (1), Koo Mei-Ping (2)

1. Casey Hospital, Emergency Department, Program of Emergency Medicine, Monash Health, Department of Medicine, School of Clinical Sciences at Monash Health, Monash University, Melbourne, AUSTRALIA

2. Medicine, Nursing and Health Sciences, Monash University, Melbourne, AUSTRALIA

Keywords: POCUS, Ultrasound, ED POCUS, Sonography

Abstract :**Abstract**

OBJECTIVE: An observational study on the current diagnostic and procedural utility and impact of point of care ultrasound (POCUS) in Emergency Departments (ED).

BACKGROUND: Point of Care Ultrasound (POCUS) has been recognised as a useful noninvasive, bedside tool, providing additional information as well as its utility in procedural guidance for clinicians. However, its current use in the ED remains unknown.

METHODS: In October 2016, a 31-day prospective observational study was performed in three Monash Health Emergency Departments in Melbourne, Australia. Data regarding patients' presenting complaints, frequency, operators' qualifications, and POCUS module were collected and analysed. Factors associated with diagnostic impacts were identified.

RESULTS: A total of 390 (2.82%) POCUS examinations were performed among 13,822 adult presentations in the three Monash Health EDs during the 31-day study period. 292 (74.9%) cases were retrieved from electronic medical records (Symphony), recorded as Clinician-Performed Ultrasound (CPU); and 98 (25.1%) cases from written records which were collected by research assistants. POCUS was performed as a diagnostic tool in 344 (88.2%) and procedural in 46 (11.8%) cases. eFAST/AAA and BELS were the two most frequently utilised diagnostic modalities. Overall, the majority of diagnostic POCUS cases were indicated for abdominal pain (35.3%), chest pain (14.0%) and trauma (5.8%). Procedural POCUS was most commonly used for vascular access (57.9%), where dyspnoea (21.6%) was the most common presenting complaint. Majority of the cases were performed by FACEMs (fellows of Australasian College of Emergency Medicine) (67.7%).

CONCLUSIONS: Despite known diagnostic and procedural advantages, the prevalence of POCUS in our EDs was found to be lower than what was expected. However, as this is a single network/centre study in a limited period of time, it might have resulted in under-reporting of POCUS use. In our study, POCUS mostly served for diagnostic purposes. Prevalence was shown to be proportional to the level of clinical expertise among the operators. Training and utility of POCUS among physicians should be further advocated and supported.

**#18335 : Reducing Pain in Emergency Department by Using Venous Blood Gas Instead of Arterious Blood Gas (VEINART study):
a multicentric randomized controlled trial**

Authors:

CHAUVIN ANTHONY (1), Ghazali Aiham (2), enrique casalino (3), Nicolas Javaud (2), Sonja Curac (2), Jerome Lambert (4), Patrick Plaisance (5), Damien Roux (6)

1. Emergency Department, APHP, Paris, FRANCE
2. Service des Urgences Adultes, Assistance Publique hôpitaux de Paris, Paris, FRANCE
3. EMERGENCY DEPARTMENT, APHP, PARIS, FRANCE
4. Methodological unity, Assistance Publique hôpitaux de Paris, Paris, FRANCE
5. Emergency Department, PARIS, Paris, FRANCE
6. Critical care department, Assistance Publique hôpitaux de Paris, Paris, FRANCE

Keywords: pain; emergency medicine; blood gas; sampling; randomized controlled trial

Abstract :

Background: Arterial blood gas (ABG) analysis is integral to the assessment of critical illness, providing information on the etiology and severity of a disease process. Despite low rate of complications, the procedure can lead to major vascular damage such as thrombosis or pseudo aneurysm. Moreover, it is a painful procedure that can be challenging to perform. Due to the lack of evidence of benefit for the patient or the health care team of a venous blood gas rather than an arterial blood gas in the absence of suspicion of hypoxemia, arterial blood gas is currently the standard of care for the analysis of acid-base disorders. Indeed, among the university hospitals affiliated to the Paris Diderot University, 4 of the 5 emergency departments (ED) carry out ABG. Demonstration of the superiority of venous sample over arterial sample regarding pain could substantially modify current practices.

Objectives: The main objective of this study was to show the superiority of venous sampling in arterial sampling with respect to the patient's pain related to the collection of a blood gas in EDs.

Materials and methods: We performed a randomized multicenter prospective study that recruited from 4 emergency departments during two months period. Eligible patients were non-hypoxemic patients with an indication of ABG. The randomization and allocation were computer generated. The primary end-point was the average pain, in millimetres, according to a self-measurement (the Visual Analogue Scale), within 3 minutes of the blood sampling between the arterial puncture group and venous puncture group. The secondary end points were the convenience of the sampler, number of attempts needed to obtain a blood gas sample, number of different operators needed to obtain a blood gas sample and failure of the blood gas sampling procedure

Results: 113 patients were included: 55 in the control group and 58 in intervention group. The median [Q1;Q3] maximal pain felt by the patient within 3 minutes after the sampling, among the Visual Analogue Scale was respectively 40 [21;59] in arterial group and 18 [10.5;30] in venous group. The mean difference was 17.9 [CI95 9.6;26.3] ($p < 0.0001$). The prescriber's satisfaction in terms of diagnostic profitability of the blood gas did not differ between the two groups ($p = 0.25$). Success on the first attempt was better in venous sampling: 93% ($n = 53$) success versus 80% ($n = 44$) in the arterial group ($p = 0.073$). But the number of sampler change was the same in each arm ($n = 3$, 5%). Almost half of sampler categorized the sampling as easy ($n = 24$, 44%) or moderately easy ($n = 23$, 41%) in the control group. Majority of sampler categorized the sampling as easy ($n = 30$, 69%) or moderately easy ($n = 16$, 28%) in the intervention group

Conclusion: Venous blood gas is less painful for patients, simpler for the health care team and provides sufficient biochemical information for the doctor in comparison with an ABG.

Trial registration: clinicaltrials.gov, NCT03784664. December, 24th 2018

Trial Registration / Funding Information (only) :

Trial registration: clinicaltrials.gov, NCT03784664. December, 24th 2018

#18337 : The “Stroke Code” effectiveness and safety in a low-resources first-level Emergency Department: results of a 1-year experience.**Authors:**

Simone Bianchi (1), Francesco Prosperi Iovi (1), Gabriele Bandinelli (1), Alessandra Giuello (1), Federico Lisi (1), Chiara Alamanni (1), Michele Lanigra (1), Rita Marino (1), Angela Konze (2), Roberto Carpi (2), Vieri Vannucchi (3), Fererico Moroni (3), Giancarlo Landini (3)

1. Emergency Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY
2. Radiology Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY
3. Internal Medicine Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY

Keywords: Stroke-Code Thrombolysis Emergency Department

Abstract :

Background: Intravenous thrombolysis with tissue plasminogen activator (Alteplase, tPA) is the current standard treatment for ischemic stroke within 4.5 h of symptom onset. A treatment delay decrease benefits and increase risks. Systematic thrombolysis (STL) protocols are currently used in stroke centers around the world to reduce the treatment delay. These models were designed and most applied in tertiary hub hospitals with 24/7 availability of neurology physicians and a dedicated stroke team. The American Heart Association/American Stroke Association (AHA/ASA) “Target: Stroke” initiative guidelines were applied in a first-level Emergency Department (ED), where acute stroke patients are entirely managed by Emergency Physicians (EPs) with only radiology specialists consultants.

Methods: Since 2018 a “Stroke Code” model is been gradually implemented in the ED of the Santa Maria Nuova first-level Hospital in Florence, including key components of the Helsinki model, such as EP, radiologist and laboratory technicians alert since ambulance transport, rapid Triage protocol, rapid EP evaluation, creation of a “stroke bag” with every stroke tool in use, early tPA preparation and infusion in the contrast tomography (CT) area, and prompt data feedback. We collected patients data in a prospective, consecutive stroke registry.

Results: Since protocol activation, from January 2018 to December 2018, 197 patients (mean age 79 ± 15 years, 55% female) admitted to our ED had a diagnosis of ischaemic stroke. Ninety-three (47%) patients arrived before 4.5 hours from symptoms onset, of whom 20 had an absolute contraindication to STL, and 6 had a relative contraindication to STL. After the in-hospital management the stroke diagnosis was confirmed in 163, while 34 (17%) were stroke-mimics. Sixty-three (31% of all patients admitted for new onset neurological deficit, 39% of patients with confirmed stroke, 85% of patients eligible to STL) patients received STL and 8 were sent to hub centre for endovascular treatment. Door-to needle time (DTN) median (interquartile range) was 31 (23-51) minutes. Fifty-two (85%) had a DTN inferior to 60 minutes. At 3-months follow-up, patients treated with STL had significantly lower modified Rankin score (mRs, $1,2 \pm 1,8$ STL vs $3,0 \pm 2,0$ non-STL, $p < 0,001$) and higher recovery rate (return to pre-stroke mRs, 37 (59%) STL vs 26 (41%) non-STL, $p = 0,002$). Three (6%) patients had post-STL haemorrhagic infarction, that ended in no significant disability (mRs 0,0,1 respectively). The performance of the model, in terms of percentage of stroke patients who received STL (32% h8-20 vs 38% h20-8, $p = ns$) and with a DTN time inferior to 60' (83% h8-20 vs 75% h20-8, $p = ns$), was not influenced by night-time arrival. Less than 5% of patients undergone to STL was diagnosed a stroke mimics, none of them experienced any adverse event and they all fully recovered.

Conclusion: EPs can effectively and safely apply the “Stroke Code” model in a low-resource first-level ED. In our experience the Stroke Code model allowed a STL rate in eligible patients and accomplishment of DTN time target comparable to previous data from larger high-resource hospitals.

Trial Registration / Funding Information (only) :

none

#18338 : The “Stroke Code” model in a low-resources first-level Emergency Department**Authors:**

Simone Bianchi (1), Francesco Prosperi Iovi (1), Alessandra Giuella (1), Gabriele Bandinelli (1), Federico Lisi (1), Chiara Alamanni (1), Michele Lanigra (1), Rita Marino (1), Angela Konze (2), Roberto Carpi (2), Vieri Vannucchi (3), Federico Moroni (3), Giancarlo Landini (3)

1. Emergency Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY
2. Radiology Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY
3. Internal Medicine Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY

Keywords: Stroke-Code Thrombolysis Emergency Department

Abstract :

Background: Systemic thrombolysis (STL) protocols are currently used in stroke centres around the world to reduce the treatment delay. These models were designed and most applied in tertiary hospitals with wide availability of neurology physicians and a dedicated stroke team. We brought the American Heart Association/American Stroke Association (AHA/ASA) “Target: Stroke” initiative guidelines in a first-level Emergency Department (ED), where acute stroke patients are entirely managed by Emergency Physicians (EPs) with only radiology specialists consultants.

Methods: In 2018 a “Stroke Code” model was implemented in the ED of the Santa Maria Nuova first-level Hospital in Florence, including key components of the Helsinki model such as EP, radiologist and laboratory technicians alert since ambulance transport, rapid Triage protocol, rapid EP evaluation, creation of a “stroke bag” with every stroke tool in use, early tissue plasminogen activator (Alteplase, tPA) preparation and infusion in the contrast tomography (CT) area, and prompt data feedback. A phone-alert protocol was established with our Territorial Emergency Service (TES): the EP of the TES operative base remotely identify the stroke codes from the ambulance team information and alert the ED. ER nurse apply a dedicated Triage protocol, characterized by the fast confirmation of ongoing deficit and acute (<4.5h) onset and immediate transfer in the emergency room (ER). EPs collect essential anamnestic and clinical data to identify indications and contraindications to STL, while the ER nurses obtain at least one large-bore peripheral venous access, blood test samples and check vital parameters before going to the CT-area. After the non-contrast head CT-scan the radiology consultant give immediately a temporary answer reporting only the presence or absence of intracranial bleedings and/or radiologic STL contraindications, in order to allow the EP to start STL. After tPA bolus the patients undergo a contrast CT-scan. The 1-hour tPA infusion is begun back in the ER. When a large-vessel obstruction is detected, a neuroradiological consultation is performed, and if indicated the patient is transferred to local stroke hub centre for local treatment. Everyone involved in the stroke-code pathway had a specific 2-hour theoretical training, implemented with one high-fidelity in-site simulation. Door-to-needle time (DTN) is registered, and all stroke patients data are collected in a dedicated registry to identify and correct specific delays and monitor activity.

Results: Before the stroke-model application the DTN [mean \pm standard deviation, (interquartile range)] was 76 ± 33 (56-99) minutes. In the first year of stroke code model implementation the DTN was significantly lower 38 ± 26 (20-50) minutes, $p < 0.001$. Patient who received STL were more likely to experience a complete neurological recovery (59% treated vs 41% non-treated, $p = 0.002$). Three (6%) patient had haemorrhagic complications, all of them had an acute stroke final diagnosis, and no one had permanent sequelae (mRS 0, 0 and 1, respectively).

Conclusion: The stroke-code model can be successfully applied after a brief training period in a low-resources first-level ED in order to reduce DTN for acute ischaemic stroke treatment. In our experience the stroke-model performing was associated with a better functional outcome without any clinically relevant harm.

Trial Registration / Funding Information (only) :

none

#18339 : A primer for a Tuscany stroke registry: looking back to go straight to the target**Authors:**

Simone Bianchi (1), Alessandra Giuello (1), Francesco Prosperio (1), Gabriele Bandinelli (1), Michele Lanigra (1), Vieri Vannucchi (2), Giancarlo Landini (2), Roberto Carpi (3)

1. Emergency Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY
2. Internal Medicine Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY
3. Radiology Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY

Keywords: Stroke Registry

Abstract :

Background: Intravenous thrombolysis with tissue plasminogen activator (Alteplase, tPA) is the current standard treatment for ischemic stroke within 4.5 h of symptom onset. A treatment delay decrease benefits and increase risks. Systematic thrombolysis protocols are currently used in stroke centers around the world to reduce the treatment delay. These models were designed and most applied in tertiary hospitals with wide availability of neurology physicians. We applied the American Heart Association/American Stroke Association (AHA/ASA) "Target: Stroke" initiative guidelines in a first-level Emergency Department (ED), where acute stroke are entirely managed by Emergency Physicians (EPs) and radiology consultants.

Methods: A prospective, quality improvement, observational registry was started in 2018, collecting every patient with an exit diagnosis from the Santa Maria Nuova Emergency Department (ED) of acute ischaemic stroke. The registry is daily updated by Emergency Physicians (EP), Radiologist and Internists, and it contains basic demographic, clinical and throughput informations. National Institutes of Health Stroke Scale (NIHSS), modified Rankin Score (mRs) were available in most patients and retrospectively calculated for patients missing this variable. The registry collects a number of time metrics, including symptom onset time, hospital arrival time, time of imaging, and eventually Alteplase (tPA) administration time. For inpatient strokes, the time of onset was used as the arrival time. Door to needle (DTN) time was, defined as the time taken in minutes from recorded arrival time in ED to the recorded time of tPA bolus administration, door to computed tomography (DTCT) time, defined as time taken in minutes from arrival time in ED to the time of non-contrast CT images answer, and door-to-blood test (DTBT) time, defined as the time taken in minutes from recorded arrival time in ED to blood test result time, were calculated. A 3-months electronic follow-up was performed for every patient to assess mortality, hospital readmission, haemorrhagic complications and mRs. A telephonic follow-up was performed when needed to complete the registry.

Results: From 1st January to 31st December 2018 we registered 198 patients with acute ischaemic stroke: 95 (48%) arrived before 4.5 hours from symptoms onset. Sixty-four patients received tPA and 8 were transferred to the hub centre for urgent thrombectomy. Patient who received systemic or local thrombolysis were more likely to experience a complete neurological recovery (59% treated vs 41% non-treated, $p=0.002$). Three (6%) patient had haemorrhagic complications, but no one had permanent sequelae (mRs 0, 0 and 1, respectively). Patient managed with a code-ictus protocol received tPA significantly earlier (25 ± 9 minutes in code ictus vs 64 ± 42 non code ictus, $p<0.001$). The delays in tPA treatment were mainly due to Triage failure to recognize the acute neurological deficit resulting in a posticipated EP visit, EP non-diagnosis (posterior stroke), and the treatment delay after the contrast-CT scan.

Conclusion: A stroke registry is a useful tool to monitor time-dependent patient management and it can be used to find pitfalls and delays, in order to allow EP to improve their throughput patient management and outcome.

Trial Registration / Funding Information (only) :

none

#18340 : High-fidelity simulation for Stroke Code model implementation in a low-resources first-level Emergency Department**Authors:**

Simone Bianchi (1), Francesco Prosperi Iovi (1), Alessandra Giuello (1), Federico Lisi (1), Gabriele Bandinelli (1), Michele Lanigra (1), Roberto Carpi (2), Angela Konze (2), Rita Marino (1)

1. Emergency Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY
2. Radiology Department, Santa Maria Nuova Hospital, AUSL Toscana Centro, Italy, Firenze, ITALY

Keywords: Stroke-Code High-fidelity Medical Simulation

Abstract :

Background: Since the birth of the Helsinki stroke model, stroke protocols are becoming a standard in stroke centres around the world, in order to reduce the delay in tissue plasminogen activator (Alteplase, tPA) administration. The application of these models brings together different settings, professionals, competences and targets. In 2018 a "Stroke Code" model was implemented in the ED of the Santa Maria Nuova first-level Hospital in Florence, including key components of the Helsinki model and, such as EP, radiologist and laboratory technicians alert since ambulance transport, rapid Triage protocol, rapid EP evaluation, creation of a "stroke bag" with every stroke tool in use, early tPA preparation and infusion in the contrast tomography (CT) area, and prompt data feedback. Simulation is in emerge

Methods: Each professional figure involved in the program had a specific 2-hours lesson and one practical training with high-fidelity in-site simulation. A volunteer actor was used as stroke patient. The ED staff managed the case from the arrival in ED until tPA administration. For safety reasons, the actor was inserted in the ED software as "code ictus", and invasive manoeuvre and CT scan were only verbalized and not really performed. The whole patient management was recorded on a video-camera. After the scenario a group debriefing was performed. For organization reasons, every new staff member that joined our ED after the training could only receive theoretical lessons. Door-to-needle time (DTN) was registered, and all stroke patients data were collected in a dedicated registry to identify and correct any treatment delay and monitor the ongoing activity.

Results: Before introducing the stroke code model the DTN [mean \pm standard deviation, (interquartile range)] was 76 ± 33 (56-99) minutes. In the first year after the introduction of the stroke code model the DTN and the DTN variability were significantly lower 38 ± 26 (20-50) minutes, $p < 0.001$. The greater reduction in DTN and variability was found in the first months after the training program, and was gradually lower in the last months of observation.

Conclusions: Inserting the stroke code model with a single-day training with a frontal lesson and a high-fidelity simulation scenario brought a reduction in DTN and DTN variability. The benefits were immediate but seem short-lasting. This is probably due to the very high human turn-over present in our ED, most of all for nurses and technicians, that caused a growing number of team components to have only theoretical training. A simulation training program seems to have the best results in terms of competence acquisition and team performance in the stroke code model implementation.

Trial Registration / Funding Information (only) :

none

#18341 : Is LP useful in suspected SAH?

Authors:

Pourya Pouryahya (1), Alastair Meyer (1), Easaw-Mamutil Naomi (2), Yan Tan (2), Hui (Glen) Teng (2)

1. Casey hospital, Emergency Department, Program of Emergency Medicine, Monash Health, Department of Medicine, School of Clinical Sciences at Monash Health, Monash University, Melbourne, AUSTRALIA

2. Monash university, Monash University, Melbourne, AUSTRALIA

Keywords: Subarachnoid haemorrhage; Emergency department; Lumbar puncture; headache; CT brain

Abstract :

Utility of lumbar puncture (LP) after a normal brain computed tomography (CT) scan in patients presenting to the emergency department with suspected Subarachnoid Haemorrhage: a retrospective cohort study

Background:

The diagnostic approach for patients presenting to EDs with severe, sudden-onset headache suspected for SAH remains challenging.

Modern third generation computed tomography is shown to be extremely

sensitive in identifying subarachnoid haemorrhage when it is carried out

within six hours of headache onset and interpreted by a qualified radiologist, therefore may eliminate the need for lumbar puncture. However, some clinicians still perform LP even after a normal CTB even within this time frame, which is an invasive, time consuming procedures with known complications (i.e. post LP headache, Infection and bleeding at the site, Transient or permanent Neurological complications etc).

Objective: To assess the utility of LP in emergency patients being evaluated for possible subarachnoid haemorrhage after a negative non-contrast brain CT scan

Method:

We conducted a retrospective data analysis in three emergency departments in Monash Health in Victoria, Australia, focussing on patients presenting with concerning headache and being evaluated for possible subarachnoid haemorrhage between June 2013 and June 2018. Patients were excluded if they had a history of recurrent headaches or were discharged without further investigations. A diagnosis of Subarachnoid haemorrhage was defined by any of subarachnoid blood on computed tomography, xanthochromia in cerebrospinal fluid, or any red blood cells in final tube of cerebrospinal fluid collected with positive results on cerebral angiography.

Results:

Of 5746 enrolled eligible cases, 2039 (35.5%) were further investigated with a CT brain based on history and examination. 397 patients (19.5%) were diagnosed with SAH after CT, while 1642 (80.5%) had a negative CT scan. Of this remaining cohort, 388 (23.5%) patients underwent LP, and neither of them demonstrated a true positive SAH.

The 1254 patients with a negative CT scan whom did not undergo a lumbar puncture were followed up for 6 months by hospital and community record review. In this cohort of patients, 401 cases were lost to follow-up owing to a lack of available data. Of those followed-up, 1 patient died from haemorrhage stroke during his third hospitalisation.

Conclusion:

LP is not required in all patients with suspected subarachnoid haemorrhage with a negative CT scan and it should be decided on a case by case basis. Further analysis is to determine if there are defining characteristics that eliminate the need for LP which can result in unnecessary risks and complications, with minimal benefit in diagnosing SAH.

#18343 : Assessment of the validity and reliability of a new triage tool for avalanche mass casualty incidents: the cardiac arrest avalanche triage tool.**Authors:**

Francesca Verginella (1), Jeffrey Franc (2)

1. Medicine, Universita' del Piemonte Orientale, Novara, ITALY
2. University of Alberta, Department of Emergency Medicine, Edmonton, CANADA

Keywords: avalanche, disaster, triage,

Abstract :

INTRODUCTION: The widely used standard avalanche triage algorithm (Bogle 2010) does not include provision for mass casualty incidents (MCI) nor does it detail the use of extra corporeal membrane oxygenation (ECMO). This study aimed to produce a reliable and validated triage tool for use in avalanche MCI that included updated recommendations for the use of ECMO– the Cardiac Arrest Avalanche Triage Tool (CAAV).

METHODS: The CAAV tool was developed by a focus group of four experts in avalanche rescue. To assess the validity of the tool, four other experts who had never seen the tool used the tool to assigned a triage category to 45 simulated cases and to compare to their own expert opinion. Reliability of the tool among these experts was calculated using the Fleiss test. To assess the accuracy of the tool in a broad population of rescuers an online simulation was given to avalanche rescue providers who were asked to triage 39 simulated cases using the CAAV tool: results were compared to the triage categories given by the four experts.

RESULTS: The CAAV tool is available at www.medstatstudio.com/studies/project.php?pid=19 . When experts used the tool it agreed with their expert opinion in 97% of cases (95% confidence interval: 93% - 99%). Inter-rater reliability for the experts was 0.86. Among the 115 avalanche rescue providers who completed the online simulation, triage assignment using the tool was correct in 63% (95% confidence interval: 57% to 68%). Only 43% of the non-expert participants had accuracy of greater than 80%.

CONCLUSIONS: In this study the CAAV tool showed adequate validity and reliability in expert hands. However, in the broad population of rescuers the tool showed poor accuracy. Further refinement of the tool and simulation testing procedure is clearly necessary before moving towards trials in the field.

Trial Registration / Funding Information (only) :

None

#18344 : Audit about Management of New Onset Atrial Fibrillation in the Emergency Department**Authors:**

khalid Abdalla (1), Michael Sweeney (1)

1. Emergency Medicine, Sligo University Hospital, Sligo, IRELAND

Abstract :**Introduction:**

Atrial fibrillation is the commonest arrhythmia faced in clinical practice. Initial approaches to management of recent onset AF include controlling the rate and/or converting the rhythm. It depends on 3 factors: patient stability, symptoms' duration and prevention of thrombo-embolic events.

Objectives:

To Reviewing current practice in Sligo University Hospital.
Assessing if this follows current guidelines.
What improvements could be made if guidelines are not being met.
Introduce a pathway to assist ED clinicians.

Methods:

Over a period of 6 months, 29 patients were identified with new onset AF with symptoms less than 48 hours.
Data was collected from ED and medical notes of patients who presented to the Emergency Department of Sligo University Hospital.
Study was categorised into groups according to:

Age
Main presentation
Reason for admission
Length of admission

Inclusion criterias were: Patients with new onset AF confirmed on ECG and Symptomatic for less than 48 hours.

Results:

age groups: majority between 50 - 80 years 72.4%
Male to female ratio 1:1.
All patients received rate control medication apart from 8 patients who were cardioverted.
Patients received anti-coagulation treatment after admission.
CHA2DS2-VASc score was documented in 34.4%.
Main presentation was chest pain (37.9%).
2 patients were discharge on the same day after electrical cardioversion.
more than half of the patients were discharge within 5 days (51.7%).
41.4% stayed in the hospital for more than 5 days (non medical issues).
Electrical cardioversion was attempted in 8 patients, Successful in 5 patients, of which 2 where discharged on the same day.
93,1% were admitted.
Most of patients admitted were chemically cardioverted 88.8%.

Conclusion:

Based on these results it is evident that initial management for AF has been achieved in ED.
CHA2DS2-VASc score is important to be document to assess the need for anti-coagulation.
A new pathway has been introduced with consideration of cardioversion for eligible patients with period of observation to reduce number of admission.
Cardiology OPD follow up for patients discharged from ED.
Repeat audit should be carried out within 3-6 months to see if changes were implemented.

#18345 : Direct Admission to the Intensive Care Unit from the Emergency Department and Mortality in Critically ill Hematology Patients**Authors:**

Olivier Peyrony (1), Sylvie Chevret (2), Anne-Pascale Meert (3), Pierre Perez (4), Achille Kouatchet (5), Frédéric Pène (6), Djamel Mokart (7), Virginie Lemiale (8), Alexandre Demoule (9), Martine Nyunga (10), Fabrice Bruneel (11), Christine Lebert (12), Dominique Benoit (13), Adrien Mirouse (8), Elie Azoulay (14)

1. Emergency Department, Hôpital Saint-Louis, APHP, Paris, FRANCE
2. Biostatistics Department, Hôpital Saint-Louis, APHP, Université Paris Diderot, Paris, FRANCE
3. Intensive Care Unit, Institut Jules Bordet, Brussels, BELGIUM
4. Intensive Care Unit, Hôpital Brabois, Vandoeuvre Les Nancy, FRANCE
5. Intensive Care Unit, Centre hospitalier régional universitaire, Angers, FRANCE
6. Intensive Care Unit, Hôpital Cochin, Paris, FRANCE
7. Intensive Care Unit, Institut Paoli Calmettes, Marseille, FRANCE
8. Intensive Care Unit, Hôpital Saint-Louis, Paris, FRANCE
9. Intensive Care Unit, Hôpital Pitié-Salpêtrière, Paris, FRANCE
10. Intensive Care Unit, Hôpital Victor Provo, Roubaix, FRANCE
11. Intensive Care Unit, Hôpital André Mignot, Versailles, FRANCE
12. Intensive Care Unit, Centre hospitalier départemental Vendée, La Roche Sur Yon, FRANCE
13. Intensive Care Unit, Hôpital universitaire de Ghent, Ghent, BELGIUM
14. Intensive Care Unit, Hôpital Saint-Louis, APHP, Université Paris Diderot, Paris, FRANCE

Keywords: Emergency department; Direct admission; Intensive Care Unit; Hematological malignancy

Abstract :

Background: The aim of this study was to assess the benefit of direct ICU admission from the emergency department (ED) compared to admission from wards, in patients with hematological malignancies requiring critical care.

Methods: Post hoc analysis derived from a prospective, multicenter cohort study of 1,011 critically ill adult patients with hematologic malignancies admitted to 17 ICU in Belgium and France from January 2010 to May 2011. The variable of interest was a direct ICU admission from the ED and the outcome was in-hospital mortality. The association between the variable of interest and the outcome was assessed by multivariable logistic regression after multiple imputation of missing data. Several sensitivity analyses were performed: complete case analysis, propensity score matching and multivariable Cox proportional-hazards analysis of 90 day-survival.

Results: Direct ICU admission from the ED occurred in 266 (26.4%) cases, 84 of whom (31.6%) died in the hospital versus 311/742 (41.9%) in those who did not. After adjustment, direct ICU admission from the ED was associated with a decreased in-hospital mortality (adjusted OR: 0.63; 95%CI: 0.45-0.88). This was confirmed in the complete cases analysis (adjusted OR: 0.64; 95%CI: 0.45-0.92) as well as in terms of hazard of death within the 90 days after admission (adjusted HR: 0.77; 95%CI 0.60-0.99). By contrast, in the propensity score matched sample of 402 patients, direct admission was not associated to in-hospital mortality (adjusted OR: 0.92; 95%CI: 0.84-1.01).

Conclusions: In this study, patients with hematological malignancies admitted to the ICU were more likely to be alive at hospital discharge if they were directly admitted from the ED rather than from the wards. Assessment early predictors of poor outcome in cancer patients admitted to the ED is crucial so as to allow early referral to the ICU and avoid delays in treatment initiation and mis-orientation.

**#18346 : High-fidelity simulation versus low-fidelity simulation training for physicians' cardiopulmonary resuscitation training:
A systematic review and meta-analysis****Authors:**

Claudia Febra (1), Sandra Pais (2), Ana Macedo (3)

1. Training department, Hospital da Luz Lisboa, Lisboa, PORTUGAL
2. Departamento de Ciências Biomédicas, Universidade do Algarve, Faro, PORTUGAL
3. Departamento de Ciências Biomédicas, Univerdidade do Algarve, Faro, PORTUGAL

Keywords: In-hospital cardiac arrest; resuscitation; cardiopulmonary resuscitation; high-fidelity simulation; medical education

Abstract :

Background—High –fidelity resuscitation training is near to become the gold standard for training physicians on cardiopulmonary resuscitation techniques. Nevertheless, its effectiveness remains unknown.

Objective—The objective of this study is to identify and synthesise the best available evidence for the effectiveness of high versus low fidelity simulation in physicians' resuscitation training.

Data source—A systematic search of Pubmed and Embase was conducted considering the period from 1st January 2008 to 31st December 2017.

Study selection—The research manuscripts evaluating High-fidelity simulation compared with low-fidelity in the training of physicians for CPR were considered for analysis.

Data extraction—Outcomes including written tests results, megacode scoring and other cardiopulmonary resuscitation (CPR) performance assessments were evaluated. The GRADE (Grades of Recommendation, Assessment, Development and Evaluation) approach was used to evaluate the overall quality of evidence for each outcome. A fixed effect model was used, assuming standard mean as the effect measure.

Results—545 papers were eligible from the literature search and 17 were included in the analysis (16 RCT's and one paired cohort study). Meta-analysis of skills performance evaluation using megacode scoring evidenced a moderate benefit for High-fidelity simulation training when compared with low fidelity programs [SMD 0.54; 95% CI –0.36 to 0.73]. Similarly, written test results were better for High-fidelity simulation learners than for low fidelity simulation trainees [SMD 0.47; 95% CI 0.21 to 0.73]. Time to first compression favored adding some experimental intervention to High-fidelity simulation instead of High-fidelity alone [SMD 0.53; 95% CI 0.39 to 0.68].

Conclusion—The training of physicians on CPR with the use of High-fidelity simulation programs results in best technical and non-technical skills performances and increases theoretical knowledge.

Trial Registration / Funding Information (only) :

PROSPERO 2018 CRD42018086699

#18348 : After Concussion Return to Normality (ACoRN)**Authors:**

Mark Lilley (1), George Oommen (2), Sarah Abernethy, Tim Bradnock, Lesley Nish, David RHC working Group (3)

1. Paediatric Major trauma Coordinator, GGC NHS, Glasgow, UK
2. ED consultant, GGC NHS, Glasgow, UK
3. RHC ACoRN working group, GGC NHS, Glasgow, UK

Keywords: Return to learn after concussion/head injury

Abstract :

After Concussion, Return to Normality (ACoRN)

Background

The most common injury presentation to the Paediatric Emergency Department in Glasgow is head injuries. This data was presented at NHS Greater Glasgow and Clyde's child safety and unintentional injury strategic group. Agreement was made that the evidence for concussion in children should be reviewed. Concussion is becoming more recognised within the Paediatric population (0-16yrs). It has remained topical in the media with reports from footballers stating a higher incidence of early dementia symptoms, possibly related to concussion injuries in their youth. Although much has been produced on this subject, the emphasis has historically been safe return to sport. Scottish Rugby Union have produced excellent guidance on this subject. There is however very little advice for post concussion within the UK for children. A multi-agency short life working group was convened with a remit to consider the evidence and literature for a timeline of safe return to normal activity. The membership of the group included Paediatric Emergency Nurse Practitioner, Paediatric Emergency Consultants, Health Improvement Lead for Public Health, Education, General Practitioner, Paediatric General Surgeon and Paediatric Neurology Consultant. Draft versions of the leaflet were also discussed with the paediatric neurosurgical team. This led to the production of an "After Concussion, Return to Normality" (ACoRN) advice leaflet.

Methods

A literature search was undertaken on 20/08/2018 to search for **Evidence-based guidance (particularly timescales) on return to education, return to screen time, how long not to be left unsupervised, return to sport in children/teenagers who have experienced a mild concussion. A key emphasis for this was to produce advice on safe return to education. This search was shared with the short life working group and three face-to-face meetings allowed for discussion, production and review of a discharge advice leaflet which incorporated the signs of significant head injury as described by the Scottish Intercollegiate Guidelines Network (SIGN110) on one side and the concussion advice for discharge on the other. The traffic light system (ref) was decided to be used to provide a three stage advice route for return to normality. The leaflet also encourages the child and their families to discuss at each stage and seek agreement to move to the next of the three stages until completed.**

Conclusion

It is recommended that the concussion guidance is shared and implemented with Primary Care, all education departments across NHS Greater Glasgow and Clyde, all Emergency Departments and Minor Injury units and with any other relevant organisations. All children with any head injury will be discharged with the current head injury advice leaflet as recommended by national guidelines but also supplemented with this concussion advice.

Trial Registration / Funding Information (only) :

n/a

#18353 : Assessing the Validity of Simple Objective Rapid Triage Scale (SORTS) with the existing Emergency Severity Index (ESI) 4.0**Authors:**

Shweta Ashok (1), Adil Syed (2), Saravanakumar S (3)

1. Consultant, Department of Emergency Medicine, Dr. Mehta's Hospital, Chennai, INDIA
2. Group Head & Consultant, Department of Emergency Medicine, Dr. Mehta's Hospital, Chennai, Chennai, INDIA
3. General Manager , Dr. Mehta's Hospital, Chennai, INDIA

Keywords: Emergency department, triaging, sorting, rapidly, five level system, emergency severity index, observational study, validity, resuscitation, objective.

Abstract :**Background**

Emergency medicine departments around the world use different triage systems to assess the severity of the patients. Internationally, five – tier triage systems have shown to be a valid and reliable method, with greater precision for categorizing patients in hospital emergency departments when compared to three tier or four tier systems. These triage systems are either defined by time or based on the number of resources required for patient stabilisation. At Dr. Mehta's emergency department, we have designed a Simple, Objective, Rapid Triage Scale, SORTS, that assess the patients Airway Breathing Circulation in a shorter period, reducing the door to triage and resuscitation time. The purpose of this study was to Validate the newly designed, Simple Objective Rapid Triage Scale (SORTS) with the existing Emergency Severity Index (ESI), version 4.0 at the Dr.Mehta's hospital emergency department (ED).

Methods & Methodology

This was a prospective observational study performed over a period of 2 months at Dr. Mehta's Hospital ED. All adult ED patients except out of hospital cardiac arrest, pregnant patients in labour and those requiring palliative care, were included in the study. Sample size of 336 was determined by **Debbie.A.Travers et al**, with 68% sensitivity and 91% specificity, precision of 0.05sensitivity (95%CI) . Patients were independently triaged by the duty nurse using ESI scale and a single primary observer using SORTS. Based on the completion of sample size, Validity was assessed by calculating percentages for over- triage, under triage, sensitivity and specificity.

Results and Discussion

Out of 347 patients independently triaged by both the systems, the door to triage time for both were tabulated and mean of ESI system is 6.18minutes and SORTS is 1.35minutes, SD of 1.36 & 0.81 respectively ($p < 0.0001$). 6% of the patients belonging to priority - II were under-triaged into level III. 12.9% of the study population requiring hospitalisation were under triaged by SORTS whereas 4.8% were over triaged. Based on Mann Whitney's test, SORTS was found to be 71.3% sensitive, 91.05% specific and 82.13% accurate with a positive predictive value of 86.82%.

Conclusion

The SORTS has been found to be easier and valid as compared to ESI triage scale as it minimises door to triage time in ER, accurately identifying severe cases earlier and aiding in rapid stabilisation, reducing length of stay in hospital.

Trial Registration / Funding Information (only) :

Did not receive any specific funding.

#18354 : Applying lean methodology in the emergency department: reducing inappropriate high-sensitivity cardiac troponin I testing in patients complaining of chest pain**Authors:**

Roberto Tarenzi (1), Silvia Paiardi (2), Marta Pellegrino (2), Elena Corrada (3), Antonio Voza (2)

1. , Department of internal medicine, University of Pavia, Pavia, ITALY

2. , Emergency Department, Humanitas Research Hospital, Rozzano, ITALY

3. , Non-invasive Cardiology Unit, Cardio Center, Humanitas Research Hospital, Rozzano, ITALY

Keywords: Lean methodology, emergency medicine, emergency department, chest pain, acute coronary syndrome, high-sensitivity cardiac troponin I

Abstract :

Background: chest pain is the reason for emergency department (ED) admission in 5-9% of cases. Cardiac origin has been reported in up to 45% of ED admission for chest pain. In our ED there are several predefined panels of laboratory tests that allow to improve and speed up the diagnostic process based on the prevalent symptomatology shown by the patient (for example: chest pain, abdominal pain, sepsis). In our ED we observed an increasing number of high-sensitivity cardiac troponin I (hsTnI) tests in patients complaining of chest pain. We thought that the main reason for this increase was the presence of hsTnI in the predefined chest pain test panel; furthermore, said panel didn't differentiate between typical and atypical chest pain. The ideal management of patients experiencing chest pain includes not only avoiding misdiagnosis, but also avoiding unnecessary lab tests and therefore inappropriate hospitalizations. Based on lean methodology applied to emergency medicine, in order to further increase the quality and safety of patient care by reducing inappropriate testing, from June 2017 we decided to remove hsTnI from the predefined chest pain test panel.

Methods: we decided to conduct a retrospective, observational, monocentric study with the primary outcome of verifying whether removing hsTnI from the chest pain test panel had led to a reduction in its dosage requests over a six-month period (June-December 2018), compared to June-December 2016 in which hsTnI still appeared in the chest pain test panel. In these two periods of time we first considered the total number of patients admitted to our ED and then those who had admission and discharge diagnoses, according to the International Classification of Diseases, Tenth Edition (ICD-10), compatible with presentation of chest pain; we also considered patients with ICD-10 diagnoses not related to chest pain presentation in which hsTnI testing was requested.

Results: from June to December 2016 ED admissions were 29441 and hsTnI dosage was requested 7021 times (mean value 0.24), in the same six-months period of 2018 admissions were 30182 with 5160 hsTnI dosage requests (mean value 0.17). In 2016 and in the same six-month period cited above, patients with ICD-10 diagnosis compatible with presentation of chest pain were 1728 with 2089 hsTnI dosage requests (mean value 2.21, considering multiple tests in the same patient); in 2018 out of 1697 patients only 1752 HsTnI were requested (mean value 1.03). The same can be seen in patients with ICD-10 diagnosis not related to chest pain presentation: in 2016 out of 26307 admission hsTnI dosage was requested 4932 times (mean value 0.19), in 2018 out of 27034 admissions, hsTnI dosage was requested 3408 times (mean value 0.13).

Discussion and conclusion: the removal of hsTnI from the predefined chest pain test panel led to a decrease of inappropriate hsTnI dosage requests without causing missed diagnoses of acute coronary syndrome (ACS). Applying this kind of methodology probably forced ED physicians to better evaluate chest pain characteristics, EKG findings and patient medical history.

#18355 : Left holding the baby: reasons and outcomes of neonatal emergency department attendance, a 2-year retrospective observational study in a UK tertiary hospital**Authors:**

Yishen Wang (1), Peter Heinz (2)

1. Cambridge University, Faculty of Medicine, Cambridge, UK
2. CUHFT, Addenbrooke's Hospital, Cambridge, UK

Keywords: Paediatrics, neonatal, pathways

Abstract :**Background and Objective**

Neonates attending the paediatric emergency department (ED) pose challenges. The presenting problems differ from older children and are unique to this age group, prescribing requires attention to detail and consideration of physiological quirks and even resuscitation algorithms are irritatingly idiosyncratic. So who are these babies that are brought to the ED by their parents, what serious illness needs consideration and why are they attending the ED in the first place? We present a large data set with a view of identifying attendance patterns, population characteristics and potential pathway issues.

Methods

Retrospective review of all neonatal attendances (age less than 28 days) to the paediatric ED of a UK tertiary hospital during a two year period (01/04/2017 to 31/03/2019) from the electronic patient record database for age at presentation, presenting complaint, source of referral, length of stay in ED and disposal. Where necessary, individual records were accessed and any missing information added. Acuity of visits was determined by the need for admission, duration of in-patient stay and follow-up arrangements.

Results

1,699 attendances involving 1,467 neonates were identified, constituting 3.81% of all paediatric ED attendances (n=44,571) and 16.2% of all births in the hospital (n=10,515). The peak of attendance occurred at age 2-3 days, with over 60% presenting with jaundice. Monthly attendance mirrored the birth rate, there was no seasonal variation. The most common presenting problems were jaundice, respiratory symptoms, weight-loss and vomiting. Only 23.7% of all visits were self-referred. Most referrals came from midwives (37.3%), other primary healthcare professionals (24.1%) and after contacting the UK's 111 helpline (9.83%). 5.1% of babies came by emergency ambulance. As expected, the ratio of acute to non-acute visits was higher in referrals by ambulance (r=1.00) and primary healthcare professionals (r=0.808) compared to self-referrals (r=0.728) but not significantly so. On average, these infants spent 165 minutes in the ED. There were 111 breaches of the 4-hour target (6.42%). The admission rate was 42.1%, and the top reasons for hospital admissions were jaundice (44.3%), feeding problems (18.2%), respiratory (11.3%) and infection including suspected sepsis (7.97%). 32.9% of neonates admitted were discharged within 48 hours of admission. 4 deaths including two neonatal sepsis deaths were identified, both of which had disseminated Herpes-Simplex Virus (HSV) infection.

Discussion

ED attendance is common during the neonatal period, notably over half of the visits are for non-acute complaints and do not require immediate medical intervention except parental reassurance.

The large number of jaundice-related attendances calls for a review of the jaundice care pathway. We will be discussing possible interventions that may help reduce unnecessary attendances in the ED like feeding support following postnatal discharge and improved awareness of neonatal normal variants by primary care professionals.

We suggest that the current referral algorithms for the UK's national telephone advice service 111 may significantly increase inappropriate ED attendances.

The neonatal deaths due to sepsis were both caused by HSV infection, our local incidence matching published evidence and we postulate Aciclovir to be first-line treatment in neonates presenting with sepsis to ED.

Trial Registration / Funding Information (only) :

Ethics approval not required as this was a service evaluation project.

#18357 : New approaches to risk stratification in sepsis: prospective evaluation of different prognostic scores in emergency medicine department setting.

Authors:

VALENTINA BEUX (1), VALERIA CARMELLO (2), ADRIANA BOCCUZZI (2), ALESSANDRA MACCIOTTA (3), ALESSANDRO DE SALVE (2)

1. University of Turin, , Turin, ITALY

2. EMERGENCY DEPARTMENT AND HIGH DEPENDENCY UNIT, AOU SAN LUIGI GONZAGA ORBASSANO (TO), ORBASSANO, ITALY

3. University of Turin, Department of Clinical and Biological Science , Turin, ITALY

Keywords: SOFA, qSOFA, SIRS, lactates, procalcitonin, sepsis, mortality

Abstract :

Background

The usefulness of sepsis-related scores in providing bedside criteria for early prediction of poor outcomes in patients with suspected infection remains controversial, in spite of the recent changes in sepsis definition and guidelines.

We evaluated the prognostic performance of Systemic Inflammatory Response Syndrome (SIRS), Sequential Organ Failure Assessment (SOFA), quick-SOFA (qSOFA), Modified Early Warning Score (MEWS), lactates and procalcitonin assessed at the arrival (within 12h) in the Emergency Department (ED) in septic patients.

Methods

Prospective single-centre study on adults patients arriving at the ED with sepsis from April 2018 to January 2019. Outcomes were mortality at 30 and 60 days(d) and High Dependency Unit or Intensive Care Unit (ICU) admission.

Results

A total of 469 patients were included; the overall mortality was 16% at 30d and 19% at 60d; 17% of patients were admitted to the ICU.

Patients who died had higher SOFA (4 [2-7] vs 2 [1-3], $p < 0,001$), qSOFA (1 [1-2] vs 0 [0-1], $p < 0,001$), MEWS (4 [1,5-5] vs 2 [1-4], $p < 0,005$) and lactates (2,25 [1-5] vs 1,4 [0,9-2,1], $p = 0,005$) compared with patients who survived. Similar trend was shown for procalcitonin (1,06 [0,23-7,03] vs 0,49 [0,17-2,57], NS); conversely, SIRS score did not show significant difference between non survivors and survivors.

SOFA (3 [1-6] vs 2 [1-4], $p = 0,002$), procalcitonin (3,78 [0,35 -9,19] vs 0,49 [0,16-2,24], $p < 0,001$) and MEWS (4 [2-4,5] vs 1 [0-3], $p = 0,005$) were statistically significant predictors of ICU admission, showing higher values in ICU patients.

For the prediction of 30 days mortality, SIRS showed the highest sensitivity (76%), followed by SOFA (74%), procalcitonin (69%), MEWS (55%), qSOFA (50%) and lactates (50%). Lactates showed the highest specificity (91%) followed by qSOFA (87%), MEWS (65%), SOFA (61%), procalcitonin (53%) and SIRS (32%).

Similarly, for the prediction of 60 days mortality, procalcitonin showed the highest sensitivity (65%), followed by qSOFA (48%), SIRS (44%), SOFA (41%), lactates (40%) and MEWS (34%); SOFA showed the highest specificity (92%), followed by qSOFA (88%), lactates (94%), MEWS (85%), procalcitonin (53%) and SIRS (62%). For ICU admission again SIRS showed the highest sensitivity (75%) and the lowest specificity (31%). qSOFA had a sensitivity of 63% and a specificity of 50%. SOFA had a sensitivity of 62%, a specificity of 58%. MEWS showed a sensitivity of 54% and a specificity of 65%. Sensitivity and specificity of lactates remained around 60%. Procalcitonin showed a sensitivity of 58% and specificity of 78%.

For the outcome mortality SOFA had the best prognostic performance (AUC 30d 0,76 (0,7-0,8); 60d 0,74 (0,7-0,8)) followed by qSOFA (AUC 30d 0,72 (0,6-0,8); 60d 0,73 (0,7-0,8)) followed by lactates (AUC 30d 0,71 (0,6-0,8); 60d 0,65 (0,5-0,7)). For the outcome ICU admission procalcitonin had the highest AUROC (0,66 (0,56-0,64), followed by SOFA (0,61 (0,5-0,7)) and MEWS (0,60 (0,5-0,67)).

Conclusions

SOFA, qSOFA and lactates assessment in the early phases after arrival in the ED have a good performance in detecting patients at risk of mortality for sepsis. Procalcitonin is useful to select patients that will need ICU admission.

Trial Registration / Funding Information (only) :

this research was not supported by funding

#18361 : A RETROSPECTIVE STUDY ABOUT EPIDEMIOLOGY OF ATRIAL FIBRILLATION (AF)

Authors:

Raquel Cantón Cortés (1), Nuria Vicente Gilabert (2), Francisco Manuel Rodríguez Rubio (2), Carlos Máximo Jaime Moreno (3), Marta Vicente Gilabert (4)

1. emergency, Hospital Comarcal del Noroeste (Caravaca de la Cruz, Murcia), Murcia, SPAIN
2. Emergency, Hospital Comarcal del Noroeste (Caravaca de la Cruz, Murcia), Murcia, SPAIN
3. Emergency, Hospital Universitario Mútua de Tarrassa (Barcelona), Barcelona, SPAIN
4. Internal Medicine, Hospital Clínico Universitario Virgen de la Arrixaca , Murcia, SPAIN

Keywords: Atrial fibrillation, Epidemiology, Emergency service, Arrhythmias, Cardiac

Abstract :

Introduction. Atrial fibrillation is the most frequently found sustained arrhythmia in the emergency department. About 25% of the world's population over 40 years age will suffer it across their life. It appears in all ages, being more frequent in the elderly. Atrial fibrillation is associated with an important morbimortality in the form of stroke, thromboembolism and heart failure.

Objective. The aim of the present study was to describe the epidemiological profile for atrial fibrillation.

Methods. A descriptive, observational and retrospective study in a Hospital Comarcal Del Noroeste Murcia (a rural Centre of Spain) was described. In this study were included all patients with atrial fibrillation as diagnosis in emergency room from the 1st January to the 31th December 2017.

Results. The sample under study was constituted by 209 patients: 103 men (49.28%) and 106 women (50.72%). The average age was 73 years, with a minimum age of 32 and a maximum age of 98. 55.5% had previous diagnosis of atrial fibrillation: 62.07% paroxysmal AF, 30.17% permanent AF, 7.76% persistent AF.

The distribution of personal risk history in the sample was: 82.78% older than 60 years, 70.81% hypertension, 42.02% hypercholesterolemia, 26.32% diabetes, 21.05% heart failure, 15.31% ischemic heart disease, 15.31% valvulopathy, 13.4% renal failure, 12.92% thyroid alteration (9.57% hypothyroidism and 3.83% hyperthyroidism), 8.13% enolic habit, 8.13% stroke, 8.13% cognitive impairment, 6.69% obesity, 5.74% sleep apnea, 5.26% venous insufficiency, 3.85% smoking (15.31% ex-smokers), 3.83% deep vein thrombosis, 3.35% left ventricular dysfunction, and 2.87% left atrial dilatation.

Some patients were taking drugs to control rhythm/heart rate, anticoagulants and/or antiplatelet agents. 33.2% beta-blockers: 24.88% bisoprolol, 5.74% sotalol, 1.44% propranolol, and 0.96% carvedilol. Other drugs for rhythm / frequency control: 8.61% flecainide, 5.26% amiodarone, 4.78% digoxin, and 2.87% verapamil. 39.23% anticoagulant treatment: 28.23% acenocoumarol, 5.26% dabigatran, 2.87% apixaban, and 2.87 other anticoagulants. 9.1% antiaggregant treatment: 7.88% acetylsalicylic acid, and 1.44% clopidogrel.

Finally, we analyzed the reason for consultation of the patients: 45.93% palpitations, 27.75% dyspnea, 14.83% dizziness, 13.88% chest pain, 4.78% syncope, and in 12.44% it was a casual finding.

Conclusion. Auricular fibrillation is a cardiac pathology with risk factors, some of them modifiable. In our sample, the risk factors that stood out were: age over 60 years in 8 out of 10 patients, hypertension in 7 out of 10 patients, hypercholesterolemia in 4 out of 10 patients, cardiac pathology in 1 out of 2 patients.

5 out of 10 patients were taking drugs for rhythm / heart rate control before they went to the emergency room: 60% of them took beta-blockers (in almost 1/3 it was propranolol), and in 40% they were other drugs (flecainide, amiodarone, digoxin or verapamil).

Almost 4 out of 10 patients took some anticoagulant, with acenocoumarol being the drug in 70% of cases.

The most frequent reason for consultation was palpitations (almost half), followed by dyspnea in almost 3 out of 10. Other less frequent reasons were dizziness, chest pain and syncope.

#18362 : A retrospective study about treatment of hypertensive crises**Authors:**

Nuria Vicente Gilabert (1), Francisco Manuel Rodríguez Rubio (1), Raquel Cantón Cortes (2), Carlos Máximo Jaime Moreno (3), Daniela Rosillo Castro (1), Marta Vicente Gilabert (4)

1. Emergency, Hospital Comarcal del Noroeste, Murcia, SPAIN
2. Urgency, Hospital Comarcal del Noroeste, Carvaca de la ccruz, SPAIN
3. Emergency, Hospital Universitario Mútua de Tarrassa, Barcelona, SPAIN
4. Internal Medicine, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, SPAIN

Keywords: Blood pressure, hypertension, treatment, antihypertensive agents

Abstract :**Introduction:**

Hypertensive crises are acute, severe elevations in blood pressure that may or may not be associated with target-organ dysfunction. Hypertensive crises are characterized by acute severe elevations in blood pressure, (systolic blood pressure greater than 180 mm Hg and/or diastolic blood pressure greater than 120 mm Hg). About treating patients with acute, severe elevations in blood pressure less is known. The primary goal of intervention in a hypertensive crisis is to safely reduce blood pressure.

Objective:

The aim of the present study was to evaluate the therapeutic objectives for hypertensive crises.

Methods:

A descriptive, observational and retrospective study in a Hospital Comarcal Del Noroeste Murcia (a rural centre of Spain) was described. In this study 267 patients with Hypertensive crises from the 1st January to the 31th June 2017 were included. To qualify for enrolment, a patient had to meet the following two criteria: adult male and female patients at least 18 years of age with a qualifying episode of hypertensive crises and elevations in blood pressure greater than 180/200 mm Hg.

Resultados:

The sample under study was constituted by 60% women and 40% men with an average age of $68,2 \pm 14,5$ years. Our study is focused in 73,6% of the patients, who was first evaluated in the emergency room and was treated with antihypertensives drugs. These patients were prescribed with first antihypertensive step in the emergency room: angiotensin-converting enzyme inhibitors 77.2%, pyrazolones 15.2%, calcium channel blocker 8.7%, loop diuretics 4.3%, benzodiazepines 4.3%, beta-blockers 2.2%, alpha-blockers 2.2% and finally angiotensin II receptor blocker 1.1%. 16,3% of these patients were prescribed with second antihypertensive step: calcium channel blocker 53.6%, angiotensin-converting enzyme inhibitors 20.1% and finally beta-blockers and benzodiazepines 13.4% respective. Only 1.1% of these patients were prescribed third step with beta-blockers.

Half of the patients were reduced the systolic blood pressure around 10-25% and the third of the patients were reduced the diastolic blood pressure around 10-20%. One third of the patients stayed in the emergency room between 30 minutes and 2:30 hours, another third of the patients stayed between 2:30 hours and 3:30 hours, and finally the last third stayed longer than 3:30 hours.

Conclusion

The goal in treating most hypertensive emergencies is to reduce the blood pressure 25% within the first 24 hours after diagnosis. In our study, blood pressure was reduced as indicated in the guidelines.

Physicians should be familiar with the pharmacologic and clinical actions of drugs in treating hypertensive crises. Acute hypertension is currently managed with a wide range of agents, with those most commonly used being angiotensin-converting enzyme inhibitors (3 out of 4 patients), pyrazolones (1 out of 5 patients), calcium channel blocker and finally the loop diuretics. It stands out that analgesics such as pyrazolone are used in 15% of patients.

#18363 : A retrospective study of hypertensive crises**Authors:**

Francisco Manuel Rodriguez Rubio (1), Raquel Cantón Cortés (1), Nuria Vicente Gilabert (1), Carlos Máximo Jaime Moreno (2), Daniela Rosillo Castro (1), Marta Vicente Gilabert (3)

1. Emergency, Hospital Comarcal del Noroeste, Caravaca, Murcia, SPAIN
2. Emergency, Hospital Universitario Mútua de Tarrassa, Barcelona, SPAIN
3. Internal Medicine, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, SPAIN

Keywords: Hypertension; Blood Pressure; Epidemiology

Abstract :**Introduction**

Hypertensive crises are a frequent motive for consultation in the emergency services. Approximately 1-2% of hypertensive patients develop a hypertensive crisis at some time of their lives. Hypertensive crises are characterized by acute severe elevations in blood pressure, (systolic blood pressure greater than 200 mm Hg and/or diastolic blood pressure greater than 120 mm Hg).

Objective

The aim of the present study was to evaluate the prevalence of hypertensive crises, epidemiological profile, frequency and outcomes of patients with diagnosis of hypertension admitted to Emergency Department during 12 months.

Methods

A descriptive, observational and retrospective study in a Hospital Comarcal Del Noroeste Murcia (Spain) was described. In this study 267 patients with Hypertensive crises from the 1st January to the 31th December 2017 were included. To qualify for enrolment, a patient had to meet the following two criteria: adult male and female patients at least 18 years of age with a qualifying episode of hypertensive crises and elevations in blood pressure greater than 180/200 mm Hg.

Results

Among the 125 patients involved in this study, there were 75(60%) females and 50(40%) males. The mean age was $68,2 \pm 14,5$ years [32-98]. Previous hypertension was found in 87,2% of the patients, diabetes in 8,8 %, dyslipidemia in 37,6%, history of a ischemic heart disease in 15,8% and a previous stroke was found in 11,2% of the cases. Most patients who present with hypertension have been treated with Angiotensin II receptor blockers (54,4 %). Mean systolic and diastolic blood pressures at presenting were $195,55 \pm 13,93$ mmHg and $88,98 \pm 19,5$ mmHg, respectively. The treatment used in the emergency department was the angiotensin-converting-enzyme inhibitor (77.2%).The time in the emergency room was 193.44 ± 187.12 minutes. Only 0.8 % of patients require hospital admission.

Conclusions

In conclusion hypertensive crises are common events in the emergency department with strong association with cardiovascular disease and overall mortality. The results demonstrate strong associations between previous hypertension and the risk of hypertensive crises.

#18368 : Implementation of Family Witnessed Resuscitation - a family Centered Standard of Care**Authors:**

Therese Blättler-Remund (1), Verena Wyss (2), Eva Maria Genewein (3)

1. head of emergency care in Switzerland, Notfallpflege Schweiz , Murtenstrasse 10, 3008 Bern, SWITZERLAND
2. pediatric hospital Inselspital Bern, emergency department, Bern, SWITZERLAND
3. emergency department, head of ED, Langnau iE, SWITZERLAND

Keywords: FPDR, Resuscitation, family presence, Standard of care

Abstract :

Background

Family witnessed resuscitation (FWR) are discussed internationally. The majority of patients and family members of adults and children (FWR) endorse this practice as helpful. Family members can see that everything is done to save their loved ones life. Patients don't want to die alone. The presence is an opportunity to comfort and helps the bereaved along a healthy grief process.

Under health care professionals, attitudes and towards FWR are controversial. Since 1995, many national and international nursing und medical organizations officially recommend this practice. While several professionals accept FWR being aware of ethical principles, others express concerns about negative impact on psychological variables, interference with the efforts of professionals, increased stress level and legal complaints.

Methods

The authors searched Medline and CINAHL between October 2012 and March 2013 and between January and March 2018 with the key words: family, resuscitation, witnessed, family presence, family-centered care and implementation.

Results

There is an international trend to good experience with FWR. Interprofessional education is indispensable for successful implementation of the concept of FWR. The benefits for patients and families must be communicated and disadvantages should be considered. Student's educational program or basic life support training including FWR may change the professional mindset by reducing barriers and performing emotional support as part of family-centered care (Salmond et al., 2014).

There is a need to develop guidelines in institutions to favor FWR according to the culture and to train support persons in emergency departments. The role of the support person is to invite the family, stay bedside with them, explain what is happening and provide emotional support.

Conclusion

The future of FWR actually depends on the transformation of the attitudes of professionals (Feagan and Fisher, 2011). A paradigm shift to ethical awareness and positive experience may affect acceptance rather than written instructions.

Trial Registration / Funding Information (only) :

no funding.

#18370 : Urban-Rural gap in Effectiveness of Dispatcher-Assisted Cardiopulmonary Resuscitation

Authors:

Hong-Mo Shih (1), Shao-Hua Yu (1)

1. China medical university hospital, China medical university hospital, Taichung, TAIWAN

Keywords: Dispatcher-assisted cardiopulmonary resuscitation, out-of-hospital cardiac arrest, urban-rural gap

Abstract :**Background:**

Out-of-hospital cardiac arrest (OHCA) is the leading cause of death worldwide. Dispatcher-assisted cardiopulmonary resuscitation (DACPR) is an effective intervention to promote early bystander CPR and improve survival outcome in patients with OHCA. The different effectiveness of implementing DACPR in urban and rural areas has not been explored.

Methods:

This is a prospective observational study. It was carried out in Taichung County, which is consisted with urban, suburban and rural areas. In 2018, Taichung had more than 2.8 million residents and more than 2500 patients with OHCA. We have been promoting DACPR since 2015. All dispatchers have received at least 8-hour training on providing DACPR instructions. After two years of running-in, DACPR was implemented steadily in Taichung.

All OHCA cases occurred in Taichung County from July 1, 2017 to November 30, 2018 were included in the study. Those appeared apparent death, refused hospital referral, aged younger than 20 years and those who with cardiac arrest consecutive to trauma were excluded. Those who lacked audio file records were also excluded. Prehospital data were collected according to the Utstein-style template. The primary outcome of this study was to determine the urban-rural gap in the proportion of bystander performed CPR after dispatchers identified cardiac arrest status. Patient's outcome, such as return of spontaneous circulation (ROSC) before hospital arrival, 2-hour survival rate, and neurological outcomes were also recorded.

Results

A total of 2716 patients were enrolled in this study after excluded those who met the aforementioned exclusion criteria. Patients with OHCA in the rural areas were older than urban areas (71.0 ± 16.4 in urban areas, 69.68 ± 15.8 in suburban areas, and 73.03 ± 14.9 in rural areas respectively, $p = 0.006$). When compared with urban areas, emergency medical services response time was increased in rural areas. There was no difference in gender, types of location where cardiac arrest occurred, witness of arrests and initial shockable arrests.

There was no difference in the recognition of cardiac arrest between urban and rural areas. However, after the dispatchers identified cardiac arrests, the proportion of bystanders who performed CPR in urban areas is higher than in rural areas (75.87% in urban areas, 73.46% in suburban areas and 67.73% in rural areas). The urban area has a relatively higher chance to achieve ROSC, and has a relatively higher proportion patients survived with favorable neurological function, but those had not reached statistical significance.

Conclusion

The study found that in the same dispatch center, bystanders in urban areas had a higher rate of acceptance and perform of cardiopulmonary resuscitation. Although no statistically significance, it was found that patients with OHCA in urban areas had a better prognosis. In the future, public health and public education are need to make people more likely to perform cardiopulmonary resuscitation and achieve more bystander cardiopulmonary resuscitation.

#18371 : Correlation between serum levels of lactate dehydrogenase and neurological outcomes in patients who undergo target temperature management after cardiac arrest

Authors:

Jin Hong Min (1), Hoil Kim (1)

1. , Chungnam National University Hospital, Daejeon, KOREA

Keywords: Cardiac arrest, Prognostication, Serum lactate dehydrogenase

Abstract :

Background: The optimal time to measure serum lactate dehydrogenase level (SLL) to predict prognosis in cardiac arrest (CA) survivors has not been elucidated. We aimed to compare the relationships between time-related SLL and neurological prognosis in CA survivors.

Methods: We conducted a retrospective study examining patients with CA who were treated with target temperature management (TTM). SLL was checked repeatedly at 24-h intervals after return of spontaneous circulation (ROSC). SLL at ROSC and 24-, 48-, and 72-h outcomes were the relationships between each time interval SLL and the neurological outcome 3 months post-CA.

Results: A total of 256 comatose patients with CA were treated with TTM. Seventy-three patients were included, and 31 patients (42%) experienced a good neurological outcome. At 24, 48, and 72 h, there was a significant difference between good and poor outcome groups ($p < 0.001$), except at ROSC ($p = 0.056$). The area under the receiver operating curve (AUC) of at ROSC was 0.631 (95% confidence interval [CI], 0.502–0.761). The AUC at 48 h (0.830; 95% CI, 0.736 – 0.924) was higher than that at 24 and 72 h (0.786; 95% CI, 0.681–0.892 and 0.821; 95% CI, 0.724–0.919).

Discussion & Conclusions: A higher SLL was strongly associated with and seemed predictive of poor outcomes. Furthermore, at 48 and 72 h, SLL may be a useful predictor of poor neurological outcomes. Prospective studies should be conducted to confirm these results.

Trial Registration / Funding Information (only) :

Funding: None.

#18373 : Are men and women treated equally when presenting with a renal colic?**Authors:**

Van Hove Sam (1), Evert Verhoeven (2), de rouck ruben (3), Ives Hubloue (3)

1. vub, vub, brussel, BELGIUM
2. uzbrussel, uzbrussel, Etterbeek, BELGIUM
3. uzbrussel, uzbrussel, brussel, BELGIUM

Keywords: renal colic, gender related differences

Abstract :

Sex-related differences in the approach to renal colic were already subject to prior research showing women are less likely to have a computed tomography (CT) scan as diagnostic-imaging modality compared to men. A retrospective cohort study was conducted at the emergency department (ED) of the Brussels' university hospital (UZ Brussel), examining the approach to patients presenting with renal colic in 2015-2016. 982 Unique patients met the inclusion criteria leading to 1207 ED presentations. In this sub-analysis, gender-related differences in diagnosis, calculi and analgic treatment were explored. We found a significant difference in CRP level and calculus size both favouring women. There was no significant difference in diagnosis or analgesic strategies.

Methods: Descriptive statistics were applied to this retrospectively collected dataset. Chi-square testing was used to compare categorical variables. One-way ANOVA was used to compare means. The half-width of the 95% confidence intervals was calculated.

Results: This study identified a significant difference in CRP levels between men and women, averaging $7,17 \pm 1,38$ mg/dL in men versus $11,76 \pm 3,03$ mg/dL in women ($n = 820$, $p = 0,002$). Intercurrent urinary tract infection are more frequently found in women resulting in a justified increase in the use of antibiotics and urinary antiseptics. (4% in men compared to 16% in women, $p < 0,001$) No significant differences in analgesic strategies could be demonstrated. However, women received different opioids than men, favouring weaker opioids for women. Fentanyl was used in 5.9% in men and 2.5% in women respectively ($n = 1207$, $p = 0.014$). No significant difference was demonstrated in the use of tramadol and piritramide. The average morphine equivalents did not differ between the sexes. This study did not show a significant difference in CT usage for diagnosis (61.6% in men versus 58.4% in women ($n = 732$, $p = 0.307$)).

As reported in literature, a statistically significant difference was found in calculus size, measuring $6,0 \pm 0,2$ mm in women and $5,3 \pm 0,8$ mm in men ($n = 678$, $p = 0.017$). No significant sex-related differences could be found related to hydronephrosis, or admissions.

Discussion: Higher prevalence of intercurrent urinary tract infections in the female population might explain these elevated CRP levels. At the UZ Brussel low-dose CT imaging is used in the evaluation of suspected urolithiasis as it is a validated imaging modality, with high sensitivity and specificity and a low radiation exposure. This strategy might explain the equal use of CT in men and women.

Conclusion: At the UZ Brussel, ED diagnosis and treatment of acute renal colic is done in the same way for both sexes. Intercurrent urinary tract infection is more frequently found in women, leading to higher CRP levels and a justified increase in the use of antibiotics and urinary antiseptics. Previous studies showed similar results. In addition, women often have slightly larger calculi with no significant difference in outcome in terms of admission and revisits compared to men.

Trial Registration / Funding Information (only) :

No funding was recieved for this trial

#18374 : Why do patients with renal colic get hospitalised?**Authors:**

Van Hove Sam (1), Evert Verhoeven (2), de rouck ruben (3), Ives Hubloue (3)

1. vub, vub, brussel, BELGIUM
2. uzbrussel, uzbrussel, Etterbeek, BELGIUM
3. uzbrussel, uzbrussel, brussel, BELGIUM

Keywords: renal colic, hospitalisation rate

Abstract :

Abstract: Approximately 12% of patients are admitted at their initial emergency department (ED) presentation with renal colic. After revisit this percentage increases to 33%. Currently there is no clinical prediction model that explains the probability of admission. In 2015, a multivariate analysis was published as an impetus for further research. A retrospective cohort study was conducted at the emergency department (ED) of the UZ Brussel, identifying clinical risk factors for hospitalisation. Using clinical parameters, we can only explain half the variance, implying that other factors contribute significantly to hospitalisation in renal colic.

Methods: On the retrospectively collected dataset comprising 1207 ED visits, descriptive statistics via chi-square for categorical and one-way ANOVA for numerical variables were performed. Four binary multivariate logistic regression analyses were used to identify contributing factors to hospitalisation.

Results: On average, hospitalised patients were 5 years older than patients who received outpatient care. There is also an increased likelihood of hospital admission at revisit, previous history of renal colic, intercurrent urine tract infection, and hydronephrosis. The total equivalents of morphine received are $2,9 \pm 0,61$ mg for outpatients and $11,0 \pm 1,18$ mg when hospitalised ($n = 1207$, $p < 0,001$). Overall admission ratios correspond to literature: 12.5% after the first visit and 31.7% on second presentation at the ED. This percentage doesn't increase with subsequent revisits.

The first multivariate analysis identified the following relevant clinical parameters as contributor to hospitalisation: age, revisits, use of pain score, use of diclofenac, paracetamol, anti-emetics, tamsulosin, morphine equivalents received (Nagelkerke $R^2 = 0.481$). The second used radiological stone characteristics (Nagelkerke $R^2 = 0,121$). A calculus of <5 mm is a predictor for outpatient treatment, whereas a stone size >20 mm increases likelihood of inpatient treatment, as is hydronephrosis. The location of the calculus in the pyelo-urethral system was not significant. Laboratory results were used in the third analysis. Combination of C-reactive protein (CRP), presence of acute kidney injury (AKI) and a positive urine culture were significant predictors. Total white blood-cell count (WBC) was a non-significant contributor. (Nagelkerke $R^2 = 0.124$). The final model combined all significant predictors from the previous analyses, achieving Nagelkerke $R^2 = 0.51$.

Discussion: These results imply that radiological stone characteristics can only explain variation in hospitalisation or outpatient treatment to a limited extent. Combined with the clinical parameters described above, approximately 50% of the variation in admission number can be explained. Most of these parameters are related to analgesic therapy, so analgesic optimisation is of paramount importance. In our opinion the use of diclofenac and paracetamol does not increase hospitalisation probability; Rather, analgesic therapy is improved upon admission.

Conclusion: With hard-clinical parameters only half the variance can be explained, implying that other factors that were not taken into account in this study may contribute significantly to hospitalisation in renal colic.

Trial Registration / Funding Information (only) :

No funding was received for this trial

#18375 : One mg of prehospital adrenaline improves neurologically favourable outcome in emergency medical service-witnessed out-of-hospital cardiac arrest with a non-shockable initial rhythm when administered in an achievable time window

Authors:

Hisanori Kurosaki (1), Kohei Takada (1), Akira Yamashita (1), Yukihiro Wato (2), Hideo Inaba (1)

1. Department of Circulatory Emergency and Resuscitation Science, Kanazawa University Graduate School of Medicine, Kanazawa, JAPAN
2. Department of Emergency Medicine, Kanazawa Medical University, Uchinada, JAPAN

Keywords: out-of-hospital cardiac arrest, emergency medical service, adrenaline

Abstract :

Aims: When out-of-hospital cardiac arrest (OHCA) is witnessed by emergency medical service (EMS), good-quality of cardiopulmonary resuscitation (CPR) is immediately provided. When the initial electrocardiograph rhythm is non-shockable, adrenaline is recommended to be given to cardiac arrest patients as early as possible. However, the association among timing of administration, the dose, and outcomes still remains uncertain. This study aimed to examine whether the timing of first adrenaline administration and the total dose of adrenaline given in a pre-hospital setting can be a factor associated with better outcomes in EMS-witnessed OHCA with a non-shockable initial rhythm.

Methods: In this retrospective analyses of prospective cohort, we extracted the data for 9,296 adult (≥ 8 y) EMS-witnessed OHCA cases with a non-shockable initial rhythm from the 2014–2016 nationwide databases. The cases with physician-performed prehospital advanced life support or a considerable delay (> 2 min) in CPR initiation by EMS were excluded. At each time point after patient collapse (T min), cases with prehospital ROSC and first adrenaline administration before T min, and hospital arrival before T-1 min were excluded to obtain the candidate cases for start of prehospital adrenaline administrations. The T ranged from 4 min to 16 min and was escalated by 2 min. After propensity-matching procedure at each time point of T min, association of 4 groups [0 (no prehospital adrenaline), 1, 2 and > 3 mg adrenaline administration after T)] with neurologically favourable 1-M survival in cases with indication for the first adrenaline administration was analysed by logistic regression analyses. Both matching procedures and logistic regression analyses included factors that are known to be associated with OHCA outcomes.

Results: The survival rates in most of 4 groups decreased when T increased: 3.6%, 4.1%, 1.9%, 1.1%, respectively in 0, 1, 2 and >3 mg groups at T = 4 min, 2.0%, 3.4%, 0.4% and 1.1%, respectively at T = 16 min. A series of logistic regression analyses after propensity-matching revealed that survival rate of 1 mg group was higher than that of 0 mg (no prehospital adrenaline) group at T = 6, 8,10,12 and 14 min: adjusted OR ranged from 1.29 (at T = 6 min) to 2.89 (at T = 14 min).

Conclusions: Prehospital administration of 1 mg adrenaline in a time window of 6 to 14 min after patient collapse is likely to improve neurologically favourable outcome of EMS-witnessed OHCA with a non-shockable initial rhythm.

Trial Registration / Funding Information (only) :

No appropriate register/This study did not receive any specific funding

#18376 : The contribution of an emergency department to the opioid crisis

Authors:

Pourya Pouryahya (1), Alastair Meyer (1), William Birkett (2)

1. Casey hospital, Emergency Department, Program of Emergency Medicine, Monash Health, Department of Medicine, School of Clinical Sciences at Monash Health, Monash University, Melbourne, AUSTRALIA

2. Monash Health, Monash Monash Health, Melbourne, AUSTRALIA

Keywords: opioid, pain management, addiction, Emergency department, Pain

Abstract :

Background

The misuse of prescription opioids is a significant public health issue in Australia. There has been a rapid rise in prescription opioid use over the past two decades, which has seen an associated increase in dependence, abuse and overdose.¹ There is anecdotal concern that similar patterns of inappropriate prescribing may exist in Australian emergency departments. This behaviour could be contributing to growing national public health concerns. There is however limited Australian literature studying the rates and trends of opioid prescribing in local EDs.

Aim

Our research would aim to quantify the volume of prescribing of oral opioids in an Australian emergency department. We would also aim to identify any trends in prescribing behaviour.

Methods

We performed an observational, retrospective data analysis of opioid prescribing at a single-centre emergency department. The setting is a level-2 hospital in Melbourne, with >65,000 annual presentations to the ED. The primary outcome was the prevalence of all opioid prescribing in the ED during a calendar year. This included medications administered within the ED (inpatient), as well as prescriptions supplied on discharge. Data was collected on the medication, duration of action (immediate-release (IR) or slow-release (SR)), dose and number of tablets prescribed. Inpatient data was sourced from hardcopy 'drug of dependence' (DD) medication records. Discharge prescription data was collected from electronic pharmacy records.

A secondary outcome considered possible trends in opioid prescribing over three years. We reviewed the monthly supply of opioids supplied for use in the ED, and the monthly volume of discharge prescriptions during this period.

Results

There were 66,207 presentations to the emergency department during the 2017 calendar year. Three types of oral opioid tablets were prescribed within the department: oxycodone IR, oxycodone SR (Oxycontin[®]) and oxycodone/naloxone SR (Targin[®])

58 DD record books corresponding to this period were reviewed. 13,108 patients (19.8%) attending the emergency department were administered at least one oral opioid. The most frequent order was for oxycodone IR 5mg (60.4% of all inpatient opioid orders). 6.6% of medication orders were for a slow-release opioid.

5.60% of patients presenting to the ED were issued a prescription for an oral opioid on their discharge into the community. The most frequent opioid prescription (71.7%) was for oxycodone IR 5mg, 20 tablets. 8.52% of prescriptions were for a slow-release opioid, most commonly Targin 5/2.5mg, 28 tablets. The majority of immediate-release (77.8%) and slow-release (76.3%) opioid prescriptions were for a full pack, with no reduction in the number of tablets supplied.

Three-year trends in prescribing

Monthly data over a 3-year period shows an increasing trend of total opioid administration within the emergency department

Conclusion

The emergency department is responsible for a significant supply of opioids into the community. The inappropriate prescribing of these medications is increasing, and we are on a trajectory to cause significant community harm. Interventions in prescribing behaviour are required if to prevent Australian EDs from contributing to the potential development of a public health crisis.

#18378 : The Effect of Transport Modality on Outcomes in Children Who Received Life Saving Interventions (LSI) in the ED; Brought via Ambulance vs. Not; Preliminary Results of REPEM Study

Authors:

Caner Turan (1), Eylem Ulas Saz (1), Eren Erseven (1), Ali Yurtseven (1), Sevcan Bilen (2), Gamze Gokulu (2), Pinar Cay (2), Hayri Levent Yilmaz (2), Mehmet Adnan Ozturk (3), Murat Dogan (3), Utku Ozer (3), Tugce Kalin (3), Gamze Gokalp (4), Sule Demir (4), Candemir Karacan (5), Nilden Tuygun (5), Ahmet Birbilen (6), Ozlem Teksam (6), Anil Er (7), Aykut Caglar (7), Nihan Sik (8), Murat Duman (8), Ramazan Gurlu (9), Nilgun Erkek (9), Aytac Goktug (10), Ihsan Ozdemir (10), Ahmed Soliman (11), Danilo Buonsenso (12), Alkan Bal (13), Halise Akca (14)

1. Department of Pediatrics, Division of Emergency Medicine, Ege University School of Medicine, İzmir, TURKEY
2. Department of Pediatrics, Division of Emergency Medicine, Cukurova University School of Medicine, Adana, Adana, TURKEY
3. Department of Pediatrics, Division of Emergency Medicine, Erciyes University School of Medicine, Kayseri, TURKEY
4. Department of Pediatrics, Division of Emergency Medicine, Tepecik Training and Research Hospital, İzmir, TURKEY
5. Department of Pediatrics, Division of Emergency Medicine, Sami Ulus Children's Hospital, Ankara, TURKEY
6. Department of Pediatrics, Division of Emergency Medicine, Hacettepe University School of Medicine, Ankara, TURKEY
7. Department of Pediatrics, Division of Emergency Medicine, Dr.Behçet Uz Children's Diseases And Surgery Training and Research Hospital, İzmir, TURKEY
8. Department of Pediatrics, Division of Emergency Medicine, Dokuz Eylul University School of Medicine, İzmir, TURKEY
9. Department of Pediatrics, Division of Emergency Medicine, Akdeniz Univeristy School of Medicine, Antalya, TURKEY
10. Department of Pediatrics, Division of Emergency Medicine, Ankara University School of Medicine, Ankara, TURKEY
11. Emergency Medicine, Dartford and Gravesham NHS Trust Darent Valley Hospital, Dartford, UK
12. Department of Woman and Child Health and Public Health, Fondazione Policlinico Universitario A. Gemelli, IRCCS, Rome, Rome, ITALY
13. Department of Pediatrics, Division of Emergency Medicine, Celal Bayar University School of Medicine, Manisa, TURKEY
14. Department of Pediatrics, Division of Emergency Medicine, Ankara Yildirim Beyazit University School of Medicine , Ankara, TURKEY

Keywords: prehospital care, EMS, critically ill children, transport

Abstract :**Introduction:**

Appropriate prehospital/interhospital management of critically ill children (CIC) challenging and requires dedicated resources to ensure the best outcomes. There are two main emergency medical services (EMS) models for the delivery of prehospital care in the developed world. In the Anglo-American model, patients are transported directly to emergency departments (EDs) for further stabilization and definitive care. By contrast, the Franco-German model of EMS where physicians are key members of the EMS team focuses on scene-based stabilization and treatment.

This study aimed to determine the difference of prehospital pediatric emergency care in CIC within REPEM countries. The requirements and frequency of life saving interventions (LSI) on route and in the ED and their effects final outcomes also investigated.

Methods:

This is a prospective, multicentric, cohort study organized to conduct in 18 ED from 5 EU-countries by February 2019. The present preliminary results demonstrates data from 3 countries and 13 ED. All data collected with google forms, and the study group was only limited to all patients who received LSIs in the ED. Baseline clinical characteristics, transport modalities (ambulance-or-not), type of performed LSI either in the ED or at the ambulance, hospitalization rate, morbidity and mortality were also recorded. This study has been conceived within the REPEM network and the pediatric section of the European Society of Emergency Medicine.

Results:

A total of 107.777 patients visited 14 participant EDs, 11.290 EMS transports were performed and 577 received LSIs in the EDs. The mean age was 70.6 months;54.2% was male. Majority of responders were pediatric emergency medicine physicians(91.7%). The daily mean number of visiting patients and ambulance arrivals to the ED was 190(min 38,max 1507) and 9.7(SD ±4.5) respectively. Only one percent of the ambulance patients received LSI in the ED. Although, all patients needed at least one LSI, minority of them (14.7%) performed in the ambulance. A significant number of patients were transferred from home (73.7%), only 21.1% were interfacility transport.

Physicians rarely accompanied paramedics during prehospital care (5.4%), most prehospital care is provided by paramedics and emergency medical technicians (94.6%). If the physicians are key members of the EMS team immediate LSIs were most likely provided (41.9% vs 9%)($p=0.001$). The most common performed LSIs during the transport were airway procedures,(10.8%) such as balloon mask ventilation (76.8%), endotracheal intubation (3.4%). Hemodynamic procedures performed in 7.4% of patients; significant intravenous fluid resuscitation(6.2%), CPR and electrical therapies(4%). More than half of the patients (52.7%) admitted to ward, 24.8% admitted to intensive care unit(ICU) and fourteen patients died. Physician staffed EMS patients had higher ICU admission rate($p=0.0029$). The use of ambulances did not reduce the mortality and ICU admission rate of CIC who received LSI on route ($p=0.000,p=0.008$).

Discussion&Conclusion

Ambulance often transferred children without critical illness. LSI rarely performed for CIC who needed. EMS providers prefer to bring the CIC directly to EDs for further stabilization and definitive care. The use of ambulances did not reduce the mortality of CIC. Creating a specific unit and team for

pediatric EMS will be correlated with a better outcomes.

Trial Registration / Funding Information (only) :

No funding

#18379 : The Efficacy and Safety of Procedural Sedoanalgesia in the Pediatric Emergency Department**Authors:**

Caner Turan (1), Ali Yurtseven (1), Eren Erseven (1), Eylem Ulas Saz (1)

1. Department of Pediatrics, Division of Emergency Medicine, Ege University School of Medicine, İzmir, TURKEY

Keywords: PSA, sedation, analgesia, children, sedoanalgesia

Abstract :**Introduction**

The performance of diagnostic and therapeutic procedures in pediatric population is safer and more likely to be successful when the patient does not move and when any associated pain and anxiety are effectively controlled. Although necessary, sedation and analgesia may have adverse effects, requiring management in an adequate environment and performed by trained professionals.

In this study, the aim was to evaluate the efficacy and safety of procedural sedoanalgesia (PSA) performed by pediatric residents and pediatric emergency physicians trained in advanced airway management and life support. It also compared the characteristics of patients who receive PSA and effectiveness of the most preferred agents.

Methods:

This is a preliminary report of prospective, observational study conducted at an urban, academic pediatric Emergency department (ED). All children who receive PSA for diagnostic and therapeutic procedures were enrolled. Patients were continuously monitored by the pediatric emergency nurse and supervised by the pediatric resident, or pediatric emergency physician throughout the procedure. Vital signs, sedative effectiveness, recovery patterns, and complications were recorded. Patients characteristics, procedure types, reason of sedation, given dose (mg/kg), revised FLACC pain score and Ramsey sedation score (RSS), sedative effectiveness, recovery time, adverse events, diagnosis and outcomes were prospectively recorded.

Results:

PSA was performed 256 times in 196 patients during the study. Children's age ranged from 1 to 192 months (median 11, IQR 4-36), most were (68.7%) younger than 2 years old and more than half (61.6%) were male. The most frequently PSA performed for high flow nasal cannula (HFNC) therapy(43.4%), electroencephalography (EEG) (23.2%), and lumbar puncture (19.2%). Only single drug used for majority of sessions (67.3%), mostly chloral hydrate preferred (46.7%), the most common combined protocol was dexmedetomidine + chloral hydrate (44.1%). The overall success rate for PSA in our study group was 84.3%, and the best sedation achieved with intravenous dexmedetomidine the rate was 94.4 % (Ramsay scores of ≥ 3). The recovery time was 78.8 ± 53.3 min. PSA more likely performed by pediatric emergency physicians (58.1%). While pediatrics residents frequently preferred chloral hydrate, pediatric emergency physicians' choice were dexmedetomidine and midazolam for PSA ($p < 0.001$). The median RSS were 1-2-3-3-3 after 5-10-20-30 and 60 minutes of drug administrations, respectively.

Discussion&Conclusion

Our experience suggests that dexmedetomidine is a safe and efficacious agent for PSA in the ED.

Trial Registration / Funding Information (only) :

No funding

#18380 : Hypothermia Dynamics in Sibiu Emergency**Authors:**

Anastasia Bologa (1), Virgiliu Cezar Bologa (2), Alexandra Crisu (3)

1. Student, "Lucian Blaga" University, Faculty of Medicine; UPU-SMURD Sibiu, Sibiu, ROMANIA
2. Phd.physician, "Lucian Blaga" University, Faculty of Medicine; UPU-SMURD Sibiu, Sibiu, ROMANIA
3. Phd.physician, "Lucian Blaga" University, Faculty of Medicine Sibiu, Sibiu, ROMANIA

Keywords: hypothermia

Abstract :

INTRODUCTION

Hypothermia, lowering body temperature, occurs when the body loses heat faster than it is able to produce, and is due to prolonged exposure to low temperatures.

MATERIAL AND METHOD

We conducted a retrospective observational study on a total of 259,920 patients presented at the Emergency Clinical Hospital Emergency Room, between 01.01.2015 and 31.12.2018.

RESULTS

Of the total of 259920 patients, in the Emergency Room were reported 55 (0.0211%) hypothermia. The annual distribution during the study was the following: 2015 - 12 (22.22%) cases, 2016-12 (22.22%) cases, 2017-13 (25.63%), 2018-18 (32.72%) cases. The gender distribution was the following: 14 women (25.45%) and 41 males (74.54%). Of the 55 cases with hypothermia, 11 were social cases, representing 20%. During the study, 21 patients were treated and discharged from the emergency room, representing 38.18%, 25 patients, representing 45.45% of patients, required hospitalization, and 9 died in emergency, representing 16.36%. Serious cases of hypothermia with associated cardiorespiratory arrest were 6, representing 10.9%, of which the death rate was 83.33%. Hypothermia was associated with other conditions in 81.81% of cases, meaning 45 cases, with mental disorders 7 (12%), trauma 6 (10.9%), alcoholism 5 (9.09%), frostbite 5 (9.09%), stroke 5 (9.09%), diabetes 3 (5.45%),

CONCLUSIONS

The number of cases of hypothermia was relatively constant, with a slight increase in 2018. Hypothermia affects men more frequently. Hypothermia is more common in social cases. Hypothermia commonly associates other disorders: mental disorders, traumas, alcoholism, frostbite, stroke, diabetes. The death rate in serious cases with cardiac arrest is very high.

#18382 : Dynamics of Thermal Burns at Emergency in Sibiu**Authors:**

Virgiliu Cezar Bologa (1), Anastasia Bologa (2), Alexandra Bota Crisu (3)

1. EMERGENCY PHYSICIAN, "Lucian Blaga" University, Faculty of Medicine; UPU-SMURD Sibiu, Sibiu, ROMANIA
2. Student, "Lucian Blaga" University, Faculty of Medicine; UPU-SMURD Sibiu, Sibiu, ROMANIA
3. PHYSICIAN, "Lucian Blaga" University of Sibiu, Faculty of Medicine, Sibiu, ROMANIA

Keywords: burns

Abstract :

INTRODUCTION

Thermal burns are the effect of heat over 46 degrees Celsius on the skin and tissues.

The lesioning energies can be ceded by different physical factors and their action produces the following changes:

- at 46-60 degrees Celsius occurs enzymatic degradation, reversible, if action time is short
- over 60 degrees C clotting necrosis
- at over 180 degrees C caramelization of carbohydrates
- From 600 degrees C carbonization
- over 1000 degrees C calcinations

MATERIAL AND METHOD

We conducted a retrospective observational study on a total of 259,920 patients presented at the Emergency Clinical Hospital Emergency Room, between 01.01.2015 and 31.12.2018.

RESULTS

Of the total of 259,920 patients, in the Emergency Room were reported 211 (0.0811%) thermal burns
2015 - 43 (20.37%) cases, 2016 - 52 (24.64%) cases, 2017 - 48 (22.74%), 2018 - 68 (32.22%) cases.

Distribution by sex was the following: 107 women (50.7%) and 104 men (49.3%).

During the study, 60 patients, representing 23.7% of patients, required admission and 161 patients representing 76.3% were treated in outpatients.

Of the total 211 burns 170 (80.56%) were limb burns, 21 (9.95%) were burns in the cephalic extremity, and 20 (9.47%) at the trunk.

CONCLUSIONS

During the study, the number of cases was relatively constant, with a higher number of cases in the last year of the study.

Distribution by gender is approximately equal.

Most thermal burns have been treated in outpatients.

The majority of thermal burns are produced in the limbs, the rest affects the extremity of the cephalic and thorax.

#18386 : Fast and Functional: Dedicated Route Improve Neurological Function in Stroke Patients**Authors:**

Saban Mor (1), Heli Patito (2), Rabia Salama (3), Aziz Darawsha (2)

1. , University of Haifa, Haifa, ISRAEL
2. , Rambam Health Care Campus, Haifa, ISRAEL
3. , Rambam Health Care Campus, Hifa, ISRAEL

Keywords: stroke, fast track, emergency department

Abstract :

Background: Stroke treatment has undergone revolutionary changes in recent years in order to minimize brain damage in the first few hours after stroke. At the center of the innovation is a decisive effect on time dimension. In this study we examined whether a rout dedicated for the diagnosis and treatment of patients with stroke improves short- and long-term treatment outcomes.

Method: A retrospective comparative study conducted between the years of 2016-2017 with a total of 490 patients presenting suspected stroke. In 2017, a "dedicated trout" intervention was implemented. For each patient, the following fast track was activated:1. Quick entry to the trauma bay.2. Immediate evaluation by the nursing staff and a neurologist.3. CT scan (<25 min)4. Provision of TPA (<4 hours) or thrombectomy (> 8 hours)

Results: In 2016, 49% of patients were directly admitted to the trauma bay with suspected stroke, compared with 65% in 2017 ($p < .001$). In 2017, CT time has shortened from an average of 85.21 minutes to an average of 36.26 ($p < .001$). The percentage of compliance with the 25-minute index of the Ministry of Health improved in 2017 to 42%, compared with 25% in 2016 ($p = .02$). In 2017, 36% of patients received TPA versus 22.8% in 2016, and time for TPA was reduced to an average of 81 minutes in 2017 from 123 minutes in 2016 ($p = .003$). Cerebral angiography was performed in 21% in 2017, compared to 13% in 2016, with an average time of 103 minutes in 2017 compared with 124 minutes in 2016 ($p = .001$ vs. $p = .004$, respectively). The percentage of patients hospitalized in neurology department increased significantly: 72.9% in 2017, compared with 59.1% in 2016. At the same time (at the year of intervention) there was a decrease in hospitalization days from an average of 9.66 in 2016 to 8.8 in 2017, and the MRS (neurological function evaluation) of the patients at discharge was significantly better in 2017 ($p = .02$). **Conclusions:** A Specific and dedicated intervention in the ER in order to shorten the time for diagnosis and treatment of patients with suspected stroke has a significant effect on the short- and long-term outcome of this patients. A rapid intervention process in an earlier stage such as the medical transportation services will produce even better results.

Trial Registration / Funding Information (only) :

N/A

#18387 : Emergency department rush? World cup YES, Eurovision NO The

Authors:

Saban Mor (1), Heli Patito (2), Rabia Salama (3), Aziz Darawsha (2)

1. , University of Haifa, Haifa, ISRAEL
2. , Rambam Health Care Campus, Haifa, ISRAEL
3. , Rambam Health Care Campus, Hifa, ISRAEL

Keywords: emergency department , Eurovision, emergency department use

Abstract :

Background: Emergency department (ED) visit rate in Israel is in a current ascent, however it is unknown whether there is a time correlation between the number of visits and holidays or special occasions. In the current study we examine whether public holidays and special occasions affect the ED occupancy and the patients decision to visit the EDs.

Design and Method: A retrospective study conducted between 2010 and 2017 in the ED of a tertiary hospital. In the first stage, data about the number of ED referrals per day and the initial cause of the referral (internal, surgical, and orthopedic) was collected. Following this information we defined the calendric dates regarded as holydays according to the three most common religions in Israel: Jewish, Muslim, and Christian. In the third stage, special occasions of public importance occurring at the same year were defined (Such as major sports games or significant television broadcasts). Correlations and T-tests as well as One Way-Anova were conducted to examine the relation between this holidays and special occasions to the number of ED referrals. **Results:** The average number of daily visits per year was 247.12 ± 42.46 . The average number of visits was significantly higher on Sundays than on the other weekdays (294.44 ± 31.03 – on Sunday, 252.35 ± 35 – on week days, 193.61 ± 20.47 – weekends). On both religious and secular Jewish holidays the number of ED visits was significantly lower ($p < 0.001$). As for the Muslims in Ramadan, there was no reduction in the number of ED visits, while on other holidays there was a significant decrease in the total number of visits. On Christian holidays a decrease in the number of visits was found. In days when special sporting events were held, there was no significant decrease in the number of visits. On the other hand, when television broadcasts (eg., Eurovision) of public significance were recorded, there was a significant statistical decrease in the number of ED visits. **Conclusions:** Public holidays and events are associated with a reduced number of ED visits. The data collected can be used by decision-makers to redistribute or make better use of the hospital staff and resources in advance.

Trial Registration / Funding Information (only) :

n/a

#18388 : Are physicians meeting goals for time from triage to evaluation? A retrospective analysis

Authors:

Saban Mor (1), Nadav Armoni (2), Heli Patito (2), Ari Lipsky (2), Aziz Darawsha (2)

1. , University of Haifa, Haifa, ISRAEL

2. , Rambam Health Care Campus, Haifa, ISRAEL

Keywords: Triage, emergency department, physicians, triage adherence

Abstract :

Objective. To examine whether physicians adhere to the urgency classification as determined by the Canadian Triage and Acuity Scale (CTAS).

Design and Method. A retrospective-archive study was conducted in a tertiary hospital from January 2011 to December 2015. For each patient, we examined the relation between the urgency rating set by the triage nurse and the waiting time for the physician by using univariate and multivariate analysis. Comparisons were performed for several subgroups: patient arrival time, season, assigned care area, and first consultant to examine the patient.

Results. There were 392,687 unique visits during the study period. The distribution of the classification was heterogeneous: 7,133 (1.8%) patients were classified as P1; 17,318 as P2 (4.4%); 148,657 as P3 (37.8%); 113,502 as P4 (28.9%); and 106,077 as P5 (27%). Median and interquartile ranges for time from triage until physician assessment, by triage group, were: P1, 0.7 minutes (0.2-24); P2, 35 minutes (13-76); P3, 44 minutes (21-88); P4, 45 minutes (20-87); and P5, 46 minutes (22-88). Percentages of visits that met the evaluation time goals, by triage classification, were: P1, 61%; P2, 27%; P3, 37%; P4, 61%; and P5, 85%. No clear differences among subgroups emerged.

Conclusion. The standard goals for time to physician evaluation are not being met, and there is little difference in time to evaluation between the P3, P4, and P5 classifications. This is likely because the physicians are not consulting the triage classification when deciding whom to evaluate next. System-wide changes in physician workflow and awareness should be initiated.

Trial Registration / Funding Information (only) :

n/a

#18389 : Actions speak louder: young female patients with acute ischemic stroke in the emergency department**Authors:**

Saban Mor (1), Heli Patito (2), Rabia Salama (3), Aziz Darawsha (2)

1. , University of Haifa, Haifa, ISRAEL

2. , Rambam Health Care Campus, Haifa, ISRAEL

3. , Rambam Health Care Campus, Hifa, ISRAEL

Keywords: cerebrovascular accident; emergency department; ischemic stroke; young female.

Abstract :

Objective. To explore the diagnostic process in young females with acute ischemic stroke (AIS) in the emergency department (ED) setting. In addition, we present the chain of events leading to their hospitalization outcome.

Design and Methods. A retrospective case series archive study was conducted between the years 2016-2018 in the ED of a tertiary hospital. Data files were extracted from the electronic database (n=10). We extracted socio-demographic data, clinical risk factors and co-morbidities, ED characteristics and data on medical examinations and laboratory results during hospitalization.

Results. Ten patients presenting with AIS were identified. All cases presented stroke related risk factors, with a variety of clinical presentations. Cardiac history presented in five of the cases and psychiatric history in two of the cases. Medical examination revealed patent foramen ovale and valvular malformation in five cases. Time delay from stroke onset to ED arrival was 148 ± 84.54 minutes, whereas ED to CT time was 98 ± 196.95 minutes. Occlusion of cerebral arteries has been demonstrated by imaging in all cases following alternating time lags. Eventually, seven females were discharged to rehabilitation while the remaining three were discharged home.

Conclusions. Clinical presentation of young female with AIS is misleading. Initial examination in the ED setting may appear to be the determining point of impact on the outcome severity in young females.

Trial Registration / Funding Information (only) :

n/a

#18393 : The prognosis of different timing of initiation dual antiplatelet therapy in non-ST elevation myocardial infarction patients in emergency department**Authors:**

Jen Han Yang (1), Shao Hua Yu (1)

1. Emergency department, China medical university hospital, Taichung, TAIWAN

Keywords: dual antiplatelet therapy, non-ST elevation myocardial infarction

Abstract :**Purpose of the study**

Dual antiplatelet therapy (DAPT) is an important treatment in patients with acute coronary syndrome (ACS). The golden time to give DAPT in patients with non-ST-segment elevation myocardial infarction (NSTEMI) at the emergency department (ED) is not well established. The objective of this study is to demonstrate the correlation between the different timing of the DAPT given in the ED and the prognosis in patients with NSTEMI.

Materials and methods

We retrospectively collected data of the patients with NSTEMI admitted to the ED of China Medical University Hospital during 2017 and 2018. We recorded the time interval between the time the patient arrived at the ED and the time the DAPT was given. Patients were divided into two groups according to whether they received DAPT within 6 hours after their arrival of ED. The primary outcomes included the mortality, cardiogenic shock and in-hospital major adverse cardiovascular events (MACE). The second outcomes included the patients unexpected returned to emergency department in 72 hours and unexpected re-admitted within 14 days.

Results

A total of 679 patients with NSTEMI were enrolled into this study. The 2 groups shared some similar clinical characteristics. However, the patients who received DAPT beyond 6 hours showed a lower mortality (7.03% versus 3.62%, $P < 0.001$) compared to those received DAPT within 6 hour. There was no significant difference in other MACE and other secondary outcomes.

Conclusions

In this study, the time interval between ED arrival and DAPT administration may not be a predictor of prognosis in patients with NSTEMI. We will further investigate whether the time from symptom onset to DAPT administration will affect the prognosis.

#18395 : Efficiency of serum albumin to predict neurological outcome within 28 days following in-hospital cardiac arrest: a retrospective study.**Authors:**

Peng Yao (1), Yarong He (1), Sheng Ye (1), Junzhao Liu (1), Yu Cao (1)

1. Department of Emergency Medicine , West China Hospital, Sichuan University, Chengdu, CHINA

Keywords: in-hospital cardiac arrest, neurological outcome, serum albumin

Abstract :

Background: Previous study indicated that serum albumin concentration(SAC) was favorable in prediction for the neurological outcome of out-of-hospital cardiac arrests (OHCAs). However, few studies had discussed the potential of it in determining the neurological outcome in 28-day following in-hospital cardiac arrest(IHCA). Therefore, we conducted the present study to investigate the potential of SAC in prediction for the neurological outcome of IHCAs.

Methods: This was a retrospective study of IHCA patients with SAC test before or after return of spontaneous circulation and after (ROSC) during Jan 2015 to December 2016. We used ROC curve to investigate the best subsets of SAC-related variables for neurological outcome, which included SAC1 (baseline); SAC2 tested within 24 hours post ROSC; Delta SAC: amount of rise, the difference of SAC2 from SAC1; SAC3: sum of SAC1 and SAC2. Cerebral Performance Category (CPC) score (1–5) was determined for the index of neurological outcome.

Results: A total of 159 patients were enrolled, including 105 (66.04%) males, the mean age of them were 59 (28) years old. 23 (14.47%) patients maintained favorable neurologic status (CPC 1–2) and the other ones got unfavorable neurologic outcomes (CPC 3–5) in 28-day follow-up. Univariate analysis indicated that SAC1, SAC2 and SAC3 were significantly different between these two groups. Further ROC curve analysis indicated that SAC2 possess a priority value in predicting neurological outcome for IHCA patients, with its area under the ROC curve (AUC) as 0.746(95% CI: 0.625-0.867), much better than that of SAC1(0.633, 95% CI: 0.505-0.761) and SAC3 (0.708, 95% CI: 0.586-0.830). The cutoff value of SAC2 was 29.7g/L.

Conclusions: SAC tested within 24 hours after ROSC might be a useful index for the prediction of short term neurological outcome for IHCA survivors. Further prospective studies are needed to validate these findings.

Ethical approval and informed consent: The study was approved by the ethics committee of the West China Hospital of Sichuan University (No. 2019201).

Trial Registration / Funding Information (only) :

Trial Registration: The study was not registered, because this was a retrospective study. A trial registration will be conducted as we are going to perform a prospective study about this topic. **Funding:** This study was supported by 1.3.5 project for disciplines of excellence, West China Hospital, Sichuan University.

#18396 : The thrills, skills and drills of "MuDiTrauma": a novel approach to simulation-based trauma education at a busy UK major trauma centre.

Authors:

Aaron Thompson (1), Salwa Malik (1)

1. Royal Sussex County Hospital, none, Brighton, UK

Keywords: Trauma, Simulation, Education, Multi-Disciplinary, Resuscitation, Emergency.

Abstract :

Emergency Department crowding and high intensity workload are well recognised barriers to accessing adequate training and learning opportunities for staff. Simulation-based medical education (SBME) has been demonstrated to provide a vehicle for improved performance in Emergency Department settings. In particular; the training of trauma teams has led to improvements in trauma care. In a healthcare setting where ever-increasing demand is made of an ever-dwindling resource; the benefits of providing comprehensive practice and stress testing for hospital wide teams and systems cannot be underestimated.

"Multi-Disciplinary Trauma Simulation" (MuDiTrauma) is a project birthed in the Emergency Department and Major Trauma Centre at the Royal Sussex County Hospital, Brighton, UK. Utilising real-life activation of the whole hospital trauma team, complex major trauma resuscitation scenarios are simulated. Extensive pre-briefing and preparations are made to ensure scenarios are both efficacious and safe for patients and staff, and an in-situ, guerrilla simulation approach is taken, where the trauma team is unaware the simulation is taking place until its exact time of onset.

High-fidelity simulation occurring in the actual clinical setting, undertaken by the real world clinical team has led to unique learning opportunities. Going beyond basics; "MuDiTrauma" provides the thrills, skills and drills to foster excellence in traumacare.

Participants involve staff from a diverse range of teams: doctors of every speciality composing the trauma team, nurses, radiographers, transfusion blood bank practitioners, paramedics and porters.

Examples of simulations delivered include managing both the logistical and clinical challenges of providing damage control resuscitation and surgery to the elderly major haemorrhage patient with refractory complete heart block who requires external cardiac pacing. Another well-received scenario was the management of gunshot wounds and rapid activation of massive transfusion systems in the context of an overloaded and crowded emergency department.

Simulations end with a hot debrief as well as a tailored expert-delivered educational session. The "MuDiTrauma" faculty facilitate a video-assisted feedback and debriefing session 1 week later with key learning points disseminated across all clinical staff in every relevant team to maximise learning.

Maintaining patient safety, hospital workflow as well as staff and bystander psychological wellbeing has been of paramount concern to the "MuDiTrauma" faculty and the remarkable buy-in from all involved has been achieved in no small part due to a robust, hospital-wide risk assessment for the project; catering for all possible staffing, capacity and acuity scenarios.

As such "MuDiTrauma"'s performance in participant feedback on a 10-point Likert scale has been impressive, with an average of >8 for educational value and

"MuDiTrauma" is an example of innovation in Emergency Department training providing hospital-wide bespoke learning, flexing and accommodating to meet the educational challenges posed by the busy, demanding environment of UK Emergency Medicine.

Trial Registration / Funding Information (only) :

Approval from Brighton & Sussex University Hospital NHS Trusts' Major Trauma Committee and Simulation Committee. No financial/pecuniary interests. No financial conflicts of interest.

#18400 : Study concerning the discomfort caused by acoustic signals of emergency vehicles upon residential areas

Authors:

Mihai - Bogdan Minel (1), Vasile - Marian Cojocaru (1)

1. Paramedic, Inspectorate for Emergency Situations (I.S.U.J.) , Bacau, ROMANIA

Keywords: emergency vehicles, noise annoyance, residential

Abstract :

Noise problems continue to be present nowadays. Local administrations must search for solutions to mitigate noise pollution within urban areas. There are also short-term traffic noise at which people are exposed. One example is related to acoustic signals generated by emergency vehicles. These signals achieve a high level of noise (about 120 dB) and affect the inhabitants. This study is trying to identify the annoyance level caused by these vehicles on people living in the surroundings of an emergency inspectorate. For this, a study case was developed in Bacau city (Romania). After a brief analysis of the noise maps developed by Bacau Municipality, it has been noticed that the noise level near the emergency inspectorate, exceeds 70 dB during the day and 55 dB at night. Taking into consideration that the traffic speed limit on that road section is under 30 km/h, the noise level observed on the noise map developed by the city hall is quite big. This could be a consequence of the high frequency of emergency vehicles that require the use of acoustic warning signals from the equipment on each intervention. The average is about 1 interventions / hour. Noise measurements were performed near the buildings (which happen to be situated at just 40 m distance by the fence of the inspectorate) and also inside an apartment in the same building. The measurements were performed when sirens of four different emergency vehicles: Ambulance B2, C.B.R.N. (Chemical Biological Nuclear Radiology), Renault Volkan (medium capacity truck with spose and water) and MAN (heavy de-carving vehicle) were on. The results show high noise levels reaching to the residential buildings (between 81 – 85 dB depending on the siren) and a noise level between 52-63 dB reaching inside the apartment. These results confirm that the people living in the surroundings of an emergency inspectorate are exposed to frequent high short term noise levels that cause great annoyance.

#18401 : septic shock in a moroccan medical intensive care unit: Epidemiological data and prognosis factors**Authors:**

Ezzouine Hanane (1)

1. medical intensive care unit-university teaching hospital Ibn Rushd, Faculty of medicine and pharmacy -University Hassan II , casablanca, MOROCCO

Keywords: septic shock;intensive care; prognosis

Abstract :**Introduction**

In spite of the progress made in the optimizing care, the septic shock is a major concern of the intensive care units in the world because of its frequency and its mortality which remains high ,more than 60%.

The aim of our study is to define the epidemiologic ,clinical ,bacteriological ,evolutionary profiles of the patients who had a septic shock and to analyze the prognostic factors related to death among patients with septic shock in a medical intensive care unit .

Patients and methods

We conducted a retrospective study over a one year period, from 01 January 2016 to 31December 2016 in the medical intensive care unit of the university hospital Ibn Rushd of Casablanca-Morocco

We included all the patients with septic shock at their admission to ICU or developed it during their hospitalization.

We collected the epidemiological and clinical data .The results of bacteriological samples were analyzed and prognostic factors related to death with septic shock were studied

Results

Thirty patients were included from 339 intensive care unit admissions.The incidence of septic shock is 8.84% .Their mean age was 45+/-15 years with mean SOFA score value of 8.32.The sites of infection most often involved were the lung and urinary tractus 83% .Bacteriological results noted a predominance of gram negative bacilli.

The overall mortality was 83.33%.The prognostic factors related to the mortality were the high SOFA score , the presence of a neurological failure and the long duration of stay .However,the identification of the infectious agent doesn't influence mortality .

Conclusion

Septic shock is a frequent reason of admission in intensive care and its management remains challenging for practitioners .our study defined factors associated to mortality as the high SOFA score , a neurological failure and the long duration of stay in the ICU.The nature of the infectious agent isn't involved as survival prognostic factor.

#18402 : A review of reviews of Emergency Department interventions for older people: outcomes, costs and implementation factors.**Authors:**

James van Oppen (1), Louise Preston (2), Suzanne Ablard (2), Helen Buckley Woods (2), Suzanne Mason (2), Simon Conroy (1)

1. , University of Leicester, Leicester, UK

2. , University of Sheffield, Sheffield, UK

Keywords: Emergency medicine, frailty, geriatrics, older age

Abstract :**Background**

Internationally, emergency and urgent care of older people is a public health priority. The management of older people in the Emergency and Urgent Care system remains sub-optimal in the UK. Strategies are needed to manage older patients sensitively, effectively, and efficiently, understanding both their clinical and broader, holistic needs. It is important to consider the strategies and interventions that have been used in the emergency care of older people, and to evaluate the evidence as to their outcomes, costs, and implementation.

Methods

A number of reviews have previously taken place in this topic area, assessing diverse interventions with differing methods and variable outcomes. We developed and registered (PROSPERO, CRD42018111461) a protocol for a review of reviews. Database searches and complementary methods identified evidence from review articles and conference abstracts, which were screened according to pre-defined inclusion criteria relating to both subject and reporting standards. Data describing interventions for older people in Emergency Departments (ED) were extracted and summaries generated in tabular and narrative form. The quality and reporting of the reviews were assessed using AMSTAR2 and Joanna Briggs Institute tools. Due to the heterogeneity of interventions and outcomes, findings were analysed narratively. McCusker's Elder-Friendly Emergency Department assessment tool was used as a framework to classify ED interventions.

Results

Eighteen review articles and three conference abstracts met our topic and reporting standard inclusion criteria. The majority were described as systematic reviews, with four of these using meta-analysis. Fourteen of the reviews reported interventions that were either initiated or wholly delivered within the ED. The remaining four reviews reported non-interventional studies focussed predominantly on quality indicators or patient preferences.

Confidence in (US-dominated) research was limited to each review's interpretation of primary studies. Descriptions of interventions were inconsistent, and there was high variability in the standards to which reviews were conducted and reported. Interventions mostly focussed on screening and assessment, discharge planning, referrals and follow-up, and multi-disciplinary team composition and professional activities. In total, 26 patient and health service outcomes were reported, including admissions and readmissions, length of stay, mortality, functional decline, and quality of life.

Discussion

Our review of reviews demonstrated that the current, extensive evidence base of primary and review studies is lacking in complexity, with limited or no evidence for the effectiveness of ED interventions; a common feature of the reviews was a call for more primary research using rigorous evaluation methods. There is little evidence in review studies for factors that influence the implementation of interventions.

There was evidence that among interventions initiated in the ED, those which were continued into the community yielded better outcomes. Service

metrics (as valued by care commissioners) were evaluated as outcomes of interventions more frequently than person-centred attributes (as valued by older people). The interventions were broadly holistic in nature, consistent with international literature supporting Comprehensive Geriatric Assessment to improve outcomes for older people with acute care needs.

Trial Registration / Funding Information (only) :

We undertook this review within a project which received NIHR Health Services and Delivery Research funding (17/05/96). JvO was supported by an NIHR Academic Clinical Fellowship.

#18403 : A qualitative exploration of the factors influencing patient flow in an emergency department**Authors:**

Loren De Freitas (1), Loren De Freitas (2), Steve Goodacre (2), Rachel O'Hara (2), Praveen Thokala (2), Seetharaman Hariharan (3)

1. School of Health and Related Research, University of Sheffield, St.Joseph, TRINIDAD AND TOBAGO
2. School of Health and Related Research, University of Sheffield, Sheffield, UK
3. Anaesthesia and Intensive Care, University of the West Indies, St.Augustine, TRINIDAD AND TOBAGO

Keywords: emergency department, patient flow, qualitative

Abstract :**Introduction**

Emergency departments have been characterised as complex adaptive systems and patient flow is an area that affects the efficiency and quality of care in emergency departments. Complex systems may comprise complex processes but the system may still be effective if the processes have the least number of steps required to produce an outcome. Improving patient flow requires an understanding of how ED processes work so that flow problems can be identified and addressed. However, there is little existing qualitative literature exploring ED patient flow as most previous studies have taken a quantitative approach, focusing on interventions to improve patient flow. This study aimed to understand the ED patient flow process and identify the factors that influence it, using multiple qualitative methods.

Methods

Multiple qualitative methods were used to explore the ED patient flow process in a single case study site in Trinidad and Tobago. Data collection took place from May 2017 to March 2018. Non-participant observations (48 hours), observational process mapping (155 hours) and informational conversational interviews were used to explore patient flow. Observational process mapping involved directly observing patient journeys across all levels of urgency. Process maps of the ED patient journey were generated from the observational process mapping data. Thematic analysis was used to analyse the data. Verbal consent was obtained from participants using an on-going opt out approach and information sheets were displayed throughout the ED. The University of the West Indies Campus Ethics Committee gave formal ethical approval and permission to conduct the research in the ED site was granted by the hospital case study site.

Results

Seven broad themes were identified as factors influencing ED patient flow: 1) ED organizational work processes, 2) ED design and layout, 3) Material resources within and outside the ED, 4) ED nursing staff levels, 5) ED nursing roles, skill mix and use, 6) ED non-clinical staff, 7) External clinical and non-clinical departments. Within these themes there were primary factors that influenced patient flow as well as secondary factors. The secondary factor represented the staff response to either enhance the primary factor or to compensate for limitations in the process. The findings in this study were used to develop a conceptual model of the factors influencing ED patient flow.

Conclusion

The findings in this study extend the existing literature on ED patient flow. The conceptual model of ED patient flow developed in this study can be used to systematically examine the factors influencing ED patient flow and may be used by policy and decision makers to improve patient flow. However, the model should be validated in other settings to evaluate its use.

#18404 : Factors associated with successful resuscitation after in-hospital cardiac arrest: a retrospective observational study performed in a tertiary hospital in south west of China**Authors:**

Yarong He (1), Peng Yao (1), Tianyong Han (1), Qin Li (1), Yu Cao (1)

1. Department of Emergency Medicine, West China hospital, Sichuan University, Chengdu, CHINA

Keywords: in-hospital cardiac arrest, return of spontaneous circulation, factors

Abstract :

Background: To investigate the temporal trends and influencing factors existed for Return of spontaneous circulation (ROSC) of in-hospital cardiac arrest patients (IHCA), in Emergency Medicine Department of a tertiary hospital in south west of China.

Method: This was a single-center retrospective observational study. Consecutive IHCA patients, with age of over 18 years, were enrolled between Oct 2010 and Dec 2016. Data were collected according to the Utstein style for all cases of attempted resuscitation for IHCA. We used logistic regression analyses to identify factors associated with successful ROSC. Furthermore, receiver operating characteristic (ROC) curve analyses were conducted to compare the predictive value of different risk factor with ROC curve analyses.

Results: The total number of admissions during this 6-year period was 1.27 million; the cardiac arrest (CA) incidence was 2.24 per 1000 admissions. Of the 1106 IHCAs included, successful ROSC was achieved in 83.66%. Univariate analysis showed that length of stay (LOS) before CA, heart rhythm, percent of monocyte, total bilirubin, high density lipoprotein, low density lipoprotein, cholesterol (CHOL), creatine kinase, serum potassium, serum magnesium and d-dimer between ROSC group and non-ROSC group were significantly different. Multivariate logistic regression analysis showed that LOS before CA (OR=0.996, 95% CI: 0.994-0.998), and CHOL (OR=0.857, 95% CI: 0.776-0.946) were independent risk factors for the successful ROSC. The ROC curve analysis indicated that LOS before CA possess a priority value in predicting the failure of ROSC for IHCA patients, with its area under the ROC curve (AUC) as 0.602 (95% CI: 0.554-0.651), much better than those of CHOL (0.573, 95% CI: 0.552-0.625).

Conclusion: Our observations confirmed the importance of LOS before CA and CHOL that influence IHCA patients' ROSC rate. LOS before CA seemed to be superior to other factors in predicting failure of ROSC for IHCA patients, which warrants further investigation to verify or improve it in the future.

Ethical approval and informed consent: The study was approved by the ethics committee of the West China Hospital of Sichuan University (No. 2019201).

Trial Registration / Funding Information (only) :

Funding: This study was supported by 1.3.5 project for disciplines of excellence, West China Hospital, Sichuan University.

#18405 : Effect of Alcohol-intake on the severity of injuries by slip down**Authors:**

Kyong Sung Yeon (1), Jin-Seong Cho (2), Jae Ho Jang (3), Yong Su Lim (4), Jae Yeon Choi (3)

1. Resident, Gil Medical Center, Incheon, KOREA
2. Associate professor, Gachon Medical College of University, Gil Medical Center, Incheon, KOREA
3. Assistant professor, Gachon Medical College of University, Gil Medical Center, Incheon, KOREA
4. Professor, Gachon Medical College of University, Gil Medical Center, Incheon, KOREA

Keywords: Trauma severity indices, Wounds and injuries

Abstract :

Background: Patients who have drunk alcohol are usually decreased mentality, making it difficult to listen to medical history and do physical examinations. Since it is difficult to assess the severity of the injury, it is not easy to decide whether or not to be actively diagnosed and treated. The purpose of this study was to investigate the effect of alcohol consumption on the severity of injury in patients who were injured by slip down.

Methods: Data from the Emergency Department-based Injury In-depth Surveillance (EDIIS) was used to analyze slip down at 23 hospitals from 2011-2016. Cases were included if they met the following criteria: (1) older than 15 years of age, (2) not transferred from other hospital, (3) not intentional injury. Patients were classified into non-severe and severe injury group. Multivariate logistic regression was used to identify the factors related to severe injury.

Results: Among a total of 365,979 subjects, 227,548 patients were included, of which 15,324(6.7%) were severely injured and 48,581(21.4%) were alcohol intakes. The accidents occurred frequently in the evening-time(16~24hrs: 39.9%). In multivariate analysis, alcohol-intakes had 1.60 odds ratio (OR) of severe injury compared to non-alcohol-intakes (95% confidence interval [CI]: 1.47-1.74). Male also had 1.80 odds ratio (95% CI: 1.71-1.84) of severe injury compared to female. The joint effect of alcohol-intake and man on the risk of occurrence of severe injury was 2.65 (OR) and 2.53 to 2.78 (95% CI) adjusted, respectively. For the occurrence of severe injury, interaction was observed between alcohol-intake and man on the additive scale (relative excess risk caused by interaction [RERI]=0.25, 95% CI: 0.09-0.41, adjusted for age, injury time, use of an ambulance, and season)

Conclusion: The risk of severe injury was found to be high when slipped down while alcohol-intake and a man. Therefore, these patients should be evaluated & treated more actively from the beginning at the emergency room.

#18409 : Out-of-Hospital Perimortem Cesarean Section – A life saving maneuver

Authors:

ELENA CRISTINA BUZATU (1), ELENA CRISTINA BUZATU (1), OANA MATES (1)

1. EMERGENCY COUNTY HOSPITAL TARGU MURES, EMERGENCY DEPARTMENT, TARGU MURES, ROMANIA

Keywords: CESARIAN SECTION

Abstract :

Mortality related to pregnancy is relatively rare in Europe (estimate 16 per 100,000 live births) although there is a large variation between countries. Factors associated with increased risk of pregnancy-related death include: advanced maternal age, race, multiparity, lack of prenatal care. The main causes of the cardiac arrest are haemorrhage , embolism, trauma, hypertensive disorders of pregnancy, psychiatric pathology and genital tract sepsis.

The “emergency hysterotomy” is recommended to be initiated within 4 minutes of maternal cardiopulmonary arrest to effect delivery at 5 minutes after failed resuscitative efforts. However, survival of the mother has been reported with PMCS performed up to 15 minutes after the onset of maternal cardiac arrest. Therefore, if PMCS could not be performed by the 5-minute mark, it was still advisable by AHA to prepare to evacuate the uterus while the resuscitation continued. In a recent retrospective cohort series, neonatal survival was documented even when delivery occurred up to 30 minutes after the onset of maternal cardiac arrest at At gestational ages >30 weeks.

In this case report, we present a 36-year-old female, gravida 4, para 3, with the gestational age of 37 weeks with , no notable medical history, who called 112 dispatch center because she was in labor, in a rural area 30 km from the nearest city. When the nearest ambulance (with a nurse) arrived they found the patient in cardiac arrest and initiated CPR. The dispatch sent immediately the Mobile Intensive Care Unit staffed with 1 emergency physician specialist, 1 emergency physician resident, 1 nurse and 2 paramedics. When we arrived the patient had received 20 min of BLS and the rhythm monitoring confirmed a pulseless electrical activity (PEA). We begun standard advanced resuscitation, oral tracheal intubation was successfully performed and the patient was manually ventilated at 1.0 inspired oxygen fraction (FiO₂) and epinephrine were administered intravenously.

Was decided immediately that a PMCS was necessary and the foetus was extracted 3 minutes after onset of the procedure. The newborn male baby was flaccid with no spontaneous breathing or detectable heart rate with Apgar score 0 at birth. Newborn life support, consisting of chest compressions, airways aspiration and orotracheal intubation with uncuffed tube was performed, vein cannulation and epinephrine were administered intravenously.

Maternal life support was continued by the team. After PMCS the hemodynamic condition did not change, and the rhythm monitoring shows asystole.

With no interval ROSC the mother was certified dead after 75 minutes of resuscitation and the baby 45 minutes after delivery.

The maternal autopsy revealed severe dilated cardiomyopathy and acute pulmonary edema as the cause of dead.

#18410 : The risk of significant traumatic brain injury in adults with minor head injury taking direct oral anticoagulants: an observational cohort study**Authors:**

Gordon Fuller (1), Rachel Evans (1), Lisa Sabir (1), Luczawski Maxone (1), Suzanne Mason (2)

1. , University of Sheffield, Sheffield, UK
2. Emergency Medicine, -, Sheffield, UK

Keywords: Head Injury, anticoagulants, Traumatic brain injury

Abstract :**Background**

Patients taking direct oral anticoagulants (DOACs) commonly undergo computed tomography (CT) head imaging after minor head injury, regardless of symptoms or signs. However, the risk of intracranial haemorrhage (ICH) in such patients is unclear, and further research has been recommended by the UK NICE head injury guideline group.

Methods

An observational cohort study was performed in 2 UK major trauma centres (Sheffield, Hull) between 26th June and 3rd September 2018. Adult patients taking DOACs with minor head injury were prospectively identified, with case ascertainment supplemented by screening of radiology and emergency department information technology systems. Clinical and outcome data were subsequently collated from patient records. The primary endpoint was adverse outcome within 30 days, comprising: neurosurgery; ICH; or death due to head injury. Adverse outcome risk was calculated overall; and for GCS 15 patients who did not meet NICE criteria for CT head imaging.

Results

169 patients with minor head injury were included (69% GCS 15, 31% GCS 14). Patients were elderly (median 82 years) and most frequently injured from ground level falls (96%). Overall risk of adverse outcome was 4% (7/169, 95%CI 2-8%). 7 patients had ICH, of whom 3 died. No patient received critical care management or underwent neurosurgical intervention. Risk of adverse outcome in patients who did not meet NICE imaging criteria was 2% (2/96, 95%CI 0-8%). Of these NICE false negative cases, one patient presented with GCS 15 and a headache; the other was GCS 15, asymptomatic, but fell >2m.

Conclusions

The risk of adverse outcome was low, particularly in patients not meeting NICE CT criteria. No patient with ICH underwent neurosurgery or received critical care, suggesting that imaging did not influence management. These findings would support shared patient-clinician decision making, rather than routine imaging, following minor head injury whilst taking DOACs.

#18411 : Impact of a qSOFA-based triage procedure on antibiotic timing in ED patients with sepsis: a prospective interventional study**Authors:**

Julien PETIT (1), Julien PASSERIEUX (2), Thierry BOULAIN (3), François BARBIER (3)

1. SAU-SAMU 45-SMUR, CHR Orléans, Orléans, FRANCE
2. Urgences-SAMU-SMUR, CHR Orléans, Orléans, FRANCE
3. Médecine intensive et Réanimation, CHR Orléans, Orléans, FRANCE

Keywords: Sepsis – Septic shock – Antimicrobial agents – Quick sepsis-related organ failure assessment (qSOFA) – Sepsis-related organ failure assessment (SOFA)

Abstract :**Background**

It has not been investigated whether the quick sepsis-related organ failure assessment score (qSOFA), a new bedside tool for early sepsis detection, may help accelerating antibiotic initiation in ED patients with sepsis.

Methods

In this prospective pre/post quasi-experimental single-ED study, patients admitted with a suspected bacterial infection were managed using standard triage procedures only (baseline) or in association with qSOFA (intervention, with prioritization of patients with a qSOFA ≥ 2).

Results

A total of 151/328 (46.0%) and 185/350 (52.8%) patients with definite bacterial infection met the criteria for sepsis in the baseline and intervention periods, respectively. The sensitivity and specificity of a qSOFA ≥ 2 for sepsis prediction were 17.3% (95% confidence interval [CI], 13.6%-21.7%) and 98.8% (95% CI, 97.0%-99.5%). Eleven (7.3%) and 28 (13.5%) patients with sepsis in the baseline and intervention periods received a first antibiotic dose within one hour following triage (primary endpoint, absolute difference 6.2%, 95% CI [-0.5%, 12.7%], $P = 0.08$). The proportions of patients with sepsis receiving a first antibiotic dose within three hours following triage (39.7% [50/151] versus 36.8% [68/185], absolute difference -2.9%, 95% CI [-13.3%, 7.3%], $P = 0.65$), requiring ICU admission, or dying in the hospital were similar in both periods. The median ED occupation rate at triage was 104.3% (interquartile range [IQR], 80.4%-128.3%), with a median number of 157 ED visits per day (IQR, 147- 169).

Conclusions

A qSOFA-based triage procedure does not improve antibiotic timing and outcomes in patients with sepsis admitted to a high-volume ED. The qSOFA value at triage was poorly sensitive for early sepsis detection.

Trial Registration / Funding Information (only) :

Trial registration (ClinicalTrials.gov) NCT03299894

#18412 : Developing and testing a set of prehospital outcome, quality and performance measures**Authors:**

Joanne Coster (1), Janette Turner (2), A. Niroshan Siriwardena (3), Jon Nicholl (1)

1. , University of Sheffield , Sheffield , UK

2. , University of Sheffield , Sheffield, UK

3. , University of Lincoln, Lincoln, UK

Keywords: Prehospital, outcome measures, performance measures, quality

Abstract :

Background

Developing new prehospital quality and performance measures is important as previous outcome measures have mainly focussed on response times or on specific emergency conditions. There has been little work to identify what is important to patients and the public, or to identify measures that reflect the wide range of calls and conditions faced by the ambulance service. The Prehospital Outcomes for Evidence Based Evaluation (PhOEBE) research programme was commissioned with the dual aims of developing methods for linking patient level ambulance data to other health information and to develop better ways of measuring ambulance service quality and performance. In this abstract we aim to assess the outcome and performance measures developed for the PhOEBE study against criteria for good outcome measures.

Method

Following a substantial programme of consensus work (interviews, consensus conference, Delphi study) to select and refine a set of outcome and performance measures, we constructed six candidate measures using the PhOEBE linked dataset. We then undertook a review of published literature to identify key criteria for good indicators, and used this to assess whether the measures developed for the PhOEBE study are good indicators of the quality and performance of the emergency ambulance system. The review identified six criteria for good indicators (important to users; valid and evidenced based; use reliable data; be statistically robust; simple to understand; remediable). The assessment was undertaken by a multi-disciplinary expert group, who assessed the indicators from different perspectives, including health-care commissioners, ambulance providers and statisticians. Each of the good indicator criterion was made up of several subcomponents and each indicator was assessed against all of the subcomponents, resulting in 510 ratings by the five experts.

Results

The measures identified and developed by the PhOEBE study relate to pain; accuracy of call ID; response time (mean/median); recontacts after non-transport decisions; unnecessary ED attendances and survival from emergency conditions. The measures mostly or partly met the six criteria for good indicators. The expert panel all agreed the PhOEBE measures are important to users, and this is reflective of the involvement of patients and the public in the research process (interviews and consensus work). One of the panel felt they required more information to assess some of the measures. There were 5/510 ratings which were rated as does not meet the criteria and four of these were for the remediable component of the survival from emergency conditions measure. In addition, there is some uncertainty around the pain measure, due to the subjectivity of pain assessments.

Conclusion

Our overall findings were that the set of indicators developed for the PhOEBE study met or partly met the criteria for good indicators, and could be used to reliably measure the quality and performance of emergency ambulance service care. As a group of measures, they have relevance to different patient groups and are relevant to multiple domains of quality. The measures include both process measures and outcome measures and have been shown to be important to a wide range of stakeholders, including patients and the public.

Trial Registration / Funding Information (only) :

Programme Grants for Applied Research (PGfAR) scheme (Grant Reference Number RP-PG-0609-10195)

#18417 : Effectiveness of a simplified CPR training program for non-medical staff working at a university hospital—a follow-up report: Changes in attitude toward CPR through repeat training and an investigation of the optimal training interval

Authors:

Hiroshi Matsuura (1), Tomohiko Sakai (1), Tetsuhisa Kitamura (1), Yusuke Katayama (1), Takeshi Shimazu (1)

1., Osaka University Graduate School of Medicine, Osaka, JAPAN

Keywords: CPR training, optimal interval, non-medical staff

Abstract :

Background: Several guidelines about CPR training exist, but the optimal training program and frequency for CPR skills and retention has not been determined. In this study, we aimed to investigate the effectiveness of repeat training and the optimal interval of attending our simplified CPR training course.

Methods: We administered a questionnaire for attitude toward CPR (check for response, chest compression, and using an AED) before and immediately after a 45-min CPR training program consisting of instruction on chest compression and AED use with a personal training manikin that was provided for non-medical staff working at a university hospital from September 2010 to November 2018. The effectiveness of repeat training was assessed with McNemar's test and a multivariable logistic regression analysis. The optimal interval of attending our simplified CPR training course was assessed with a Wilcoxon signed-rank test comparing the questionnaire scores.

Results: A total of 59 training courses were held, with 760 participants attending. Of the total, 126 participants attended the training multiple times, and 634 participants attended once. The scores of attitude toward CPR before the course increased as the number of attending times increased (adjusted OR 1.62, 95% CI 1.40 to 1.88). The scores of attitude toward chest compression and using an AED by male attendees were better than those by females (chest compression: adjusted OR 1.86, 95% CI 1.19 to 2.90, using an AED: adjusted OR 2.27, 95% CI 1.57 to 3.27). Participants' scores before the course were significantly higher when they had participated less than one year prior as compared to scores of participants whose most recent attendance was more than a year prior.

Conclusion: Repeat training for non-medical staff correlates not only with a single educational effect but also with a cumulative effect of repetitive attendance. In addition, participating in the course with less than a year's interval from the previous attendance is important for maintaining the positive attitude for CPR. More frequent training might be necessary for female non-medical staff.

#18418 : Medical perspectives on emergency mass casualty and terrorism preparedness in the Netherlands, a qualitative study**Authors:**

Sivera Berben (1), Lilian Vloet (1), Johan de Cock (2)

1. Research and innovation, HAN University of Applied Sciences, Nijmegen, THE NETHERLANDS

2. Research and innovation, Academic Network of Applied Public Health and Emergency Medicine, Amsterdam, THE NETHERLANDS

Keywords: mass casualty, emergency preparedness

Abstract :**Background:**

Mass casualty incidents, specifically incidents with chemical biological radiological and nuclear agents (CBRN) or terrorist attacks, challenge medical coordination, rescue, availability and adequate provision prehospital and hospital based emergency care. In the Netherlands, recently a new model for emergency preparedness for large scale mass casualties and terrorist attacks was introduced (2016).

The aim of the study was to provide insight in the first experiences of medical coordination rescue members and ambulance nurses with this new approach in order to identify strengths and pitfalls in emergency preparedness in prehospital emergency care in the Netherlands.

Methods:

The study had a qualitative design and was performed between January 2017 and June 2018. We used purposeful sampling and included medical coordination rescue members and ambulance nurses (n=28). We performed semi structured interviews and used a topic list that was based on the literature and content of the new introduced models. All interviews were typed out verbatim and qualitative content analyzes were used to identify relevant themes.

Results:

The main issues raised by the respondents included the following.

- The six points of departure in the CRBN model and terrorist attack approach ('1 safety first, 2 do the most for the most; 3 scoop and run; 4 acceptable risk for rescue members; 5 never walk alone, 6 standard operational procedure) were supported;
- Newly introduced definitions in the models were lacking clarity;
- Awareness of optimal personal safety, specifically for the CBRN and terrorism attack approach, was absent.
- Several rescue workers did not feel competent to perform newly introduced tasks, such as the command and control of the first ambulance arriving on scene and the medical coordination task of emergency transport by the dispatch nurse.
- Current regional differences in preparedness, potentially complicate and compromise interregional collaboration during mass casualties and terrorist attacks.

Discussion & Conclusion

The respondents supported the CRBN methods, however definitions in the Dutch models should be further clarified. Ambulance nurses and dispatchers reported a lack in competences regarding their specific tasks as coordinator on scene and coordinator of emergency transports.

As the emergency preparedness models were introduced recently, perspectives and experiences were primarily based on design and outcome of disaster exercises and not on real time casualties. In order to ensure an unambiguous approach in a real time mass scale casualties or terrorist attacks, systematic planning and evaluation of disaster exercises and real time events should include a explicitly the evaluation of the identified issues. Preferably with the use of an international framework with standardized definitions, indicators and standards.

Trial Registration / Funding Information (only) :

Trial registration = not applicable This study was not funded by others

#18419 : The impact of e-bike accidents and changing values of older patients in the Netherlands, a qualitative study.**Authors:**

Sivera Berben (1), Lilian Vloet (1), Richard Slegers (1), Edward Tan (2), Michael Edwards (3), Anne Brants (4), Gert Olthuis (5), Anke Oerlemans (5)

1. Research and innovation, HAN University of Applied Sciences, Nijmegen, THE NETHERLANDS
2. Emergency department, Radboud university medical center, Nijmegen, THE NETHERLANDS
3. Department of surgery, Radboud university medical center, Nijmegen, THE NETHERLANDS
4. Emergency department, Canisius Wilhelmina Hospital, Nijmegen, THE NETHERLANDS
5. department of ethics, Scientific Institute for Healthcare Improvement, Radboud university medical center, Nijmegen, THE NETHERLANDS

Keywords: trauma, ethics, impact, older patients

Abstract :**Background:**

In the Netherlands, an increasing number of older persons use an e-bike. The mechanical impact of e-bike accidents has been shown to be higher compared to regular bike accidents. However, the psychological impact of e-bike accidents in trauma patients is still unknown.

The aim of this study was to gain insight in the impact of e-bike accidents for older patients, the perceptions regarding emergency and follow-up care, and the possible change in values and beliefs in response to the accident. In order to provide adequate support and better (informal) care for older patients after an e-bike accident.

Methods:

We used a qualitative design and included older patients (65+ years) with a variety of injuries, who were admitted to the emergency department after an e-bike accident (n=12) and their relatives (n=11). They were interviewed within one month after the accident (T1) and after three months (T3). Interviews were transcribed verbatim and analyzed via a thematic analysis approach in order to identify the impact of the accident, their perceptions regarding (emergency) healthcare, and potential changes in values.

Results:

Many patients required (in)formal care after hospital discharge. In general patients were satisfied with the provided hospital care, however information on rehabilitation and homecare and support from surgeons, emergency physicians and nurses and staff at the outpatient clinic was perceived to be too sometimes limited and insufficient.

The analysis yielded three central themes regarding the impact of the e-bike accidents: 1) freedom impairment, 2) shifting relational autonomy, and 3) a sudden confrontation with vulnerability and mortality.

The decision to purchase an e-bike was based on central values as mobility and freedom, vitality and health, social participation and recreation. These values were put under pressure and needed to be negotiated again after the accident in order to decide whether to use the e-bike again. The older persons' decisions were influenced by their perceived physical condition, anxiety, opinions of relatives or informal caregivers and (increased) vulnerability.

Discussion:

Follow-up information after initial emergency care for older trauma patients with an e-bike accident shows room for improvement, with consideration for the psychological impact of trauma and changes in values after e-bike accidents.

Trial Registration / Funding Information (only) :

Trial registration was not applicable The study was funded by Stichting Achmea Slachtoffer en Samenleving (SASS)

#18420 : Increasing the compression velocity and acceleration improved the quality of simulated chest compression under the direction of real time visual feedback device : a before-after study**Authors:**

Yu Cao (1), Peng Yao (1), Yarong He (1)

1. Department of Emergency Medicine , West China Hospital, Sichuan University, Chengdu, CHINA

Keywords: cardiopulmonary resuscitation, chest compression, real-time feedback, dynamics, velocity, acceleration

Abstract :

Background:To investigate whether a real-time visual feedback device could improve the quality of chest compression (CC), and, if so, whether the mechanism is associated with dynamic indexes such as velocity and acceleration.

Methods:A self-control trial of 2-minutes CC on a manikin by trained rescuers compared the quality of CC without or with a visual feedback device. Demographic characteristics were recorded and CC metrics for the two tests were computed. Multivariable linear regression analyses were performed to examine the impact of variables on rate of qualified chest compression (RQCC). Multivariable logistic regression was performed to determine independent risk factors for achieving qualified chest compression (QCC) in the second test.

Results: A total of 159 participants (average age: 29.36 ± 9.0 years, 80 (50.3%) men) were recruited. RQCC of the second test was significantly greater than that of the baseline test. Multivariable linear regression analysis showed that maximum compression velocity ($V_{\text{compression}}$) and maximum compression acceleration ($a_{\text{compression}}$) were independent risk factors for RQCC for both tests. The mean $V_{\text{compression}}$ and $a_{\text{compression}}$ of the second test were significantly greater than those of the baseline test. However, $V_{\text{compression}}$ was the only independent risk factor predicting QCC achievement during the second test. ROC curve analysis showed the area under curve (AUC) was 0.84, and the optimal cut-off value of $V_{\text{compression}}$ was 39.48 cm/s.

Conclusions:Increasing the $V_{\text{compression}}$ and $a_{\text{compression}}$ might improve the quality of simulated CC and should be recommended to improve QCC. Only $V_{\text{compression}}$ was an independent risk factor for achieving QCC during CC with a visual feedback device.

Ethical approval and informed consent: The study was approved by the ethics committee of the West China Hospital of Sichuan University (No. 2017104).

Trial Registration / Funding Information (only) :

This study was supported by the NSFC of China (No. 81772037 and 81801883).

#18421 : Survey of RCEM UK members regarding their Global Emergency Medicine and humanitarian work**Authors:**

Giles Cattermole (1), Emma Fernandez (2)

1. Princess Royal University Hospital, Royal College of Emergency Medicine, Orpington , UK

2. , Royal College of Emergency Medicine, London, UK

Keywords: Global Emergency Medicine, Humanitarian, Disaster Relief, Royal College of Emergency Medicine

Abstract :**Background**

The Royal College of Emergency Medicine Global Emergency Committee asked all members to feedback their experience in Global Emergency Medicine. This is known to be a specialist area of interest for many, but there is little information available on the types of work, how their interest has developed and integrated with their day to day role in the ED.

Method

Emails were sent to all members, fellows and associates with a link to an online survey and information was shared via newsletters and social media

Results

Over a thousand responses were received and the information provided shows that this is a committed group of individuals, many of whom have little training in the area and who self-fund their travels and projects.

Only 15% of respondents had received any formal training in global EM or humanitarian work and of these the vast majority (86%) were UK based, most often completing a Diploma in Tropical Medicine and Hygiene. Respondents who lived in countries which experience the greatest need for humanitarian or disaster relief or where Emergency Medicine is under-developed, had almost no access to formal training in this area.

A third of respondents had done some GEM work overseas in the last five years, but only one third of these had formal training and 86% had self-funded their work. Of this group who had been carrying out recent work overseas a quarter of these had worked for over 12 months.

There seems to be little recognition or support for this specialist interest with only 35% feeling that their International activities counted towards their academic productivity or towards appraisal or annual review. Only 42% felt international work had benefited their career in anyway, most (54%) felt it had no impact with only a very small number 4% feeling it had impaired their career progression. Barriers to participating in this work included lack of protected time, funding, support from employers and lack of formal recognition.

When asked what areas of professional skills had improved through their GEM activity and thus, benefited their normal clinical activity, the most common was team working, leadership and decision making, education and training of others and knowledge of global health.

Only 18% of respondents were currently involved in a GEM project, but these covered a vast array of projects including service development, clinical care, disaster and relief work and training. The majority of these respondents were willing to support others interested in this area of practice. There appear to be few formal networks for this work, with most acknowledging that they relied on personal contacts developed through training or previous work.

Conclusion

Whilst representing a fairly small percentage of all RCEM contacts, this appears to be a very committed and resourceful group of clinicians, who currently feel under-supported or recognised within their normally working environment. The committee will be considering their next steps to utilise the huge pool of knowledge and skills represented within this group to provide support and information for other clinicians interested in GEM.

Trial Registration / Funding Information (only) :

n/a

#18422 : Non-urgent calls to the ambulance service: why do people call and what advice they are given?**Authors:**

Joanne Coster (1), Jon Nicholl (1), Alicia O'Cathain (2)

1. , University of Sheffield , Sheffield , UK

2. , University of Sheffield , Sheffield, UK

Keywords: Prehospital, non-urgent, clinical telephone advice, reasons for call, patient safety

Abstract :

Background

In England, approximately 10% of patients who contact the ambulance service are triaged as having low urgency health problems which may not necessitate an ambulance response. These patients often receive clinical advice by telephone instead of an ambulance being sent. This has potential to reduce pressure on ambulance service resources and, in doing so, free up ambulance responses for more urgent cases. A recent study used linked ambulance and other health event data to identify what happens to patients following the decision to give clinical telephone advice and this identified low rates of hospital admissions (2.5% -10.5%) and deaths (0.006%-0.24%) (within 3 days of receiving ambulance telephone advice). This analysis builds on this research to identify why these patients called the ambulance service and what clinical advice they received.

Methods

Using the same patient population as the previous study (n=2521 patients who received clinical telephone advice from the ambulance service and whose data was linked to other health event data through the Prehospital Outcomes for Evidence Based Evaluation, PhOEBE study), we obtained additional Advanced Medical Priority Dispatch System (AMPDS) about reason for call ('what's the problem') and clinical telephone advice data from the Telephone Advice Service (TAS). For data linkage purposes, this patient population all had other experiences of contacting the ambulance service. AMPDS and TAS data was linked to the PhOEBE study data using Computer Aided Dispatch (CAD) number (a unique ID for each patient) and date and time was used for verification of the linkage. The additional AMPDS and TAS data obtained for this study was text data, therefore a thematic coding framework was developed to code and categorise the data in order to identify reason for call and clinical advice given.

Results

All newly obtained data was successfully linked to the PhOEBE study data. Using the coding framework, we found that for this low urgency patient population, the most common reason for calling the ambulance service was pain (39.35%). Other reasons included diarrhea/vomiting (11.42%), minor health problems (e.g. wound dressing problems, nosebleeds, catheter issues) (9.12%), mental health, alcohol/drugs or crisis problems (8.45%) and difficulty in breathing (8.57%). A paramedic or nurse advised patients what to do next. Most patients were advised to seek in-hours GP care (27.6%) or to self-care (21.4%). 17.9% were advised to seek out-of-hours urgent care and 9.3% were advised to attend ED.

Conclusion

Some callers seek emergency care for low urgency health problems and ambulance services are developing ways to respond to these calls in a more cost efficient way. Given that most patients were advised primary care or self-care following ambulance telephone advice, and that low subsequent event rates were identified in the previous study, this indicates that telephone advice for low urgency ambulance service callers is largely safe, and has the potential to ensure resources are available for patients with more urgent health problems. Further work is required to understand whether telephone advice is acceptable to patients.

Trial Registration / Funding Information (only) :

N/A

#18423 : Short-term survival following in-hospital cardiac arrest: a retrospective cohort study in south west of China**Authors:**

Yu Cao (1), Yarong He (1), Peng Yao (1), Jingshi Cao (1), Rui Jin (1)

1. Department of Emergency Medicine, West China Hospital, Sichuan University, Chengdu, CHINA

Keywords: in-hospital cardiac arrest, return of spontaneous circulation, short-term survival

Abstract :

Background: Each year, over 540,000 patients undergo cardiac arrest (CA) in China. Little is known about the short-term prognosis of these patients after discharge. This study aimed to describe mortality of 28 days following in-hospital cardiac arrest (IHCA), and identify independent risk factors for it.

Method: A single institution cohort study was undertaken to investigate the 28-day mortality following IHCA. Patients, over 18 years, resuscitated to return of spontaneous circulation (ROSC) during Oct. 2010 to Dec. 2016 were included and follow-up for 28 days post CA. Cox regression analyses were conducted to identify the independent risk factors for IHCA patients' 28-day mortality in south west of China.

Results: There were 1106 IHCA included in the present study. Among them, 951 IHCA got ROSC and were included, including 611 (64.25%) males and 340 (35.75%) females, with their average age being 58.24 ± 17.96 years. Among them, 67 (7.05%) survived at least 28 days post ROSC. Univariate analysis indicated that cause of CA, initial rhythm, EICU admission, red blood cell, platelet (PLT), white blood cell (WBC), percent of monocyte, total bilirubin, direct bilirubin, indirect bilirubin, alanine aminotransferase, aspartate aminotransferase, total protein, albumin (ALB), cholesterol, alkaline phosphatase (ALP), gamma-glutamyl transpeptidase, lactate dehydrogenase, hydroxybutyrate dehydrogenase, prothrombin time, international normalized ratio and activated partial thromboplastin time were the factors that might affect the survival time for IHCA patients post ROSC. COX regression showed that initial rhythm before CA (HR=1.249 (1.065, 1.464), P=0.006), EICU admission (HR=0.741 (0.633, 0.866), P<0.001), PLT (HR=0.999 (0.998, 1.000), P=0.22), WBC (HR=1.004 (1.001, 1.008), P=0.010), ALB (HR=0.983 (0.974, 0.992), P<0.001), and ALP (HR=1.001 (1.000, 1.002), P=0.001) were independent factors affecting the 28-day mortality of IHCA patients post ROSC.

Conclusion: PLT and ALB were protective factors, while WBC and ALP were risk factors for 28-day mortality following IHCA. The mortality risk of patients with EICU admissions were lower compared with those of non-EICU admission IHCA patients, and the mortality risk of patients with asystole were higher than other kinds of initial rhythm.

Ethical approval and informed consent: The study was approved by the ethics committee of the West China Hospital of Sichuan University (No. 2019201).

Trial Registration / Funding Information (only) :

Trial Registration: The study was not registered, because this was a retrospective study. A trial registration will be conducted as we are going to perform a prospective study about this topic. **Funding:** This study was supported by 1.3.5 project for disciplines of excellence, West China Hospital, Sichuan University.

#18424 : Factors associated with accepting or refusing transferring to regional hospitals admission from emergency department in the medical center**Authors:**

NAI-WEN Ku (1)

1. , National Taiwan University Hospital, Taipei, TAIWAN

Keywords: emergency department overcrowding , emergency boarding time ,interhospital transfer, medical center transport**Abstract :**

Background: The patients' preference toward medical utilities in Taiwan has shifted greatly owing to the implementation of National Health Insurance. People nowadays tend to visit emergency departments in medical centers even for trivial problems, causing an invariable overcrowding and prolonged waiting time in the emergency departments. Thus, "Taipei Medical Center Emergency Department Referral Program" embarked in February 2014. Patients waiting for admission were suggested transferring from emergency department in the medical center to admission ward in regional hospitals after evaluation. The program has received positive feedbacks. However, the factors associated with accepting or refusing the referral remain unclear.

Purpose: The aims of the study are to explore the characterization of patients and factors related to accept or refuse the referral at "Taipei Medical Center Emergency Department Referral Program.

Method: This was a retrospective cohort study, utilizing data from the urgent patient electronic referral system "Mars", electronic medical records from a medical center in Taipei and hard copies of referral sheets from receiving regional hospitals. The study included adult patients who were evaluated and considered appropriate for transferring from 2016/01/01 to 2016/12/31. We analyzed the factors associated with accepting or refusing for referral from the medical center to regional hospitals by multiple logistic regression analysis

Result: There were 858 patients evaluated and suggested transferring to regional hospital. Of these, 420 patients accepted the referral. Age was older in patients refusing transferring (64.0 ± 19.0 vs. 57.7 ± 19.9 years, $p < 0.001$). Patients who refusing transferring has more chance of having Do Not Resuscitate (DNR) order (4.8% vs. 1.7%, $p = 0.02$), diabetes mellitus (25.1% vs. 18.1%, $p = 0.02$), hypertension (45.0% vs. 34.8%, $p = 0.003$), cerebrovascular disease (45.0% vs. 34.8%, $p = 0.003$), and dementia (6.6% vs. 3.3%, $p = 0.04$). However, they had lower triage diastolic blood pressure (74.3 ± 15.1 vs. 77.2 ± 16.2 mmHg, $p = 0.008$). Additionally, patients who accepting transferring had shorter emergency boarding time (42.9 ± 35.5 vs. 5.0 ± 4.7 hrs, $p < 0.001$), shorter duration of the time from triage to suggest transferring (29.7 ± 22.5 vs. 23.2 ± 23.8 hrs, $p < 0.001$) and shorter emergency stay (3.0 ± 1.7 vs. 1.2 ± 1.0 days, $p < 0.001$). The independent factors associated with refusing referral included age more than 65 years (OR: 0.984, 95% confidence interval (C.I.): 0.976 ~ 0.993, $p < 0.001$), lower triage mean arterial blood pressure (OR: 1.008, 95% C.I.: 1.000 ~ 1.016, $P = 0.047$) and longer duration of the time from triage to suggest transferring (OR: 0.998, 95% C.I.: 0.981 ~ 0.994, $p < 0.001$) by multiple logistic regression analysis.

Conclusions: This retrospective cohort study delineates the different characteristics, including emergency boarding time, duration the time from triage to suggest transferring and emergency stay of patients accepting or refusing referral from the medical center to regional hospitals. Patients accepting referral are younger, having higher triage mean arterial blood pressure and shorter duration of the time from triage to suggest transferring. The study improves the knowledge of healthcare practitioners for making appropriate referrals, thus could help decreasing emergency department overcrowding, improving quality of care and promoting patient safety.

Trial Registration / Funding Information (only) :

Nil

#18425 : Abstract-to-publication ratio and predictors for publication success for papers presented at the Italian Emergency Medicine Meeting: A cross-sectional study.**Authors:**

Vincenzo G Menditto (1), Lara Montillo (1), Alessia Raponi (1), Sirio Lombardi (1), Francesca Fulgenzi (2), Mattia Sampaolesi (1), Marta Buzzo (1), Francesca Riccomi (1), Alessandro Mor (1)

1. Emergency Department, Ospedali Riuniti di Ancona, Ancona, ITALY

2. Emergency department, Ospedali Riuniti di Ancona, Ancona, ITALY

Keywords: Education; Methods; Research; Clinical Teaching

Abstract :**Background**

It has been suggested that the quality of research output from a scientific meeting may be roughly estimated through the rate of presented abstracts which are subsequently published as full-text reports in international indexed journals, namely abstract-to publication rate (A:P). We performed a cross-sectional study to assess the A:P for presentations from a recent Italian national emergency medicine conference and to investigate factors correlating with the publication success.

Methods

All 357 abstracts from the 2014 Italian Society of Emergency Medicine were reviewed. Blinded to the authors and publication status, 7 investigators recorded: format (oral, poster), study design: Randomized Controlled Trial (RCT), observational cohort study, case report, or narrative report and study population ≥ 100 units. Associations between publication status and all others parameters were analyzed by simple logistic regression using SPSS 16 (SPSS Inc.). A p value <0.05 was considered statistically significant.

Results

Of the 357 abstracts, 48 abstracts (13%) have been published. The predictive factors for future publication ($p < 0.05$) were: study design, in favor of RCT (OR 13.73; 95% CI 5.52-34.08); large study population (OR 5.38; 95% CI 2.73-10.62); oral format (OR 2.82; 95% CI 1.46-5.46). The main negative predictor ($p < 0.05$) was case report design (OR 0.16; 95% CI 0.05-0.54).

Discussion and conclusions

The calculated A:P of 13% is comparable with the one we reported in a previous article in 2015 (14%). These results suggest that emergency medicine in Italy in recent years has been producing research to a lower standard compared with other countries (23-47%).

Trial Registration / Funding Information (only) :

None

#18428 : Myocarditis presenting as acute myocardial infarction

Authors:

Ikhlass Ben Aicha (1), Houda Ben Soltane (2), Ahmed Guesmi (2), Myriam KHRouf (3), ZIED MEZGAR (3), MEHDI METHAMEM (3)

1. emergency department Farhat Hached CHU, CHU Farhat Hached, sousse, TUNISIA
2. emergency departement FARHAT HACHED CHU, CHU Farhat Hached, sousse, TUNISIA
3. emergency departement FARHAT HACHED CHU, none, sousse, TUNISIA

Keywords: myocarditis, acute myocardial infarction

Abstract :

Introduction: Acute Myocarditis can have very several clinical presentations. If the forms with recent onset of cardiac failure or arrhythmia are common, fulminant myocarditis is a distinct entity and rare. The diagnosis of acute myocarditis (AM) is difficult because it is based on the combinations of clinical, electrical, morphological settings which represent a challenge for the practitioner. Our objective is to analyze demographic and clinical characteristics of our local registry of AM in Emergency department at Hospital University F.Hached of Sousse.

Methods: We report the characteristics and outcomes of 10 AM cases who were enrolled in emergency department from January 2016 to December 2018.

Results: We identified 10 patients considered to have AM according to the findings on echocardiography and after multiple investigations which considered our patients having acute myocardial infarction from the start. Acute cardiac findings of chest pain in 9 patients (90%), compatible electrocardiographs elevated creatine kinase level and regional wall abnormalities in eight (80% of patients). Acutely, the left ventricular ejection fraction was <55% for two patients; cardiogenic shock occurred in 20% of patients. Among the ten patients there was only one death after presenting a ventricular fibrillation; 8 patients of 10 had a normal coronary angiography.

Conclusion: Incidence of acute myocarditis is underestimated due to the difficulty of diagnostic related to several clinical presentations and the absence of reference method. This acute inflammation of the myocardium has recently benefited by new instruments (endomyocardial biopsy, magnetic resonance imaging) which allowed better detection and affirmation.

#18429 : Learning hypertensive emergency management: Simulation versus video case**Authors:**

Houda Ben Soltane (1), Ikhlass Ben Aicha (2), Ahmed Guesmi (1), Myriam KHRouf (3), ZIED MEZGAR (3), MEHDI METHAMEM (3)

1. emergency departement FARHAT HACHED CHU, CHU Farhat Hached, sousse, TUNISIA
2. emergency department Farhat Hached CHU, CHU Farhat Hached, sousse, TUNISIA
3. emergency departement FARHAT HACHED CHU, none, sousse, TUNISIA

Keywords: simulation , hypertensive emergency, video case, learning

Abstract :

Introduction: Contextualization and reproducibility are features of high fidelity simulation that have allowed it to take an advanced place in the medical curriculum. Teaching by "video-case" is a teaching tool based on placing the learner at the center of his learning. The objective of the study is to compare these two means of learning in the acquisition of skills concerning the management of hypertensive emergency crises.

Material and methods: Randomized prospective study including emergency family medicine residents randomized into 2 groups: simulation group, video-case group for the same educational objective: management of an hypertensive emergency crises. After randomization, the study starts with a pre-test of 10 multiple-choice questions in 10 minutes on the prerequisite knowledge. After the two teaching sessions, students are asked to repeat the same test in multiple choice questions under the same conditions to compare the progress for each student and between the two groups. As a Judgment Criterion we retained the student progression judged by significant increase in average marks between pre-test and post-test.

Results: A total of 38 residents are included whose average age is 27.6 years with a sex ratio of 0.5. The pre-test average was comparable between the two groups: 9.2 / 20 (+/- 1.9) for the simulation group and 9.4 / 20 (+/- 1.7) for the video-case group ($p = 0.268$). For the post-test, averages increase significantly within each group. It goes from 9.2 / 20 (+/- 1.9) to 13.44 (+/- 1.28) ($P < 0.001$) in the simulation group and from 9.4 / 20 (+/- 1.7) to 11.91 (+/- 1.5) ($P < 0.001$) in the video-box group. Relative progression is greater for the simulation group ($P < 0.03$).

Conclusion: The superiority of simulation method over video-case teaching is concluded.

#18434 : Peripheral regional anesthesia in isolated environment : a French military medicine survey

Authors:

Thomas Chiniard (1), Elise Dib (2), François Guénot (3), Hugues Lefort (4), Abdo Khoury (5), Gaël Cinquetti (6), Luc Aigle (7), Christian Landy (8)

1. 56th Medical Unit, 4th Armed Forces Medical Center, Air-Base116, French Military health service, Luxeuil, FRANCE
2. 53rd Medical Unit, 4th Armed Forces Medical Center, Quartier Varaigne, French Military health service, Epinal, FRANCE
3. 123rd Medical Unit, 15th Armed Forces Medical Center, Écoles de Saint-Cyr Coëtquidan, French Military health service, Guer, FRANCE
4. Emergency Medical Department, Legouest military teaching hospital, French military health service, Metz, FRANCE
5. Department of Emergency Medicine and Critical Care, University of Franche-Comté, Besançon University Hospital, Besançon, FRANCE
6. Department of Internal Medicine & Rheumatology, Legouest Military Teaching Hospital, French Military health service, METZ, FRANCE
7. 10th Armed Forces Medical Center, French Military health service, Marseille, FRANCE
8. Department of Critical Care, Desgenettes Military Teaching Hospital, French Military health service, Lyon, FRANCE

Keywords: Military medicine, Regional anaesthesia, ultrasonography

Abstract :

Aim: The medicalization policy of the French armed forces places military general practitioners (MGP) near the front line, allowing soldiers to carry out their actions away from their base camp, while maintaining operational capacities. Thus, the activity is split between primary care and combat casualty care. Regional anaesthesia (RA) techniques could be useful in both cases. The aim was to assess the state of art of RA use among MGP and to track the limiting factors.

Procedure: we conducted a multicentric observational study, with MGP from metropolitan France that realized at least one mission during the last 3 years. Each one completed a questionnaire about experience, education and RA practice during the last mission. We used chi-square tests or Fisher exact test in case of insufficient number, to cross RA practice with demographic features, experience markers and mission's characteristics. The threshold for significance was a p -value < 0.05.

Results: From October 2015 to December 2016, we collected 138 answers, of which 114 (83%) were included and analysed. Mean age was 33 ± 5 , consistent with deployed MGP profile. RA scholar education concerned 42/114 (37%) MGP, whereas RA practice based on companionship concerned 94/114 (82%) of them. During their last mission, 26/114 (23%) MGP had performed at least one RA technique. The guidance technique was anatomical for 68/70 (97%) of procedures. Among all responders, 25/114 (22%) didn't perform a RA technique even though they thought it was indicated. Their main reasons were lack of techniques' mastery (38%), missing equipment (20%), time shortness (15%), and hygiene issues (12%). None of the tested factors were statistically associated with RA practice. Although senior MGPs tend to practice ($p = 0.06$) RA more, which seems to be consistent with previous data.

Conclusion: Environmental factors, patients recruitment and lack of techniques' mastery seemed to be the main explanations of such a low practice rate. Development of RA techniques in a military environment should be associated with an adapted training that takes tactical background into consideration. It has to focus on what is feasible for primary care on one hand and combat casualty care on the other hand. Since it has been largely widespread on operations fields, and validated for RA techniques guidance in civilian practice, ultrasonography should be considered as a valuable aid in some cases. Even though RA education program has well been written for anaesthesiologists, a training program for MGPs for RA should be different and perhaps mainly based on clinical practice.

#18435 : Ultrasound directed reduction of distal radial fractures**Authors:**

Hamza Malik (1), Andrew Appelboom (1), Darryl Wood (2), Gordon Taylor (3)

1. Emergency Medicine, Royal Devon & Exeter Hospital, Barrack Road, Exeter, UK
2. Emergency Medicine, Barking, Havering and Redbridge University Trust, London, UK
3. Research Design Service, Royal Devon & Exeter Hospital, Barrack Road, Exeter, UK

Keywords: Distal radial fracture, Colles' fracture, ultrasound

Abstract :

Introduction: Colles' type distal radial (wrist) fractures are one of the commonest fractures seen in the Emergency Department (ED). Fracture displacement is usually associated with a fall onto an outstretched hand, especially in the elderly. These displaced fractures typically undergo manipulation under anaesthesia (MUA) in ED, undertaken 'blindly' without real time imaging. Inadequate fracture reduction or subsequent re-displacement of these injuries frequently results in surgical fracture fixation (closed MUA failure) and occurred in up to 30% of cases in small local audit.

Use of ultrasound to guide distal radial fracture reduction as precisely as possible might reduce instability and subsequent need for surgery. We have therefore commenced a Royal College of Emergency Medicine (RCEM) funded project ('Ultrasound Directed Reduction of Colles' Type distal radial fractures - UDiReCT') to determine whether a large trial to assess the benefit and cost effectiveness of ultrasound guided fracture reduction is both justified and feasible.

Methods: Firstly we have conducted a trainee led service evaluation of Colles' type fracture ED management to estimate the ED MUA failure rate (surgery with 6 weeks of ED MUA) rate and current use of ultrasound, across 16 UK EDs over a two month period from February 2019. Only anonymous data was used and this evaluation was exempted from formal ethical approval after review by the sponsoring institution. All adult distal radial fractures were identified from radiology and ED databases over a two week case identification period and screened against defined eligibility criteria. We excluded those under 18yrs, patients with volar displaced (Smith's) fractures and those followed up elsewhere. All fractures undergoing ED MUA were followed up for 6 weeks to determine the subsequent need for surgery. This service evaluation is being followed by a single blind feasibility RCT, comparing ultrasound guided fracture reductions with standard care, in two models of care. Together with the service evaluation, this trial will determine the potential participant recruitment rate, test a definitive trial protocol and check data collection for a future full multicentre trial.

Results: 328 distal radial fractures were identified over the two week case identification period. Of these 89 patients underwent ED MUA with a subsequent need for surgery identified in 34 (39.5%) of 86 with follow up data. No sites routinely used ultrasound to guide reductions. Our conference presentation will outline findings from the service evaluation, speculate on why ultrasound might be beneficial and discuss the controversies and challenges in this field of research. We will then describe in detail the forthcoming UDiReCT RCT protocol and discuss opportunity for European collaboration.

Trial Registration / Funding Information (only) :

Our trial is funded by the Royal College of Emergency Medicine and registered with ClinicalTrials.gov NCT03868696

#18436 : the prognostic value/performance of initial hemoglobin (Hb) in acute coronary syndrome (ACS)**Authors:**

Asma Khalfallah (1), Roua chouihi (1), Asma Khalfallah (1), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Semir Noura (2)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA
2. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: coronaries diseases,anemia,emergency

Abstract :

introduction:the optimal level of Hb during ACS is unknown.In this study we aimed to investigate whether admission Hb levels have a predictive value of complications following ACS.

methods:the data of this study derived from two large prospective studies conducted in the ED of the university hospital of monastir (GIK and IAPREK study).Inclusion criteria was : patients admitted to the ED for ACS between (2010-2018).

Exclusion criteria: hemodynamic instability, conduction disorders, respiratory distress. The patients were divided into three groups based on admission Hb levels: group I Hb 14g / dl. The 1-month and 1-year CV events of all three patient groups were followed up.

Results: 642 patients were enrolled.

Conclusion: In this study, we demonstrated that increased admission Hb levels were with higher rates of 1-year major adverse CV events following ACS.

#18437 : Epidemiology of patients admitted to the Emergency Department for chest pain: seven-year experience**Authors:**

Asma Khalfallah (1), Asma Khalfallah (1), khoulood Mefteh (1), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Semir Nouira (2)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA

2. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: coronaries diseases,emergency,Monastir

Abstract :

introduction:

acute coronary syndrome (ACS) is a major public health issue all over the world. The Aim of this study is to determine the prevalence of ACS in a sample of Tunisian patients admitted to the emergency department with chest pain and evaluate the relationship between ACS and cardiovascular risk factors (CVRF) in this population.

Methods:

Patients consulting the ED for non-traumatic chest pain from January 2012 to December 2018. Standardized case report form was used to collect patients data. Univariate logistic regression analysis was performed to identify age and gender-related CVRF in ACS.

Results:

Out of all patients included:

816 patients had no CVRF, of which 51 patients (6.3%) were classified as ACS;

3067 patients admitted with chest pain had no past history of cardiovascular disease, among which 430 patients (14%) had ACS.

ECG findings:

830 patients: abnormal ECG (374 patients -45% were classified as ACS)

2207 patients: normal ECG (164 patients -7.47% were diagnosed as ACS)

conclusion:

Largest database of the incidence of ACS in Tunisia

Trial Registration / Funding Information (only) :

Introduction: Acute Coronary Syndrome (ACS) is a major public health issue all over the world. The Aim of this study is to determine the prevalence of ACS in a sample of Tunisian patients admitted to the emergency department with chest pain and Evaluate the relationship between ACS and cardiovascular risk factors (CVRF) in this population. Methods: Patients consulting the ED for non-traumatic chest pain from January 2012 to December 2018. Standardized case report form was used to collect patients data. Univariate logistic regression analysis was performed to identify age and gender-related CVRF in ACS. Results: Out of all patients included: 816 patients had no CVRF, of which 51 patients (6.3%) were classified as ACS; 3067 patients admitted with chest pain had no past history of cardiovascular disease, among which 430 patients (14%) had ACS. ECG findings: 830 patients: abnormal ECG (374 patients -45% were classified as ACS) 2207 patients: normal ECG (164 patients - 7.47% were diagnosed as ACS) Conclusion: Largest database of the incidence of ACS in Tunisia

#18438 : Initial White Blood Cell Count Predicts Subsequent Bacteremia in Burn Patients: A Retrospective Analysis of Severe Burn Patients from Formosa Color Dust Explosion in 2015**Authors:**

Po-Hsiang Liao (1), Chorng-Kuang How (2), Hung-Tsang Yen (2), Yi-Tzu Lee (2)

1. Department of Emergency Medicine, Taipei Veterans General Hospital, Taipei City, TAIWAN
2. Department of Emergency Medicine, Taipei Veterans General Hospital, Taipei, TAIWAN

Keywords: Formosa Color Dust Explosion, Severe Burn, Bacteremia

Abstract :

Background: Infection is the most common complication in hospitalized severe burn patients, and sepsis accounts for over 50% of the cause of mortality. However, limited literature reports early effective predictors for bacteremia among burn patients. This study aims to identify cost-effective biomarkers in the emergency department (ED) for prediction of subsequent bacteremia of the burn mass casualty.

Methods: On June 27, 2015, a flammable cornstarch-based powder explosion resulted in 499 burn casualties in Taiwan. A total of 35 patients were admitted to Taipei Veterans General Hospital. These severe burn patients (mean total body surface area 47%) in this event were young (mean age 21.9 years) and healthy without comorbidities. Laboratory tests included white blood cell (WBC) count, C-reactive protein (CRP) levels, platelet (PLT) count, and neutrophil-to-lymphocyte ratio (NLR) performed at ED. We conducted a retrospective chart review of vital signs, blood labs, culture data, and performed statistical analysis correlating these to bloodstream infections. Receiver operating characteristic (ROC) curve analysis and calculation of Youden index were used to determine the better prognostic or diagnostic biomarkers.

Results: 14 patients (40%) had subsequent bacteremia. The major infection source came from skin and soft tissue infections ($n = 8$, 57%). The most common causative pathogen was *Acinetobacter baumannii* complex. WBC counts were significantly higher in the bacteremia than the non-bacteremia group (mean 28271/mm³ versus 18790/mm³, respectively, $P=0.003$). Area under curve (AUC) in diagnosis of bacteremia versus non-bacteremia was 0.821 for WBC (cut-off value, 16200/mm³, $P < 0.001$) with 100% sensitivity and 61.9% specificity. The levels of CRP, PLT and NLR were not significantly different between the two groups.

Conclusions: WBC count is a good and cost-effective biomarker in ED to predict subsequent bacteremia after burn injuries.

Trial Registration / Funding Information (only) :

No conflict of interest. Ethical approval by the institutional review board of Taipei Veterans General Hospital.

#18440 : Syncope in Croatian children visiting a pediatric emergency department

Authors:

Zdenka Plesa Premilovac (1), Iva Topalusic (2), Katarina Vulin (3), Alen Svigir (2)

1. Pediatric Emergency Department, Children's Hospital Zagreb, Zagreb, CROATIA
2. Emergency Department, Children's Hospital Zagreb, Klaićeva 16, Zagreb, Croatia, Zagreb, CROATIA
3. Emergency Department, Children's Hospital Zagreb, Zagreb, CROATIA

Keywords: children, emergency, syncope

Abstract :**Background:**

The aim of this study was to assess various factors related to the visits of children to the Emergency Department of Children's Hospital Zagreb, Croatia, after experiencing syncope.

Methods:

A database with information about all ED visits during 2018 was analyzed. Out of 14115 visits, syncope was present in 96 patients (0.6%) and majority of them were girls (68%). The mean age of the patients did not differ between the boys and girls (girls 12.84 ± 3.86 and boys 12.71 ± 3.54 ; $p = 0.868$; age range 3-18y).

Results:

Most of the patients arrived between 8.00 am and 4.00 pm (57%), 32% between 4.00 pm and 10 pm, while 10% of them came during night. 71% arrived during workdays, 29% during weekend and 82% during the school-year. It is obvious that there were more syncope episodes while the school obligations last. 79.1% of patients arrived as emergency, while the rest were referred by their primary pediatricians. Most of the patients were released after the visit, while 22% were admitted for hospital treatment and diagnostics (cardiology and neuropaediatric department) due to diagnostic dilemma, recurrent syncope or new symptoms. No statistical differences in time of visits were found between genders.

60% experienced the syncope for the first, second (19%) or third (11%) time, the highest being 6 episodes (3%). The event lasted

Depending on the assessment they underwent diagnostics, usually EKG (70%; 2% pathological), EEG (20%; 1% pathological) and blood work (57%; 6% of all pathological). Some were sent to other specialists; neuropaediatrician (13%, all normal outcome), cardiologist (12.9%; 1% pathological) and psychiatrist (6%; 2% abnormal results).

Conclusion:

At release, 70.8% were diagnosed with reflex syncope (63.5% vasovagal and 7.3% situational), hyperventilation (7.3%), heat illness (4.1%), pseudo syncope (4.2%), breath holding (4.2%), orthostatic syncope (3.1%), convulsions (3.2%), toxin exposure (2.1%) and anaphylaxis (1%). A potentially life-threatening was an anaphylactic shock, toxin exposed children, heat syncope and exercise associated collapse. In conclusion, the majority of the children experiencing syncope in pediatric ED were not life endangered by cardiac or other underlying etiology. Specialists in ED should recognize specific conditions that require attention. Detailed history, meticulous clinical exam and specific diagnostic procedures are the best approaches to a child with syncope.

#18441 : Serum Cholesterol Level as Prognostic Factor in Post-cardiac Arrest Patients.**Authors:**

Min jung Kathy Chae (1), Eun Jung Park (2)

1. Emergency Medicine, Ajou University Hospital, Suwon, KOREA

2. Emergency Medicine, Ajou University hospital, Suwon, KOREA

Keywords: cardiac arrest, cholesterol, prognosis

Abstract :

Background: Low cholesterol level has been investigated as the risk factor of onset of sepsis and prognostic factor of mortality. Sepsis is complicated inflammatory process with ischemic-reperfusion injuries. Post-cardiac arrest syndrome also has global ischemic-reperfusion injury and considered as sepsis-like syndrome due to the severe inflammatory process. In previous study, oxidative stress was elevated and cholesterol levels were lower in post-cardiac arrest patients compared to normal patients. The aim of this study was to investigate whether initial serum cholesterol levels can predict the survival discharge and neurologic outcome in post-cardiac arrest patients.

Methods: This was a retrospective observational study performed in a tertiary care teaching hospital in South Korea from January 2012 to June 2018. Patients visiting emergency room (ER) with cardiac arrest or with recovery from cardiac arrest were screened. Patients followed by return of spontaneous circulation (ROSC) and admission for post cardiac arrest care were included. Patients who is younger than 18 years old and who did not take serum cholesterol level test were excluded. Patients were managed as Korean guideline of advanced cardiopulmonary life support (ACLS), 2015. After ROSC, all the patients were received post cardiac arrest care including targeted temperature management (TTM). Demographics, underlying disease, variables related to cardiac arrest, laboratory findings, radiologic data, received management, severity score as sequential organ failure assessment (SOFA) and variables related to outcome were collected. Cerebral performance category (CPC) was used as scoring system of neurological outcome. CPC 1 or 2 were defined as good neurological outcome and CPC 3 to 5 were defined as bad neurological outcome. The significance of intergroup differences was assessed by Fisher's exact test or Mann-Whitney U test. Multiple logistical regression analysis was performed to identify the factors that could be considered independent factor for the prognosis. The performance to predict prognosis was checked using the area under the receiver operating characteristic curves (AUROC).

Results: 355 patients were enrolled. 192 patients (54.1%) were survived at discharge. 76 patients (21.4%) at discharge and 64 patients (18.0%) at 1 month after discharge had good CPC. Cholesterol levels at admission were significantly high in patients with survival ($p=0.01$), good CPC at discharge ($p=0.00$) and good CPC at 1 month after discharge ($p=0.00$). Multivariate logistic regression revealed that duration of CPR and cardiac cause, SOFA score were the predicting factor of survival ($p=0.00$). Predicting factors of good CPC at discharge were duration of CPR and cardiac cause, cholesterol level ($p=0.000$). Predicting factors of good CPC at 1 month after discharge were duration of CPR and cardiac cause, SOFA score, cholesterol level ($p=0.000$). AUROC of the cholesterol to predict survival, good CPC at discharge and 1 month after discharge were 0.603, 0.696 and 0.710, respectively.

Conclusions: Serum cholesterol level at admission was higher in survived patients and patients with good neurologic outcome. Duration of CPR, cause of arrest and SOFA score were predicting factor of survival and good neurological outcome. Serum cholesterol level at admission was one of the predicting factors for good neurological outcome in post cardiac-arrest patient.

#18443 : Resistin – can it be a new early marker for prognosis in patients who survive after a cardiac arrest? A pilot study.

Authors:

Raluca M. Tat (1), Adela Golea (2), Ștefan C. Vesa (3), Daniela C. Ionescu (1)

1. Department of Anesthesia and Intensive Care I, "Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, ROMANIA

2. Discipline of Emergency Medicine, "Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, ROMANIA

3. Department of Pharmacology, Toxicology and Clinical Pharmacology, "Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, ROMANIA

Keywords: cardiac arrest, biomarkers, resistin, S100B, ENS

Abstract :

Aim: The aim of our study was to evaluate the potential role of resistin in estimating the 30 days prognosis in patients with hypoxic-ischemic organ injury who survived after a cardiac arrest (CA).

Materials and methods: The study included 40 patients resuscitated after a non-traumatic out-of-hospital CA admitted in Emergency Department. All patients were followed for 30 days after CA or until death. Clinical data on admission were recorded. Blood samples were collected on admission in ED (0-time interval), and at 6, 12, 24, 48 and 72 h following resuscitation. Serum concentrations of resistin, S100B and neuron specific enolase (NSE) were measured. Several predictive scores for the mortality at 30 days were created with logistic regressions.

Results: At each time interval, median serum levels of resistin and S100 B were significantly higher in non-survivors compared to survivors. For NSE, plasma levels were significantly lower in survivors as compared to non-survivors at 48 and 72 hours, respectively. Accurate predictive scores for 30-days mortality were the ones which included the values of resistin and S100B measured at 12 h after admittance [AUC 0.938 (0.813-0.989), sensitivity 85.71% (67.3% – 96%), specificity 91.67% (61.5% - 99.8%), $p < 0.001$], which included the values of all three markers measured at 12 h after admittance [AUC 0.955 (0.839 - 0.995), sensitivity 82.14% (63.1% - 93.9%), specificity 100.00% (73.5% - 100.0%), $p < 0.001$] and the that included the values of resistin and S-100B at 6 h together with serum lactate on admission [AUC=0.994 (0.901-1.0), sensitivity 96.4% (81.7% - 99.9%), specificity 100.00% (73.5% - 100.0%), $p < 0.001$].

Conclusion: In our study, serum levels of resistin or a combination of resistin with S-100B or resistin with S-100B and lactate, were highly predictive for 30 days mortality in resuscitated patients after CA. Further studies on large number of patients are needed to confirm our data.

Trial Registration / Funding Information (only) :

This study was largely funded by the "Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, through the Doctoral Research Project-2015 (No. 7690 / 42 / 15.04.2016). The financial support allocated from the grant was used for the acquisition of biomarkers and laboratory supplies. The sponsor had no involvement in study design, collection, analysis and interpretation of data, writing of the manuscript or decision to submit the manuscript for publication.

#18444 : Comparison of heated humidified high-flow nasal cannula flow rates (1-L/kg/min vs 2-L/kg/min) in the management of severe bronchiolitis**Authors:**

Ali Yurtseven (1), Caner Turan (2), Eren Erseven (3), eylem ulas saz (1)

1. EGE UNIVERSITY SCHOOL OF MEDICINE, DEPARTMENT OF PEDIATRICS DIVISION OF EMERGENCY MEDICINE, Izmir, TURKEY

2. EGE UNIVERSITY SCHOOL OF MEDICINE, DEPARTMENT OF PEDIATRICS DIVISION OF EMERGENCY MEDICINE, Izmir, TURKEY

3. Department of Pediatrics, Division of Emergency Medicine, Ege Üniversitesi Tıp Fakültesi, Çocuk Sağlığı Ve Hastalıkları, Izmir, TURKEY

Keywords: Bronchiolitis, Emergency department, High-flow nasal cannula, Flow rate

Abstract :

Objective: In recent years, although heated humidified high-flow nasal cannula (HHHFNC) therapy has commonly been introduced as a novel method for the management of acute respiratory distress due to bronchiolitis, the optimal flow rate is still unknown. Few clinical studies compare the effects of various HHHFNC flow rates and there is no study comparing flow rates on bronchiolitis 2 L/kg/minute with 1 L/kg/minute. In this study, we aim to compare the HHHFNC flow rate of 1-L/kg/min (1L) with 2-L/kg/min (2L) in patients with severe bronchiolitis presenting to the pediatric emergency department.

Study design: We performed a prospective clinical study in which all patients were allocated to receive these two flow rates. The primary outcome was admitted as treatment failure, which was defined as a clinical escalation in respiratory status. Secondary outcomes covered a decrease of respiratory rate (RR), heart rate (HR), the clinical respiratory score (CRS), rise of peripheral capillary oxygen saturation (SpO₂) and rates of weaning, intubation and intensive care unit (ICU) admission.

Results: One hundred and sixty-eight cases (88 received the 1L flow rate and 80 the 2L flow rate) were included in the analyses. Treatment failure was 11.4% (10/88) in the 1L group, and 10% (8/80) in the 2L group (p=0.775). Significant variation in the intubation rate or the ICU admission rate was not determined. At the 2nd hour, the rate of weaning (53.4% vs. 35% ; p=0.017), the falling down of the CRS (-2.1 vs. -1.5; p<0.001), RR (-15.2 vs. -11.8; p<0.001), and HR (-24.8 vs. -21.2; p<0.001), and the increase of SpO₂ (4.8 vs. 3.6; p<0.001) were significantly more evident in the 1L group.

Conclusions: HHHFNC with the 1-L/kg/min flow rate, which provides a more frequent earlier effect, reached therapy success as high as the 2-L/kg/min flow rate in patients with severe acute bronchiolitis.

#18445 : Analysis of limited-sequence head computed tomography for children with ventriculo-peritoneal shunt: potential to reduce diagnostic radiation exposure.

Authors:

Ali Yurtseven (1), Caner Turan (2), Eren Erseven (3), Cenk Eraslan (4), eylem ulas saz (1)

1. EGE UNIVERSITY SCHOOL OF MEDICINE , DEPARTMENT OF PEDIATRICS DIVISION OF EMERGENCY MEDICINE, Izmir, TURKEY
2. EGE UNIVERSITY SCHOOL OF MEDICINE , DEPARTMENT OF PEDIATRICS DIVISION OF EMERGENCY MEDICINE, Izmir, TURKEY
3. Department of Pediatrics, Division of Emergency Medicine, Ege Üniversitesi Tıp Fakültesi, Çocuk Sağlığı Ve Hastalıkları, Izmir, TURKEY
4. Department of Radiology, Ege Üniversitesi Tıp Fakültesi, Izmir, TURKEY

Keywords: children, hydrocephalus, limited sequence computed tomography, VP shunt malfunction

Abstract :**Background and Objectives**

Complications related to ventriculoperitoneal shunt (VPS) are common, and multiple revisions are almost expected throughout a patient's lifetime. Standard noncontrast head computed tomography (CT) that is currently the gold standard for diagnosis of VPS dysfunction, consists of an average of 35 to 40 sequences and causes severe radiation exposure. However, it is stated that the evaluation of four sequences which show 4 ventricles, 3 ventricles, lateral ventricles and basal ganglia may be sufficient for the diagnosis of VPS malfunction. This may significantly reduce the radiation exposure. The aim of this study was to determine the feasibility of the four-sequence limited head CT for predicting VPS malfunction.

Methods

We performed a retrospective analysis of the PED medical records (MRs) between January 2013 and December 2017 that involved all patients who received a head CT for suspected VPS malfunction. MRs were reviewed to describe demographic, clinical characteristics surgical interventions and full head CT reports. For all enrolled patients, a limited series was generated from the last CT scan by selecting four representative axial slices based on the sagittal scout image. Four slices selected at the level of the fourth, third ventricle, basal ganglia level, and lateral ventricles, respectively. A blinded neuroradiologist evaluated the limited 4- slice CT to determine the VPS malfunction. After this review, we compared the standard full head CT reports with the limited 4- slice CT, and analyzed the sensitivity and specificity of the 4- slice CT to predict VPS malfunction. We also calculated the real 4 –slice CT sensitivity and specificity for children who received surgical shunt revision.

Results

A total of 164 patients were enrolled in the study. The mean age was 54 ± 24 months and 85 (52%) were males. The most common presentation complaints were vomiting (27%) and seizure (17%). V-P shunt revision was performed in 60 patients (37%) as a result of clinical and radiological evaluation. When we compared the standard complete head CT reports with the limited modality, the limited 4-slice CT had sensitivity, specificity 83% and 97% respectively, for the evaluation of the changes in ventricular size. However, when the analyze performed based on surgical V-P shunt revision, only one case would have been missed with the limited 4-slice CT. The sensitivity was 98% and specificity 78%. The effective dose (ED_{50}) of limited 4-slice head CT was 0.32 mSv, while the ED_{50} of the standard head CT was 2.7 mSv. In this way, the prefer of a limited head CT instead of a complete head CT may provide about 88% reduction in radiation dose.

Conclusion

The present study demonstrates that utilization of limited head CT scan in the evaluation of children with suspected VPS malfunction is a feasible strategy for the evaluation of the ventricular size as well as prediction of surgical intervention. Further prospective, well designed studies are needed to evaluate the reliability of limited head CT for the clinical evaluation of VPS malfunction.

#18449 : Diagnostic and Prognostic Value of Biomarkers and Pediatric Sequential Organ Failure Assessment in Pediatric Sepsis; A Prospective Pilot Study**Authors:**

Caner Turan (1), Ali Yurtseven (1), Eren Erseven (1), Benay Turan (2), Pinar Yazici Ozkaya (3), Elif Azarsiz (4), Eylem Ulas Saz (1)

1. Department of Pediatrics, Division of Emergency Medicine, Ege University School of Medicine, İzmir, TURKEY
2. Department of Pediatrics, Ege University School of Medicine, İzmir, TURKEY
3. Pediatric Critical Care Unit, Ege University School of Medicine, İzmir, TURKEY
4. Department of Pediatrics, Pediatric Biochemistry, Ege University School of Medicine, İzmir, TURKEY

Keywords: sepsis, septic shock, mortality, children

Abstract :**Introduction**

The sepsis and septic shock remain major causes of child morbidity and mortality, despite the use of modern antibiotics and resuscitation therapies. Recent interest has focused on biomarkers for early diagnosis, and evaluation the outcomes of sepsis; but there is a still lack of early diagnosis and timely intervention for sepsis in the emergency department (ED).

The primary aim was to investigate the role of C-Reactive Protein(CRP), Procalcitonin(PCT), soluble-urokinase plasminogen activator receptor(suPAR) and Presepsin in the early stratification of patients with sepsis. The usefulness of pediatric Sequential Organ Failure Assessment (pSOFA) for predicting of the mortality and the rate of PICU admission in children with septic shock were also investigated.

Methods:

This prospective pilot study was conducted at academic pediatric ED between September 2017-March 2018. All children who met sepsis criteria admitted to ED were involved to study. They kept following up after ED management and their blood samples were taken upon admission on day 0, 1, 2, 4 and 7. The definition made as sepsis, severe sepsis and septic shock. At the same period, 100 healthy children chosen as the control group. The patient characteristics, clinical features, diagnosis, co-morbidities, source of infection, laboratory results (CRP,PCT,lactate,suPAR and Presepsin) and treatments were recorded. The pSOFA score was calculated during first hour of admission. Length of stay in ED and hospital was noted. The main outcome measure was in 7 and 30-day mortality.

Results:

Seventy-one children with sepsis (n=14), severe sepsis (n=21) or septic shock (n=36) were admitted to the pediatric ED. The median age was 12.1 months (IQR 1-11.5; min 1 mo-max 10 yrs);36 were male and 35 female. Clinical findings were toxic-appearance (87.3%), mottled-cool skin (88.7%) and delayed capillary refill (53.5%). Overall, altered-mental-status was present in 37 (52.1%), more observed in severe sepsis (13/21) and septic shock group (21/36)(p<0.05). The source-of-infection was pneumonia in 24(34%), bacteriemia in 20, gastrointestinal in 12, catheter infections in 7 and meningitis in 6. Overall mortality rate was 15.4% (11/71) and three patient died in the first 24 hour of admission. Two of remaining 68 children died in D1-D2, both two in D2-D4 and D4-D7 and 2 children died in D7-D28. The median of the pSOFA scores were 0.5 (IQR 0-4), 5 (IQR 3.5-6.5) and 7 (IQR 4-8) in sepsis, severe sepsis and septic shock groups, respectively. All mortalities were seen in children who had underlying disease(p<0.05). The sensitivity and specificity of pSOFA-score >7 in mortality were 63.6% and 81.7% and mortality rate was higher when the pSOFA≥5 at the admission(p<0.05). The median PCT,CRP and lactate levels were 6.3ng/ml, 7.8mg/dL and 2.6 on D0 (n=71) and 1.8ng/ml, 2.2mg/dL and 1.2 on D4 (n=64). On D0, the median PCT,CRP and lactate levels were 8.5ng/ml, 7.95mg/dL and 2.4 in the 68 survivors and 3.1ng/ml, 2.3mg/dL and 5.0 in the 3 nonsurvivors(p<0.05).

Discussion&Conclusions:

This suggests that further studies are indicated to determine whether children with severe sepsis or septic shock are less likely to die if the lactate was higher and pSOFA≥5 at the admission to ED.

Trial Registration / Funding Information (only) :

The study was approved by the local Institutional Review Board, and the written informed consent was obtained. The study was supported by the Scientific Research Projects of Ege University (Project ID 20230).

#18450 : International education in emergency medicine – are instructors aware of cultural differences in teaching and learning?**Authors:**

Monika Brodmann Maeder (1), Raphael Saghir (2), Hermann Brugger (3), Aristomenis Exadaktylos (1)

1. Department of Emergency Medicine, Inselspital, Bern University Hospital, Bern, SWITZERLAND

2. , Freiburger Spital, Freiburg, SWITZERLAND

3. Institute of Mountain Emergency Medicine, EURAC, Bolzano, ITALY

Keywords: Medical education; Intercultural competence, Rescue

Abstract :

Background: The growing mobility of our society and exponential advances in communication and technology have influenced education and how education is delivered. Despite huge achievement, education in different cultural areas remains challenging. Educational projects in the field of mountain rescue in Nepal have been in place since 2009 and focused on the training of Nepalese rescuers and physicians, facilitated by Western teachers. In 2015, the first instructor course for Nepalese rescuers and rescue doctors took place with the goal of creating a Nepalese faculty for future training. During this course, we conducted a prospective observational cohort study with Western teachers and Nepalese “students”. We were interested in differences of communication styles between the Western Instructors (WI) and the Nepalese Instructor Candidates (NIC).

Methods: WIs and NICs were asked to self-assess their intercultural competence with the help of questionnaires. The responses were compared and analyzed for differences between WIs and NICs and differences in a pre–post assessment of the WIs. In addition, semistructured interviews were conducted with randomly selected NICs. The study was approved by the ethical committee of Bolzano/Italy.

Results: The sample consisted of 18 NICs and 8 WIs. Six WIs were Italians, one German, and one Slovenian. Seven were men. The average age of WIs was 45.9 – 9.7 years. All NICs were Nepalese and men. The average age of NICs was 32.8 – 7.3 years.

In a conflict situation, half of WIs preferred exchanges that are dispassionate, whereas nearly all (17 of 18, 1 missing) of the NICs declared a preference for people to reveal their true feelings and emotions. (Fisher’s exact test = 0.006, $p < 0.05$). When disagreeing in a situation, 7 of 8 WIs and 9/18 NIC preferred to be told directly about the problem, no matter the consequence. Alternatively, one WI and half of NICs indicated that they would prefer not to speak openly so as not to offend anyone (Fisher’s exact test = 0.099, $p < 0.05$). When negating someone’s comment or request, 6/8 WIs preferred to say so directly and unambiguously. NICs preferred to convey this without saying so directly. Although we did not find significant differences in WI’s knowledge of the host culture before and after the course ($t = 0.293$, $p = 0.778$), there was a trend for WIs to change their attitude toward the host culture after the course ($t = -2.278$, $p = 0.057$).

Discussion: The results of this study highlight potential differences in communication styles between cultures that flow into teaching and learning. Responses from Nepalese participants indicate that knowledge of cultural norms and preferred communication styles is important to avoid misunderstandings and ineffective educational experiences. Additional effort should be directed toward the way the message is conveyed with less emphasis on the content of the message: the method of teaching, the level of interaction, and the sensitivity of the faculty are at least as important as the course content. Faculty members should be prepared before implementing medical training abroad and should have time to experience the host culture.

#18451 : Tissue Donation Rates

Authors:

Dean McAvoy (1), Amy Bryce (2), Monica Wallace (3)

1. , Mr, GLASGOW, UK

2. , Ms, GLASGOW, UK

3. , Dr, GLASGOW, UK

Keywords: tissue donation, transplant, death certification

Abstract :**Title**

Tissue Donation Practice in the Accident and Emergency Department of the Royal Alexandra Hospital, Paisley.

Authors

Dean McAvoy & Amy Bryce [4th year medical students], Clinical Supervisor: Dr Monica Wallace [Consultant ED physician]

Background

(52 words)

The imbalance between demand for tissue transplants, and those available, is a worldwide public health concern. Unlike organ donation, tissue donation carries less restrictions, allowing a larger proportion of deceased patients to donate.

Aim: To investigate the incidence of discussion regarding tissue donation with suddenly bereaved relatives in the emergency department.

Methods/Design

(96 words)

Data was obtained retrospectively from patients' medical notes uploaded on Clinical Portal who died between 26/12/17 - 23/04/18. Fifty patients met inclusion criteria. Data collected included:

- Patient identifiable details: age, sex and CHI number.
- Date and cause of death.
- Documentation of tissue donation discussion?

Other than standard patient details, data was recorded as either yes or no (positive or negative). Patients were excluded only if past medical history stated an exclusion condition (Dementia, BBV etc.). If no medical history was present, patients were also excluded as this aspect of donation criteria could not be accurately assessed.

Results/Contributions

(106 words)

One discussion regarding tissue donation between deceased relatives and medical staff was recorded in medical notes out of 42 deaths deemed suitable for donation. The reason for non-discussion was unknown. The results suggest that the department is not routinely discussing tissue donation with family members.

It has been suggested, there is a common lack of awareness regarding tissue donation amongst healthcare staff. Physicians often assume patients are unsuitable for donation due to health issues, age or the timing between death and tissue procurement.

We propose that small interventions will make a huge impact on the donation rates within the accident and emergency department.

Additional info

(21 words)

Staff training regarding the importance and correct procedure for approaching tissue donation discussion and a death documentation checklist have been implemented.

#18452 : Designing the 'Ideal' resus room**Authors:**

Dean McAvoy (1), Fiona McKirdy (2)

1. , Mr, GLASGOW, UK

2. , Miss, GLASGOW, UK

Keywords: Resus, design, ergonomics

Abstract :**Title**

Designing The 'Ideal' Resus Room

Authors

Dean McAvoy & Fiona McKirdy [4th year medical students], Clinical supervisor: Dr Laura McGregor [ED Consultant physician]

Organisation

The University of Glasgow, University Hospital Monklands

Background

(62 words)

Despite the importance of design in healthcare and the magnitude of clinical presentations that arise within a resus room, there is little official guidance on what should be within a resus room and how it should be designed to best optimise function and patient safety. By visiting resus departments throughout Scotland, information was gathered to formulate recommendations for the 'ideal' Resus Room.

Methods/Design

(92 words)

9 hospitals across Scotland were visited, audited and photographed over a five-week period. A resus room checklist was compiled using current literature. This was used as a template for department visits. Resus rooms were assessed in the following areas: layout, protocols, access and staffing. Staff from each unit were also approached with a questionnaire to gain their own opinions for qualitative analysis. An online version of this continues to be active. Checklists and questionnaires were collated at week 5, Common themes were elucidated and then used to formalise recommendations for resus room design.

Results/Contributions

(82 words)

Common themes were analysed from checklists and questionnaires. Themes were mainly consistent across all sites. 9 checklists and 31 questionnaires from 20 hospitals were compiled as preliminary results. 61% of questionnaire respondents did not have access to appropriate technology within their resus bays. Lack of space and storage was consistently flagged up as a main concern, as was access to imaging and critical care areas. Role allocation was also highlighted, with 58% of respondents having no clear identifiers within their resus departments.

Additional info

This project was part of a student selected module within University Hospital Monklands ED and is ongoing with hopes of making recommendations to the development of the resus room within the new build of the hospital.

#18453 : Risk factors for developing a delirium in the emergency department**Authors:**

Renan Spode (1), Lena Kollertz (2), Nico Recknagel (2), Anna Slagmann (1), Claudia Römer (2), Antje Fischer-Rosinsky (2), Martin Möckel (1)

1. Division of Emergency and Acute Medicine, Charité, Berlin, GERMANY

2. , none, Berlin, GERMANY

Keywords: delirium, emergency department, risk factors

Abstract :**Objectives/Background**

Delirium is a major reason for increased mortality, morbidity and prolonged hospitalization in elderly patients. Without a screening tool, delirium is diagnosed only in a minority of cases. As a result, there is need for a screening tool that is sensitive, very easy to learn, quickly to apply and has a high interrater reliability. We conducted the study "EPICS-10" (Emergency Processes in Clinical Structures) to validate two screening tools which could fulfil these requirements. In the same study we aimed to identify risk factors for developing a delirium in the emergency department (ED).

Patients and methods

The EPICS-10 study prospectively enrolled patients over 65 years of age in the Emergency Department. Both screening tools were applied and additionally medical and demographic data were extracted from medical records. In total 174 patients were analyzed. The diagnosis "delirium" was verified with the Confusion Assessment Method (CAM). We analyzed this data in order to identify risk factors for developing a delirium in the ED.

Results

Delirium prevalence measured by the CAM was 6.3%. It became apparent that age, prior known dementia, a prior known neurologic disease, a medical reason for the ED consultation, living in a nursing home, the need for a caregiver prior to the ED visit and psychotropic drugs as long-term medication were significantly associated with the presence of a delirium (table 1).

Conclusion/perspectives

Early prevention is one of the key measures to avoid the development of a delirium in ED patients. Demographic and medical data could aid to identify patients at risk in the ED. Future studies should verify the identified risk factors in larger studies and a risk score in order to operationalize the risk for the development of a delirium in the ED could be developed.

#18454 : Impact of anemia on prognosis in patients admitted in the emergency department with acute heart failure**Authors:**

Asma Khalfallah (1), Amel marsit (2), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Semir Noura (3)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA
2. Fattouma Bourguiba monastir , TUNISIA, ksouressef, TUNISIA
3. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: decompensation, blood , emergency departements

Abstract :

Introduction:

anemia occurs commonly in patients with acute heart failure (AHF) and it is a frequent comorbidity factor which is associated with poor outcomes. The current study is aimed to evaluate the prevalence and the impact of anemia on long and short-term prognosis in patients admitted in the emergency department with acute heart failure.

Methods:

We conducted a prospective cohort including patients aged ≥ 18 years who presented to the emergency department of Monastir with AHF from January 2019 to December 2018.

3 groups were defined: without anemia; patients with moderate anemia (hemoglobin (Hb) between 11-12,9 g/dl for men; Hb=11-11,9 g/dl for women) and patients with severe anemia (Hb $\leq 10,9$ g/dl). Patients were followed up for 30 days and 1 year.

Results:

579 patients were included in this study. The mean age was 68,5 years; the sex ratio was 0,9. Anemia was found in 66% of cases. Patients were divided into 2 groups:

with preserved left ventricular ejection fraction (LVEF) $>50\%$ and reduced LVEF $<50\%$.

In the group of patients with reduced LVEF, moderate anemia was significantly associated with high risk of death (OR=3.85) and re-hospitalization (OR=2.27) within 30 days. In the group of patients with reduced LVEF, stronger associations were found between severe anemia and risk of death 30 days and 1 year (OR=5.67; OR=2.02 respectively). The risk of re-hospitalization within 30 days was also significantly important (OR=4.40).

Conclusion:

Anemia is associated with a higher risk of mortality and rehospitalization in patients admitted in the emergency department with AHF. Our findings show that the impact of anemia on the prognosis of AHF depends on the LVEF: if it's preserved, severe anemia has the stronger impact in the prognosis; if it's reduced, even a moderate anemia is related to a worse outcome.

#18456 : Monocentric prospective study on the role of lung ultrasound in the follow up of the community acquired pneumonia in children**Authors:**

Maria Chiara Supino (1), Danilo Buonsenso (2), Simona Scateni (1), Barbara Scialanga (3), Maria Alessia Mesturino (1), Massimo Battaglia (1), Caterina Bock (4), Maria Luisa D'Andrea (4), Valentina Ferro (3), Antonino Reale (3), Anna Maria Musolino (1)

1. Pediatric Emergency Department, Bambino Gesù Children's Hospital, IRCCS, Rome, ITALY
2. Department of Pediatrics, Università Cattolica del Sacro Cuore, IRCCS, Rome, ITALY
3. Pediatric Emergency Department, Bambino Gesù Children's Hospital, IRCCS, Rome, ITALY
4. Department of Imaging, Bambino Gesù Children's Hospital, IRCCS, Rome, ITALY

Keywords: lung ultrasound, community acquired pneumonia, children

Abstract :**Introduction**

The community acquired pneumonia (CAP) is one of the main causes of morbidity and rarely of mortality in developed countries in the pediatric age. The CAP diagnosis is carried out on careful medical history and clinical examination. In the last few decades, lung ultrasound (LUS) took place as support to clinical examination in pediatric respiratory diseases as a valid tool for evaluating the lung parenchyma. Lung ultrasound (LUS) is in fact a rapid tool for evaluating the lung parenchyma without subjecting the child to ionizing radiations.

Aim and Methods

The aim of this study is evaluate with the LUS characteristics of pediatric CAP at baseline and 48 hours after beginning of antibiotic treatment. We have enrolled from July 2016 to July 2018 children between 1 and 17 years. All children underwent a first LUS on the first examination in the emergency department (ED) and a second LUS 48 hours after the beginning of antibiotic therapy. We defined as complicated CAP (c-CAP) those requiring admission in pediatric intensive care unit, invasive ventilation or continuous positive airway pressure, pleural drainage or admission longer than 10 days.

Results

We enrolled 101 children (median age 45 months (IQR 20-73), males 48%). At the first ED examination 16 (16,8%) children reported chest pain, cough 78 (81,3%) and fever 3 (2-5) days before the visit. 13 children (12.87%) had a c-CAP but there were no differences in oxygen saturation in ED in two groups. In c-CAP bilaterally consolidations were found more often than in CAP (33.3% vs 8.2%, $p=0.064$). At the first ultrasound c-CAP had a greater size of the parenchymal lesions (>5 cm in 63.6% vs 5.2%, $p=0.001$) and pleural effusion (63.6% vs 24.7%, $p=0.013$), complicated in most cases (80% vs 0%, $p=0.001$), than CAP. In children with CAP at baseline pleural effusion was present in 24.7% while in 13.6% after 48 hours ($p=0.050$), conversely in children with c-CAP at baseline pleural effusion was present in 63.6% while after 48 hours persisted in 69.2%.

Conclusions

Our study showed that LUS seems to be a good predictor of pediatric CAP response to antibiotic treatment. Multicentric studies are needed to confirm these data.

Trial Registration / Funding Information (only) :

This study did not receive any specific funding. Ethical Committee approved the study (trial protocol 1564_2018)

#18457 : Relationships between 30-day emergency department revisits and rates of hospitalisations at 1 year**Authors:**

Sylvie Cossette (1), Tanya Mailhot (1), Patrick Lavoie (1), Marc-André Maheu-Cadotte (2), Guillaume Fontaine (1), Alexis Cournoyer (3), Alain Vadeboncoeur (1)

1. Montreal Heart Institute Research Center, Université de Montréal, Montréal, CANADA
2. Montreal Heart Institute Research Center, Centre hospitalier de l'Université de Montréal, Université de Montréal, Montréal, CANADA
3. Montreal Heart Institute Research Center, Hôpital du Sacré-Coeur de Montréal, Hôpital Maisonneuve-Rosemont, Université de Montréal, Montréal, CANADA

Keywords: emergency department revisits, rates of hospitalisation, sex differences

Abstract :

Background: Among a cardiac emergency department (ED) the reasons of ED revisits that predict future hospitalisation are not well known which hampers optimal care for this patient population. More importantly, the predictive value of ED revisits for hospitalisation at one year might differ by sex, but this has not been explored thereby limiting a sex-based tailored approach.

Goal : Describe the relationship between the reasons for ED revisits at 30 days and 1-year hospitalisation (as an indicator of morbidity). Examine the difference by sex for this relationship.

Methods: A secondary analysis of a clinical trial testing an ED-to-home transition intervention was performed. A convenience sample of patients discharged home from the ED and considered at risk for a revisit (e.g. > 1 previous ED visit in the last year and the use of ³ 6 different medications) were included. The rates of hospitalisation at one year (primary endpoint) was contrasted using chi-squared analysis according to 1) no ED revisit versus ED revisits during the first 30 days after a baseline visit and 2) no ED revisits versus a revisit for a similar problem than the one at the baseline visit, and a revisit for a non-related or less acute problem than the baseline visit. Sex differences in hospitalisations were explored using logistic regression testing the interactions between sex and 30-day revisits on rates of hospitalisation at 1 year.

Results: A total of 265 patients (56.2% men) were included. At 30 days, 50 had at least one revisit, among which 29 (9 women and 20 men) revisited the ED for a similar health problem than their baseline ED visit and 21 (4 women and 17 men) for a different health problem. Revisiting the ED at 30 days following a baseline ED visit, regardless of the reason, almost doubled the rate of hospitalisation at one year (30.0% vs. 16.7%, $p = .032$). Rates of hospitalisation were not significantly different at one year for patients who revisited the ED for a similar problem than for patients who revisited for a different problem (27.6% vs. 33.3%, $p = .089$). No significant interactions between sex and 30-day revisits were found on rates of hospitalisation.

Discussion and Conclusions: ED revisits at 30 days, whether that be for a similar reason than the baseline ED visit or for a different reason, were linked to hospitalisation at one year in a cardiac ED. Revisits at 30-day merit consideration as an indicator of morbidity in cardiac populations.

Trial Registration / Funding Information (only) :

ISRCTN88422298 Funding : Fonds de recherche en santé Québec; Fondation de l'Institut de cardiologie de Montréal

#18464 : Acute hemodynamic effects of digoxin in patients with congestive heart failure**Authors:**

Asma Khalfallah (1), Amel marsit (2), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Nouira (3)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA
2. Fattouma Bourguiba monastir , TUNISIA, ksouressef, TUNISIA
3. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: heart failure, digoxin, monastir

Abstract :**Introduction:**

Digoxin was the cornerstone of heart failure therapy for decades due to its positive inotropic and neuro-hormonal modulation properties until the change of paradigm in heart failure pathophysiology. Our study evaluates outcomes stratified by heart function status in patients with heart failure treated with digoxin.

Materials and methods:

This is a prospective randomized , double blind ,placebo controlled parallel group multicenter clinical trial . We randomly assigned patients with heart failure to treatment with digoxin or placebo (median dose of digoxin is 0.25 mg per day). The effects of each one on hemodynamic parameters : systolic time interval , cardiac output , left ventricular ejection fraction and BNP level were compared during a period of 48 hours , double –blind trial ,performed at the emergency unit of Fattouma Bourguiba hospital in Monastir over a period of four years(2016-2017-2018-2019).We also aimed to compare the risk of mortality and hospital stay time with digoxin use versus no digoxin in patients with heart failure. The diagnosis of heart failure was based on current or previous symptoms such as dyspnea, radiologic or echo graphic evidence of pulmonary congestion ,BNP level > 350 pg / ml or NT proBNP > 1400 pg/ml. Participants were excluded if they already received digoxin as a background treatment. Those who had a pacemaker or suffered from severe renal impairment (creatinine clearance of less than 30 ml/min) were also excluded.

Results :

We have been collecting during 2016,2017,2018 and 2019 , cases of patients with heart failure and only 438 of them have met eligibility criteria : 104 of them have received digoxin while 229 of them did not.

In our study , both groups had comparable demographic characteristics .There was no significant difference between the two groups ,in terms of age , sex or NYHA functional classification .

The increase of cardiac output within two days : 11.35 % in the group treated with digoxin ,7.75 % in the other group (without significant difference).

The increase of the systolic ejection fraction : 7.39 % in the group treated with digoxin ,2 % in the other group. The difference between both results appear to be significant

Systolic time intervals: pre-ejection period decreased by 12.67 % in the group treated with digoxin ,1.01 % in the other group (the difference was highly significant)

($p= 0.02$). Left ventricle ejection time increased by 0.82 % in the digoxin group , 0.2 % in the other group . The difference was estimated to amount to 0.037.

ED length of stay in the digoxin group : 6.67 days , 10 days in the placebo group . The difference between the two was significantly high ($p = 0.019$). Death rate in the hospital : 1 % in the digoxin group and 0 % in the other group . The difference was not significant ($p=0.78$).

Conclusion : In patients with acute heart failure , short course digoxin is associated with an improvement of heart function parameters and decrease of hospital length of stay.

#18465 : Predictors of Coronary Artery Disease in Patients with Acute Coronary Syndromes (ACS) with Left bundle Branch Blocks(LBBB)**Authors:**

Asma Khalfallah (1), marwen kacemi (1), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Nouira (2)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA

2. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: coronaries diseases, left bundle branch blocks,Aute coronary syndromes

Abstract :**OBJECTIVE:**

To determine predictors of coronary artery disease in patients with acute coronary syndrome with left bundle branch block.

METHOD:

This is a retrospective study conducted over a period of 3 years ranging from 2/1/2016 to 31/12/2018 in 78 patients with chest pain with a left branch block appearance. ECG and have all benefited from coronary angiography.

Results:

We included 78 patients in the study. The average age is 64.9 years.

42 patients (53.8%) had coronary involvement, 63.5% had monotruncular lesions, 23% had bi-truncular lesions, and 7.6% had truncular lesions.

Diabetes is more common in patients with LBBB with coronary involvement. (68% of diabetics with coronary lesions vs 46% of diabetics without coronary involvement).

Smoking is more common in patients with coronary LBBB (69.2% of coronary smoking vs. 36.3% of non-coronary smoking).

The ejection fraction is more impaired in patients with LBBB with coronary artery disease (mean LVEF = 46% in patients with coronary LBBB Vs mean LVEF mean = 52% in non-coronary patients).

66.6% of patients with LBBB with coronary artery disease have arterial hypertension compared with 63.8% of non-coronary arterial hypertension.

CONCLUSION:

Diabetes, smoking and impaired ejection fraction are predictive factors for coronary artery disease in patients with acute coronary syndrome with left bundle branch block

#18466 : Evaluation of tissue doppler of the mitral annulus in the Diagnosis of Acute Heart Failure (AHF) in Emergency Department Patients admitted for Acute Dyspnea**Authors:**

Asma Khalfallah (1), Asma Khalfallah (1), Amel marsit (2), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Noura (3)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA
2. Fattouma Bourguiba monastir , TUNISIA, ksouressef, TUNISIA
3. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: dyspnea, ultrasound, heart failure

Abstract :**Introduction:**

An AHF is a common and serious pathology, the diagnosis of AHF is difficult during an acute dyspnea in emergencies. The E/e' has been associated with the diagnosis of AHF in these patients: association still controversial. The aim of this study is to evaluate the performance of tissue doppler of the mitral annulus in the diagnosis of AHF in patients consulting in the emergency department for acute dyspnea.

Methods :

Prospective study conducted in the emergency department of Monastir from 2013 to 2018. All patients over the age of 18 who have consulted for acute dyspnea have been included. The diagnosis of AHF: expert opinion based (clinical radiology and cardiac biomarker). Cardiac ultrasound was performed at admission. The E wave and the lateral e' wave of the mitral annulus were measured by tissue Doppler. A threshold > 15 is synonymous with AHF.

The diagnostic performance of the E / e' was evaluated by calculating the area under the ROC curve.

Results:

Cardiac ultrasonography was performed in 441 patients with acute dyspnea.

The average age was 66 ± 13 years with a small male predominance Sex ratio 1.4 (H / F).

And The diagnosis of AHF was retained in 62% of patients.

Conclusion :

The E / e' appears to be average in the diagnosis of AHF in patients with acute dyspnea.

The E / e' alone is not enough, it must be associated with the pulmonary ultrasound.

#18467 : PERFORMANCE OF THE COLLAPSIBILITY INDEX IN THE DIAGNOSIS OF HEART FAILURE IN COPD**Authors:**

sarra Sassi (1), rihab Dimassi (1), khouloud Mefteh (1), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Noura (2)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA
2. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: COPD,dyspnea,ultrasound,heart failure

Abstract :**Introduction:**

Acute heart failure is common and underestimated in COPD patients consulting emergency departments for acute dyspnea.

Aim of the study: To evaluate the ability of the Collapsability Index (CI) to identify heart failure in COPD patients presenting to the emergency department for acute dyspnea.

Material and methods :

A prospective study conducted over a period of 4 years from 2014 to 2018, including the COPD patients consulting the emergency department of Fattouma Bourguiba Monastir for acute non-traumatic dyspnea.

Mechanically ventilated patients , recent abdominal surgery or portal hypertension were excluded.

An echocardiogram of the inferior vena cava (IVC) was performed on admission in all patients and the IC is calculated by the following formula:
 $(IVC_{max} - IVC_{min}) / IVC_{max}$;

IVC_{max}: maximum diameter of the IVC at rest.

IVC_{min}: minimum diameter of the IVC at rest

Results:

We included 188 patients; the average age is 68.4 +/- 10.38 years.

The sex ratio (H / F) is 2.41 .39, 4% of patients are hypertensive; 35.1% are diabetic and 35% are cardiac deficient.

the area under the ROC curve is 0.38, the specificity of the collapsibility index is low for the diagnosis of heart failure for COPD patients admitted to the emergency department for dyspnea

Conclusion:

CI is not a reliable way to identify heart failure in COPD patients who are admitted to the emergency department for acute dyspnea.

#18468 : Management of post-traumatic pain after emergencies: Comparison of three strategies: Paracetamol alone, Non-steroidal anti-inflammatory drug (NSAID) alone and Paracetamol + NSAID combination**Authors:**

Asma Khalfallah (1), Asma Khalfallah (1), Roua chouihi (1), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Nourira (2)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA
2. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: pain, NSAID,traumatologie

Abstract :**Introduction:**

Acute musculoskeletal pain is a frequent reason for consultation. The management of pain is an essential element of treatment. Nearly 100 million prescriptions / year: paracetamol, NSAID is the association. Paracetamol> NSAIDs (efficacy, cost, tolerance) but lack of solid evidence. No evidence on the superiority of the association.

The Aim :

To compare the efficacy and safety of paracetamol alone versus NSAIDs alone or the combination of both in the treatment of post-traumatic musculoskeletal pain.

Methods :

Prospective, randomized and open

Inclusion cells:

- . age \geq 18 years
- . pain (mild to moderate) at the digital visual scale (EVN \leq 4) at the emergency exit.

The patients included are divided into three groups:

- _ Paracetamol alone
- _ NSAIDs alone
- _ Association of the two

Recall at J7 (EVN, reconsultation, the use of other analgesics, adverse effects)

Results:

The EVA at J7 is comparable between the 3 groups, likewise for the satisfaction of patients adhering

Conclusion:

Paracetamol is not inferior to NSAIDs or the combination of both in the treatment of post-traumatic pain.

It is also the treatment that is associated with the best tolerance.

#18469 : Novel wearable cooling device for early initiation of targeted temperature management in the emergency department: a retrospective cohort study**Authors:**

Leong Gen Yap (1), Nur Shahidah (2), Sohil Pothiwala (2), Kenneth B.K. Tan (2), Aaron S.L. Wong (3), Duu Wen Sewa (4), Eric T.S. Lim (3), Chee Tang Chin (3), Marcus E.H. Ong (2)

1. Yong Loo Lin School of Medicine, National University of Singapore, Singapore, SINGAPORE
2. Department of Emergency Medicine, Singapore General Hospital, Singapore, SINGAPORE
3. Department of Cardiology, National Heart Centre, Singapore, SINGAPORE
4. Department of Respiratory and Critical Care Medicine, Singapore General Hospital, Singapore, SINGAPORE

Keywords: targeted temperature management, post-resuscitation care, survival, cardiac arrest

Abstract :

Aim: Targeted temperature management (TTM) is an important component of post-cardiac arrest care. Although the optimum cooling method is not known, studies have suggested that prompt and quick cooling is associated with better outcomes. The aim of this study was to evaluate the cooling efficacy of a protocol including a novel cooling device in the Emergency Department (ED).

Methods: This was a single-center pre-post cohort study of post-cardiac arrest patients with return of spontaneous circulation (ROSC), for whom TTM was initiated at a tertiary hospital between April 2010 and December 2017. A surface cooling device (CarbonCool, Global Healthcare Pte Ltd), which uses a graphite cooling material in an insulating suit, was introduced in July 2015. Control patients enrolled before the intervention period received icepacks in the ED and cold saline. For both periods, the target temperature was 34.0°C, with TTM continued in the ICUs. The primary outcome was time from ROSC to target temperature (TT).

Results: Of 124 patients included, 40 were in the intervention period and 84 in the control period. Time from ROSC to TT was significantly lower in the intervention period at 119 (Interquartile range (IQR): 65-250) minutes versus 482 (IQR: 356-596) minutes ($p < 0.001$). There was no statistical difference in survival to discharge (30.0% versus 32.1%, $p = 0.839$) and Glasgow-Pittsburg Outcome scores (1 or 2 in 17.5% versus 21.4%, $p = 0.811$). The intervention period also had a faster cooling rate (initiation of TTM to TT of 73 (IQR: 40-150) versus 142 (IQR: 75-262) minutes, $p = 0.014$). There were no reported serious adverse events associated with the device.

Conclusion: Use of a novel cooling device in the ED resulted in a shorter time to target temperature. As it is reusable and does not require a power source, it has potential to be an affordable solution for pre-hospital and transport cooling.

Trial Registration / Funding Information (only) :

Funding information: This study was sponsored by Global Healthcare Pte Ltd. The study sponsor had no involvement in the study design, data collection, data analysis and interpretation, and writing of the abstract. Trial registration: Not applicable (retrospective cohort study)

#18470 : Abdominal pain in emergency department. Observational trial about positive predictive value of enterosonography.

Authors:

Paola Dell'Aquila (1), Angela Minuti (2), Michela Nardacci (3), Mariangela Portaluri (3), Pietro Pozzessere (1), Vito Procacci (1)

1. Emergency Department, A.O. Policlinico Bari, Bari, ITALY
2. Emergency Department, Hospital "Mons. A. R. Dimiccoli" Barletta, Barletta, ITALY
3. Emergency Department, A.O. Policlinico Bari, Bari, ITALY

Keywords: abdominal pain, emergency department, x-ray abdomen, abdominal ultrasound, enterosonography.

Abstract :Background:

Acute abdominal pain is one of the most common causes of referral to any emergency department (12% of total entry); the origin is a disease of the intestine in the 50% of cases.

Current guidelines recommend garnering a medical history of the patient, collecting details about the onset, duration, character, location and symptoms associated with the malady. Furthermore laboratory tests and abdominal x-ray are required in order to define three categories of abdominal pain: surgical, non surgical and acute one without any findings. An abdominal CT scan is required for the first two groups.

The guidelines are cautious with regards to severe cases, but they are unhelpful to non-critical patients who are not indicated as undergoing a CT scan, causing a lack of diagnoses. Ultrasound, represents the first choice of detection for parenchymatous organs and the peritoneal cavity. This method can disclose sensitive and specific information about inflammation, occlusion, perforation and peritoneal effusion.

Aim of the study:

The aim of the study is to make a comparison between first level imaging, intestinal ultrasound and abdominal x-ray, and abdomen CT scan, which is currently the gold standard. We would evaluate the diagnostic power of ultrasonography in order to avoid abdomen x-ray execution, with a view to reduce radiation exposure.

Materials & Methods:

In this prospective observational trial we enrolled a cohort of 100 patients in the emergency room of our hospital for acute abdominal pain from February to April 2018. An investigation was carried out along with clinical assessment, medical history and laboratory tests in patients who met Rome III criteria. Subsequently subjects were indicated to receive abdominal x-ray, enterosonography and abdominal CT scan.

Results:

Matching results from CT scan and ones from abdominal x-ray is it possible to observe that sensitivity of the x-ray is about 49.4 % (IC 95% = 38,2% - 60,6%), specificity is around 70.6% (IC 95% = 44,0% - 89,7%), positive prediction value is 75.5% % (IC 95% = 63,0% - 84,7%) and negative prediction value is 22.2% (IC 95% = 12,0% - 35,6%). Of the 100 patients undergoing x-ray, 83 resulted positive and 17 negative for intestinal diseases. From the first group only 41 had diagnostic imaging with CT scan.

On the contrary, matching results from CT scan and enterosonography shows that ultrasound sensitivity is 100.0% (IC 97.5% = 95.6% - 100.0%), spcificity is 100.0% (IC 97.5% = 80.5% - 100.0%), positive prediction value is 100.0% (IC 97.5% = 95.6% - 100.0%) and negative prediction value is 100.0% (IC 97.5% = 80.5% - 100.0%). All positive results from US were conformed to CT scan.

Conclusion:

Abdominal x-ray should be ruled out from guidelines and replaced by an economic, non invasive and radiation-free method like enterosonography. The confidence of this itinerary needs to be strengthened with regards to the appropriateness and rational use of resources, in order to create a diagnostic-therapeutic pathway using a complementary approach with ultrasound and enterosonography.

#18471 : Effectiveness of a community based Out-of-hospital cardiac arrest interventional bundle: results of a pilot study**Authors:**

Pamela Jia Min Tay (1), Pin Pin Pek (2), Qiao Fan (1), Yih Yng Ng (3), Benjamin Sieu-Hon Leong (4), Han Nee Gan (5), Desmond Renhao Mao (6), Michael Yih Chong Chia (3), Si Oon Chia (7), Nausheen Doctor (8), Lai Peng Tham (9), Marcus Eng Hock Ong (10)

1. , Duke-NUS Medical School, Singapore, SINGAPORE
2. Emergency Medicine, Singapore General Hospital, Singapore, SINGAPORE
3. Emergency Department, Tan Tock Seng Hospital, Singapore, SINGAPORE
4. Emergency Medicine Department, National University Hospital, Singapore, SINGAPORE
5. Accident & Emergency, Changi General Hospital, Singapore, SINGAPORE
6. Department of Acute and Emergency Care, Khoo Teck Puat Hospital, Singapore, SINGAPORE
7. Emergency Medicine Department, Ng Teng Fong General Hospital, Singapore, SINGAPORE
8. Emergency Department, Sengkang General Hospital, Singapore, SINGAPORE
9. Children's Emergency, KK Women's and Children's Hospital, Singapore, SINGAPORE
10. Health Services and Systems Research, Duke-NUS Medical School, Singapore, SINGAPORE

Keywords: cardiac arrest, bystander cardiopulmonary resuscitation, cardiac outcomes

Abstract :

AIM: This study aims to assess the effectiveness of a community based Out-of-hospital cardiac arrest (OHCA) interventional bundle in improving OHCA survival.

BACKGROUND: Out-of-hospital cardiac arrests (OHCAs) are a leading cause of death globally, and a major public health issue. Yearly, an estimated 700,000 people across Europe and North America suffer from OHCAs, of whom only approximately 10% survive. Recent data shows an increase in OHCA cases in Singapore from 800 per year (2001 – 2004) to 1500 per year (2010 – 2012). Furthermore, 70% of OHCA cases in Singapore have been found to occur in residential areas, and are associated with poorer outcomes. A core component to the interventional bundle is the Save-a-life (SAL) initiative. This initiative involves training residents of a selected geographical region in cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) use, along with concurrent AED installation at public-access areas of public housing blocks in these same regions. This is further supplemented by a Dispatcher-Assisted CPR (DA-CPR) program and MyResponder (mobile phone application). We hypothesized that the interventional bundle will significantly increase OHCA survival.

METHODS: This is pilot data from initial implementation of a stepped-wedge, before-after, real-world interventional bundle in six selected regions. Data was obtained from Singapore's national OHCA Registry. We included all adult patients who experienced OHCA in Singapore from 2011 to 2016 within study regions, excluding EMS-witnessed cases and cases due to trauma/drowning/electrocution. Cases occurring before and after intervention were allocated as Control and Intervention groups respectively. Survival (survival to discharge/ 30-day survival post-cardiac arrest) was assessed via multivariable logistic regression.

RESULTS: 1241 patients were included for analysis (Intervention: 361; Control: 880). Intervention group had a higher mean age (70 vs 67 years), survival (3.3 % [12/361] vs. 2.2% [19/880]), pre-hospital return of spontaneous circulation (ROSC) (9.1% [33/361] vs 5.1% [45/880]), bystander CPR (63.7% [230/361] vs 44.8% [394/880]) and bystander AED application (2.8% [10/361] vs 1.1% [10/880]). After adjusting for age, gender, race and significant covariates, intervention was associated with increased odds ratio (OR) for survival (OR 2.39; 95% CI: 1.02-5.62), pre-hospital ROSC (OR 1.94, 95% CI: 1.15-3.25) and bystander CPR (OR 2.29 95% CI: 1.77-2.96) compared to control group. Subgroup analysis showed that the intervention was associated with a significant increase in bystander CPR for OHCAs occurring in residential areas (OR 2.40, 95% CI 1.83 – 3.14), but not for OHCAs occurring in non-residential areas (OR 1.46, 95% CI 0.62 – 3.43).

DISCUSSION & CONCLUSION: Previous studies on improving OHCA survival have often focused solely on community CPR training programs and showed variable results. We demonstrate the effectiveness of this community based interventional bundle in improving OHCA survival. These findings support the feasibility and effectiveness of the interventional bundle, which is being scaled up as a national program, with further evaluation planned.

Trial Registration / Funding Information (only) :

Non-clinical work, trial registration not applicable. Funding source: This study was supported by grants from National Medical Research Council, Clinician Scientist Awards, Singapore (NMRC/CSA/024/2010 and NMRC/CSA/0049/2013), Ministry of Health, Health Services Research Grant, Singapore (HSRG/0021/2012) and Duke-NUS Medical Student Research Fellowship Grant (AM-ETHOS01/FY2018/31-A31)

#18472 : Stepped Care Intervention for Mental Health Conditions After Traumatic Injury : A Randomised controlled trial of active v supportive care**Authors:**

Anthony Joseph (1)

1. Trauma Service, Royal North Shore Hospital, Sydney, AUSTRALIA

Keywords: Trauma, Mental health, intervention

Abstract :**Introduction:**

One of the leading causes of posttraumatic stress disorder (PTSD) globally is traumatic injury, which contributes to approximately 12% of the world's burden of disease. Traumatic injury also contributes to other psychiatric conditions. A major reason patients suffer ongoing disorders is their reluctance to seek treatment after injury. A novel approach being posited in recent years is stepped care that (a) screens patients in hospital and treats immediate needs, (b) monitors patients' mental health following discharge, and (c) treats ongoing needs as they arise. This study will employ a controlled trial design, and will provide novel insights into how patients' mental health can be enhanced following traumatic injury

Methods:

A 2 group randomized controlled trial was conducted in which trauma patients were randomized to enhanced monitoring and referral or standard care. Patients in Enhanced Monitoring were assessed in hospital, and again at 1, 3, and 9 months, and referred for specialist treatment if needed. Patients in Normal Care were assessed in hospital and at 9 months.

All patients received a psychological assessment whilst in hospital. These assessments screened patients for problems with PTSD, depression, anxiety, pain, and drugs/alcohol. If any of these problems were flagged, the patients were arranged for specific referrals for local specialist services.

Results to date: A total of (N = 159) patients admitted to Royal North Shore Hospital with a serious to critical injury were consented and enrolled into the study since 9th January 2017. There were (N = 79) patients were randomly assigned to the Stepped Care Intervention Arm, and (N = 80) were randomly assigned to the Treatment as Usual Arm.

A total of (N = 52) patients randomly assigned to the Stepped Care Intervention arm completed the *1 month follow up assessment* (Screening for PTSD, Mood, Pain, Drug and Alcohol).

A total of (N = 22) patients randomly assigned to the Stepped Care Intervention arm completed the *3 month follow up assessment* (Screening for PTSD, Mood, Pain, Drug and Alcohol).

A total of (N = 59) patients completed the *9 Month Follow Up Assessment* (PTSD, Anxiety, Depression, Pain, Disability).

Conclusion: Approximately 10-20% of patients display either PTSD, Depression, or Anxiety during hospitalisation. Approximately 30% of patients contacted 1 month later report symptoms of either PTSD, Depression, Anxiety or Pain, and almost half report similar symptoms at 3 months. *The majority of patients flagged are reluctant to access referred psychological support*

Trial Registration / Funding Information (only) :

Study Title: Stepped Care Intervention for Mental Health Conditions after Traumatic Injury HREC Reference: HREC/15/HAWKE/163 NSLHD Reference: RESP/15/111

#18475 : P25/30 somatosensory evoked potential is superior to N20 in predicting neurological recovery after cardiac arrest: A prospective, observational study**Authors:**

Sang Hoon Oh (1), Joo Suk Oh (1), Hyunho Jung (1), Jungtaek Park (1), Ji Hoon Kim (1), Jeong Ho Park (1), Jung Hee Wee (1), Seung Pill Choi (1), Kyu Nam Park (1)

1. , The Catholic University of Korea, Seoul, KOREA

Keywords: Cardiac arrest, somatosensory evoked potential, prognosis

Abstract :

Background

The absence of N20 somatosensory evoked potential (SEP) is regarded as a predictor of poor outcome after cardiac arrest with very high specificity. However, its sensitivity in predicting the poor outcome is unsatisfactory. The P25/30 SEP is a positive deflection following N20 with a latency of 25-35 msec. According to our prior study, N20 without following P25/30 is related to poor outcome, while N20 followed by P25/30 is highly related to good outcome. In this study, we evaluated whether the amplitude of P25/30 predicts neurologic recovery after cardiac arrest more accurately than the amplitude of N20.

Methods

This is a prospective multicenter observational study. Patients were consecutively enrolled in four university-affiliated teaching hospitals. SEPs of comatose survivors after out-of-hospital cardiac arrest treated by 33°C-targeted temperature management were recorded 72 hours after return of spontaneous circulation. The cutoff value of P25/30 and N20 amplitude showing 100% specificity in predicting poor neurological recovery was determined by receiver operating characteristic (ROC) analysis. We defined poor neurological recovery as the worst Cerebral Performance Category score higher than three during the admission period. We performed penalized maximum likelihood estimation in logistic regression analysis. Thereafter, we compared the area under curve (AUC) of the P25/30-based model predicting poor outcome to AUC of the N20-based model. According to the previous study, a total of 86 subjects would be required to detect a 0.05 difference in AUC with a power of 80% and a type I error of 5%. Values of p less than 0.05 were considered statistically significant.

Results

Out of a total of 87 patients included in the study, 43 patients showed good neurological recovery, while 44 patients showed poor neurological recovery. The cutoff values of SEP amplitudes showing 100% specificity in predicting poor neurological recovery were 0.63 μ V (P25/30) and 0 μ V (N20). Sensitivity in predicting poor neurological recovery of P25/30 was 0.86 (95% confidence interval 0.73 - 0.95), while N20 was 0.7 (95% confidence interval 0.55 - 0.83). In addition to N20 or P25/30, cardiac arrest rhythm and anoxic time were selected as independent variables for the multivariable logistic regression models. The AUC of the P25/30-based model was 0.958 (95% confidence interval 0.92 - 1), while the AUC of the N20-based model was 0.911 (95% confidence interval 0.85 - 0.98). AUC comparison between the N20-based model and the P25/30-based model showed a statistically significant difference ($p = 0.02$).

Conclusions

P25/30 showed superior value in predicting poor neurologic recovery after cardiac arrest than the N20. P25/30 showed higher sensitivity in predicting poor neurologic recovery than the N20, which implies potential as a predictor of good neurologic recovery.

Trial Registration / Funding Information (only) :

The protocol was registered at www.ClinicalTrials.gov ID(unique identifier: NCT03175965). This work was supported by The Catholic Medical Center Research Foundation made in the program year of 2017. The funders had no role in study design, data collection and analysis.

#18476 : Gas6 Attenuates Sepsis-induced Tight Junction Injury and Vascular Endothelial Hyperpermeability via Axl/NF- κ B Signaling Pathway**Authors:**

Jingjing Ni (1), LU Zhong-qiu (2)

1. , The First Affiliated Hospital of Wenzhou Medical University, Wenzhou, CHINA

2. Emergency medicine, The First Affiliated Hospital of Wenzhou Medical University , Wenzhou, CHINA

Abstract :**Background:**

Vascular endothelial functional dysregulation and barrier disruption are involved in the initiation and development of sepsis. Growth arrest-specific protein 6 (Gas6), one of the endogenous ligands of TAM receptors (Tyro3, Axl, and Mertk), is confirmed to have beneficial functions in hemostasis, inflammation, and cancer growth. Here, it remains to be determined the protective effects of Gas6 on multi-organ dysfunction syndrome (MODS) in sepsis and the underlying mechanisms. In our study, we first reported that the protective role of Gas6 on sepsis-induced MODS was related to the vascular endothelial permeability.

Methods:

Cecal ligation and puncture as animal model of sepsis and primary Mouse aortic endothelial cells (MAECs) and Human umbilical vein endothelial cells (HUVECs) were used in all *in vitro* experiments. Histological changes were assessed in lung and kidney. Evans blue dye extravasation assay and Transwell permeability assay were determined in vascular hyperpermeability. The protein levels of ZO-1, occludin and claudin5 measured in MAECs. The immunofluorescence shows that the location and distribution of ZO-1, occludin and claudin5. TAM receptors expression was determined by western blotting, and NF- κ B activity was measured by western blotting and immunofluorescence.

Data are expressed as the mean \pm SD. All data analyses were carried out using GraphPad Prism 7 (GraphPad Software, La Jolla, CA, USA). Statistical significance between different groups was assessed by one-way ANOVA followed by Dunnett's multiple comparison tests. Comparisons between two groups were made using Student's t-test. $P < 0.05$ was considered statistically significant.

Results:

First, Gas6 decreased Vascular hyperpermeability induced by CLP *in vivo* and LPS *in vitro*. Then results showed that pretreatment with Gas6 up-regulated occludin and ZO-1 protein levels after LPS treatment in MAECs, while the protein claudin-5 was increased both in LPS stimulation and Gas6 treatment. Immunofluorescence shows that the breakdown of ZO-1, occludin and claudin5 were markedly restored after Gas6 treatment. Together, Gas6 was shown to decrease vascular endothelial permeability by up-regulating and rearrangement of TJs. In the present study, it is shown that all three TAM receptors were expressed in the MAECs, but only Axl was activated following Gas6 treatment. Furthermore, data demonstrated that Gas6 substantially suppressed NF- κ B p65 activation. To further confirm that Gas6 protects LPS-induced endothelial barrier disruption through Axl/NF- κ B signaling pathway *in vitro*, MAECs and HUVECs were transfected with siAxl or siNC. It is found that tight junction injury protected by Gas6 were attenuated following transfection with siAxl, and the effect of Gas6 on inhibition of NF- κ B activation was decreased.

Discussion and Conclusions:

The hyperpermeability of the endothelial barrier is identified as the key factor in progression to MODS during sepsis. Previous studies demonstrated that Gas6 exerted protective effects in sepsis-induced acute kidney injury and acute lung injury in mice. However, how Gas6 alleviates MODS remains unclear. In conclusion, this study demonstrated that Gas6 ameliorated sepsis-induced MODS. Furthermore, the promising protective effect of Gas6 is mediated vascular endothelial hyperpermeability through reinforcing tight junction via the Axl/NF- κ B pathway. Therefore, Gas6 may be an interesting therapeutic strategy for recovery from sepsis and a suitable therapeutic option for sepsis.

Trial Registration / Funding Information (only) :

This work was supported by the Medical Health Science and Technology Major Project of Zhejiang Provincial Health Commission (WKJ-ZJ-1724) and National Natural Science Foundation (NO. 81571937, NO. 81772112).

#18477 : Mdivi-1 protects CD4⁺T cells against apoptosis via balancing mitochondrial fusion-fission and preventing the induction of endoplasmic reticulum stress in sepsis

Authors:

You Wu (1), LU Zhong-qiu (2)

1. Emergency medicine, The first hospital affiliated to wenzhou medical university, Wenzhou, CHINA
2. Emergency medicine, The First Affiliated Hospital of Wenzhou Medical University, Wenzhou, CHINA

Abstract :**Background:**

Apoptosis of CD4⁺T cells plays a central role in the progression of sepsis because it is associated with subsequent immunosuppression and the lack of specific treatment. Thus, developing therapeutic strategies to attenuate apoptosis of CD4⁺T cells in sepsis is critical. Several studies have demonstrated that Mdivi-1, which is a selective inhibitor of the mitochondrial fission protein dynamin-related protein 1 (Drp1), attenuates apoptosis of myocardial cells and neurons during various pathologic states. The present study revealed the impact of Mdivi-1 on apoptosis of CD4⁺T cells in sepsis and the potential underlying mechanisms. We hypothesized that Mdivi-1 ameliorated apoptosis in CD4⁺T cells by re-establishing mitochondrial fusion-fission balance and preventing the induction of endoplasmic reticulum stress in experimental sepsis.

Methods:

It is an original study. We used lipopolysaccharide (LPS) stimulation and cecal ligation and puncture (CLP) surgery as sepsis models *in vitro* and *in vivo*, respectively. Apoptosis and cell viability of CD4⁺T cells were assessed by TUNEL assay and CCK8 assay. Protein levels were measured by western blotting. And mitochondrial morphology was observed by electron microscope.

The data were represented as the mean \pm standard deviation (SD) using PSS (version 20.0). A one-way ANOVA was used to analyze significant differences between three or more groups and an unpaired Student's t-test was used to analyze significant differences between two groups and significance was defined as $P < 0.05$. GraphPad Prism 6 (San Diego, CA, USA) were used for the figure design.

Results:

Firstly, Mdivi-1 increased the cell viability of CD4⁺T cells and attenuated apoptosis of CD4⁺T cells both *in vitro* and *in vivo*. Secondly, the potential mechanism underlying the protective effect of Mdivi-1 involved Mdivi-1 re-establishing mitochondrial fusion-fission balance in sepsis, as reflected by the expression of the mitochondrial fusion proteins MFN2 and OPA1, Drp1 translocation, and mitochondrial morphology, as observed by electron microscopy. Moreover, Mdivi-1 treatment reduced reactive oxygen species (ROS) production and prevented the induction of endoplasmic reticulum stress (ERS) and associated apoptosis. After using tunicamycin to activate ER stress, the protective effect of Mdivi-1 on CD4⁺T cells was reversed. Together, Mdivi-1 attenuated apoptosis of CD4⁺T cells is probably through re-establishing mitochondrial fusion-fission balance and prevented the induction of ER stress.

Discussion and Conclusion:

Recent studies and clinical findings have demonstrated that apoptosis of T lymphocytes has a considerable involvement in immunosuppression and is critically related to the outcome of sepsis. Here, our study showed that apoptosis in CD4⁺T cells was increased after LPS administration and CLP surgery.

Consequently, it is urgent to develop novel therapeutic strategies to attenuate apoptosis in CD4⁺ T cells during sepsis to affect the outcome. Our results demonstrated that Mdivi-1 protected against apoptosis of CD4⁺T cells and balancing mitochondrial fusion-fission and preventing the induction of endoplasmic reticulum stress in experimental sepsis are probable mechanisms involved in it. Mdivi-1 is a probable novel therapeutic strategy that targeted apoptosis in CD4⁺ T cells to affect the outcome of septic patients.

Trial Registration / Funding Information (only) :

This work was supported, in part, by grants from the National Natural Science Foundation (grant number 81571937 and 81772112).

#18479 : "Ketting" the kids to sleep; a quality improvement project introducing paediatric procedural sedation to a mixed emergency department.

Authors:

Gerard Markey (1), Tadgh Moriarty (2)

1. Emergency Medicine Consultant, University Hospital Waterford, Waterford, IRELAND
2. Emergency, UHW, Waterford, IRELAND

Keywords: Paediatrics, paediatric emergency medicine, procedural sedation

Abstract :**INTRODUCTION**

Ketamine hails from a stormy past, falling in and out of favour among our anaesthetic colleagues. A review of paediatric procedural sedations (PPS) by Bhatt et al of 5 sites in Canada showed that Ketamine as a single agent had the lowest rate of serious adverse events. University Hospital Waterford, a mixed emergency department (ED) undertook a quality improvement project in 2018/2019 in order to implement a paediatric ketamine sedation guideline. Thirty three patients successfully underwent sedation throughout the year with no major adverse events.

AIMS

The primary objective of this protocol was to enhance patient (and parent) experience within the ED. Secondary aims were reduced quaternary hospital referrals and less in-patient bed days. In-direct outcomes would include less parental (work) absenteeism, cost saving for parents, reduced hospital crowding, and a cost saving to the hospital.

METHODS

A retrospective chart review was undertaken of all paediatric patients who underwent procedural sedation in 2017. A steering group was established in the ED with key stakeholders using a PDSA cycle methodology to introduce a draft protocol, test its performance, analyse staff feedback thereby improving the safety, applicability and operability. A final protocol was released which then underwent qualitative feedback from parents and staff alike. This four page document incorporated patient selection, resource requirement, adverse event management and a parent advice leaflet. Sedation training was offered to APLS trained middle grade doctors, while induction level training was provided to house officer doctors highlighting patient selection and the 'proceduralist' role. Nursing staff were upskilled in administration and recovery.

Qualitative results from staff and parents were obtained during, and post implementation based on a standardised questionnaire. These questions were pre-agreed by the steering committee based on similar feedback questionnaires used internationally.

RESULTS

33 Paediatric procedural sedations have occurred since implementation, a five-fold increase on the previous year. This has resulted in a direct cost saving to parents of €1680 for admission avoidance at UHW (standard government nightly levy). Furthermore a cost saving of at least €4489 was made by parents in preventing onward travel to Plastic surgery at Cork University Hospital.

A post sedation telephone survey of parents carried out revealed a high level of satisfaction for pre sedation counselling & consent, the procedure itself, and the recovery phase. Two minor events of post discharge vomiting and nightmares the night of sedation were reported. All parents would opt for ketamine sedation is offered and suitable in future.

Staff results showed significant improvement with the final draft – rating its usability, applicability and satisfaction as very good, or excellent.

CONCLUSION

This successful implementation, based on quality improvement methodology, underscores the role of PPS within a mixed ED. Positive parent and staff feedback demonstrated a successful quality improvement initiative, achieving its main aim or improved patient satisfaction (as measured through qualitative parental feedback). Direct and indirect savings were made both to the hospital for admission & theatre avoidance, and to parents with reduced travel, associated costs and work absenteeism.

Trial Registration / Funding Information (only) :

None

#18481 : Influence of the quality of life measured by the COPD assessment test (CAT) in the emergency room of exacerbated COPD patients revisited**Authors:**

Pulido Herrero Esther (1), Gallardo Rebolal Maria Soledad (1), Anton Ladislao Ane (2), Amigo Angulo Juana Maria (1), Areitio Chasco Ignacio (1), Fernandez Alonso Amaia (1), Azcarate Corral Ane (1), Ortega Ortega Teresa (1)

1. EMERGENCY SERVICE , OSAKIDETZA, BILBAO, SPAIN
2. MATHEMATICS ANALYST, KRONIGUNE, BILBAO, SPAIN

Keywords: COPD, Quality of life

Abstract :

Introduction: The COPD Assessment Test (CAT) is a questionnaire that measures the impact of COPD (chronic obstructive pulmonary disease) is having on the well-being and the daily life of the patients with COPD. Until now, the evaluation of the psychometric properties of the CAT suggests that it is a reliable, valid, and sensitive tool to measure the health status in patients with COPD. In our view, still there are some important issues related to the CAT which have not been addressed. Among them, provide clear and practical evidence to help health professionals to improve their understanding of application of the score, the interpretation and implications in various scenarios.

OBJECTIVES: To know the CAT score at different times of the exacerbation of COPD. Analyze whether these scores are related to the revisit to the emergency department.

METHODOLOGY: Prospective cohort study with consecutive sampling of opportunity. Patients were recruited with symptoms of exacerbation of COPD that were taken care of in the emergency services of four Spanish hospitals between March 2014 and January 2017. A follow-up was carried out for two months. Variables were collected from the clinical history and the episode of emergencies. The CAT baseline score, at the time of exacerbation, to 15 days and to two months is collected in personal interview and telephone. Categorical variables were expressed using frequencies and percentages and the continuous through the average and standard deviation. The Chi square test is used to measure the association between categorical variables and the Wilcoxon test for continuous variables. Statistical significance was assumed when the p value was $< 0,05$. **Funding:** This work was partially financed by subsidies of the Carlos III Health Institute (PI12/01917). **Ethical Responsibilities:** The Clinical Research ethics committees of the four hospitals participating in the study approved their realization. All participants gave their consent to participate in the in the studio.

RESULTS: 559 patients recruited 82, 11% were men, the mean age was 73, 28 years (10.75), its basal COPD was serious-very serious in 227(44,86%). The severity of the exacerbation was mild in 275 (57,17%). Admitted to hospital 337 (60.29%), revisited the emergency service 180 (32.20%). Baseline CAT score was 12.94 (7.33), in the exacerbation 24.44 (7.32), to the 15-day 14.39 (7.55). In patients who revisit the his baseline CAT score was 14.60 (7,55), in the exacerbation 24.93 (7.66), to the 15-day 16.44 (8.29). There are statistically significant differences in CAT baseline and 15-day scores among patients revisiting the emergency service and those who did not (P-value 0.0005 and 0.0001 respectively). When stratified between high vs hospital admission in the index episode, statistically significant differences are observed for CAT basal, exacerbation and 15-day scores (P value < 0.0001).

CONCLUSIONS: The CAT could be a useful tool in monitoring the recovery of sharpening, helping to identify patients most likely to revisit the emergency service. So it could help the clinician to manage decisions about treatment, the decision to enter or high home as well as to evaluate the care process

Trial Registration / Funding Information (only) :

Funding: This work was partially financed by subsidies Of the Carlos III Health Institute (PI12/01917). Ethical Responsibilities: The Clinical Research ethics committees Of the four hospitals participating in the study approved their realization. All participants gave their consent to participate in the In the studio.

#18482 : Somatic complaints in survivors after Typhoon Haiyan 2013 in the Philippines**Authors:**

Elisa Andreoli (1), Andrea Bartolucci (2), Vincenzo G Menditto (2), Marta Buzzo (2), Francesca Riccomi (2), Mattia Sampaolesi (2), Alessia Raponi (2), Lara Montillo (2), Francesca Fulgenzi (3), Sirio Lombardi (2), Alessandro Mor (2), Mario Caroli (4)

1. Emergency Department, ospedali Riuniti di Ancona, Ancona, ITALY
2. Emergency Department, Ospedali Riuniti di Ancona, Ancona, ITALY
3. Emergency department, Ospedali Riuniti di Ancona, Ancona, ITALY
4. Emergency Department, Ospedale "Carlo Urbani", Jesi, ITALY

Keywords: disaster; somatic complaints; psychosomatic symptoms

Abstract :**Background**

Somatic complaints (i.e., somatization symptoms and pain) in survivors of natural disaster are frequent symptoms and a complicating factor in the treatment of these patients.

The main objective of this study is to analyze the prevalence of possible somatic complaints in survivors during phase 3 post Typhoon Haiyan 2013 in the Philippines.

Methods

One month after-disaster, between 23th of November and 22th of December 2013, ARES Emergency Medical Team Type 1 Fixed have managed health care of survivors in Esteban – Burauen (Leyte - Eastern Visayas) and collected data: anagraphic data, prevalent symptoms and final diagnosis of these survivors. We defined possible psychosomatic complaints those cases in which the prevalent symptom was either chest pain or abdominal pain or headache or malaise or hypertension and it was not possible to obtain an organic diagnosis after the diagnostic pathway. We analyzed the prevalence of psychosomatic complaints in our population and by using simple logistic regression we looked for predictive factors for or against the diagnosis of psychosomatic symptoms.

Results

1890 patients were visited: median age 31 (standard deviation 24), 54% female. 407 patients (21%) had possible somatic symptoms (40% abdominal pain, 25% chest discomfort/pain and palpitations, 19% headache, 11% malaise and 5% hypertension). 225 of these 407 patients (55%) were diagnosed as psychosomatic complaints (12% of the entire study population). The predictive factors for diagnosis of psychosomatic symptom were: malaise with OR of 1.40 (95% CI 1.15-1.71, $p<0.01$), headache with RR of 1.34 (95% CI 1.11-1.62, $p<0.01$), abdominal pain with RR of 1.06 (95% CI 0.89-1.26, $p=0.5$) and hypertension with RR of 1.25 (95% CI 0.91-1.72, $p=0.2$). The predictive factor against diagnosis of psychosomatic symptom was chest discomfort/pain and palpitations (RR 0.54, 95% CI 0.41-0.73, $p<0.01$).

Discussion and conclusions

The importance of diagnosing a psychosomatic complaint in patient who experienced natural disaster is the possibility of special treatment options. In the literature the prevalence rates of psychosomatic complaints, such as patients presenting persistent pain symptoms, after natural disaster range from 10 to 50%. Our data confirmed this moderately high prevalence, in particular in a selected subgroup of patients with pain and/or malaise.

Trial Registration / Funding Information (only) :

None

#18483 : Early detection of sepsis in the emergency room by a simulative comparison of clinical data with a new tool using loess regression.

Authors:

Péter Kanizsai (1), Gyula Molnár (2), Johanna Takács (3), Anna Gyarmathy (4)

1. associate professor, University of Pécs, Clinical Centre, Univeristy Department of Emergency Medicine, Pécs, HUNGARY
2. PhD Student, Semmelweis University, Doctoral School, Budapest, HUNGARY
3. scientific advisor, Semmelweis University, Faculty of Health Sciences, Budapest, HUNGARY
4. scientific advisor, Semmelweis University, Doctoral School, Budapest, HUNGARY

Keywords: sepsis, early detection, scores, point-of-care measurements

Abstract :

Introduction: There is controversy surrounding the use of different sepsis scores, vital parameters, and laboratory results to diagnose sepsis

Aims: We investigated whether selected physiologic and metabolic parameters can be reliably used in the emergency department to differentiate sepsis from other disease states that mimic it, such as dehydration and stroke.

Methods: We performed a retrospective chart review of patients aged 18+ in the Department of Emergency Medicine, Clinical Centre, Semmelweis University, Hungary. The primary outcome was sepsis. Independent variables were gender, age, body temperature, mean arterial pressure (MAP), heart rate (HR), respiratory rate (RR), pH, lactate levels, and bicarbonate levels. Loess regression was used to identify inflexion points, and multivariate logistic regression to assess associations and the area under the receiver operating characteristic (ROC) curve.

Results: Of 664 patients 228 had sepsis, 274 dehydration, and 228 stroke. U, V, W or reverse U-shaped inflexions were identified for age (risk:56-83 years), body temperature (risk:<35.6, >37.3 ° C), bicarbonate (risk:<22.3 mEq/l), HR (risk:<53, >91 bpm), lactate (risk:<1, >2.5 mmol/L), and pH (risk:<7.34, >7.45). In the final multivariate analysis, RR and high-risk age, bicarbonate, HR, pH, and body temperature were positively associated; and MAP was inversely associated with sepsis risk – gender and lactate did not stay in the model. The area under the ROC curve was 0.9021.

Conclusions: We can conclude that in addition to some SIRS and qSOFA parameters that are easy to measure at triage level, other easily measurable variables, such as pH, bicarbonate levels, and age might be useful in the diagnosis of sepsis in the ER.

Trial Registration / Funding Information (only) :

SE 49/2018

#18484 : Benefits of using an endotracheal tube introducer as an adjunct to a macintosh laryngoscope for endotracheal intubation performed by inexperienced doctors during mechanical CPR: A randomized prospective crossover study**Authors:**

Hüseyin Cahit Halhallı (1), Asım Enes Özbek (1), Emrah Çelik (1), Yavuz Yiğit (1), Serkan Yılmaz (2), Muge Çardak (1)

1. Kocaeli Derince Training and Research Hospital, Emergency Medicine, University of Health Sciences, Kocaeli, TURKEY

2. Emergency Medicine, Kocaeli University, izmit, TURKEY

Keywords: airway management, mechanical compression, intubation, emergency medicine

Abstract :

Objective: This study aimed to compare the first-attempt success rates of inexperienced doctors performing endotracheal intubation on mannequins in an ambulance simulation using a Macintosh laryngoscope (ML) with or without an endotracheal tube introducer (ETI) during cardiopulmonary resuscitation (CPR) with a continuous mechanical CPR device. **Methods:** In this randomized prospective crossover study performed in an ambulance simulation, the participating inexperienced doctors were assigned to one of two groups. One group performed intubation on a mannequin using an ML, first without and then with an ETI, while the other group performed these intubations in the opposite order (ML+ETI followed by ML alone). The primary outcome measure was defined as the first-attempt success rates of the doctors. The secondary outcome measures were the intubation time, number of attempts, and difficulty level of these two methods as defined by a Likert scale. **Results:** The first-attempt success rates for tracheal intubation using the ETI+ML and ML alone were 77.5% (31/40) and 65% (26/40), respectively ($p = 0.227$). The overall success rates for tracheal intubation using the ETI+ML and ML alone were 95% (38/40) and 75% (30/40), respectively ($p = 0.021$). The average successful tracheal intubation times were 30.48 ± 12.41 sec with the ETI+ML and 23.93 ± 12.07 sec with the ML alone (mean df: -6.55 sec, 95% CI: -12.55- -0.55, $p = 0.033$). **Conclusions:** Results of this study indicate there were no significant differences in the success rates of first endotracheal intubation attempts during CPR using an ML with or without an ETI. However, the overall successful intubation rates were significantly increased with the use of an ETI.

#18485 : Role Of MPV And Platelet/MPV Ratio In The Diagnosis Of Cardiac Dilemma; Cardiac Or Non-Cardiac Chest Pain, And Severity Of Acute Coronary Syndrome**Authors:**

Onur Karakayalı (1), Anıl Karakayalı (2), Serdar Bozyel (3), Serkan Yılmaz (4)

1. Kocaeli Derince Training and Research Hospital, Emergency Medicine, University of Health Sciences, Kocaeli, TURKEY

2. Kocaeli Derince Training and Research Hospital, Internal Medicine, University of Health Sciences, Kocaeli, TURKEY

3. Kocaeli Derince Training and Research Hospital, Cardiology, University of Health Sciences, Kocaeli, TURKEY

4. Emergency Medicine, Kocaeli University, izmit, TURKEY

Keywords: Emergency medicine, Mean Platelet Volume, Chest pain

Abstract :

AIM: To investigate the effectiveness of MPV and platelet/MPV ratio as an independent marker on mortality for prediction of critical vascular stenosis in the differential diagnosis of ACS and cardiac/non-cardiac chest pain in patients presenting to the emergency room.

MATERIAL-METHOD: This retrospective observational study included patients of 45 years of age and above presented to the emergency room with chest pain. The patients were divided into two groups with cardiac and non-cardiac chest pain. MPV, plt/MPV ratio, troponin I values, coronary angiography results, in-hospital and 1-month hospital mortality were recorded.

RESULTS: A total of 753 patients were evaluated according to clinical, laboratory and echocardiography findings. Non-cardiac pathology was determined in 471 (62.54%), and cardiac pathology was determined in 282 (37.46%). The mean age was determined as 60.1 years (95% CI:59.4-60.9) and 59% were male. A statistically significant difference was detected between cardiac and non-cardiac patients with regard to platelet, CK-MB, Troponin I, MPV and plt/MPV values ($p=0.005$, <0.001 , <0.001 and <0.001 , respectively).

The ROC curve, which plots Major cardiac adverse event (MACE) estimation of MPV and Plt/MPV values; AUC was found as 0.677 (95% CI: 0.638-0.716) for MPV and 0.366 (95% CI:0.326-0.407) for Plt/MPV. In the assessment of MACE + patients, the mean MPV value was statistically significantly low in patients with Non-STEMI-ACS ($p=0.003$, mean df:-0.5, 95% CI:-0.9-0.2) compared to the patients with STEMI. The mean MPV value was statistically significantly higher in patients with critical stenosis compared to the patients who did not have a critical stenosis ($p\leq 0.001$, mean df:1.1, 95% CI:0.7-1.4), and the mean Plt/MPV value was statistically significantly lower in patients with critical stenosis compared to the patients who did not have a critical stenosis ($p\leq 0.001$, mean df: -4.9, 95% CI:-7.6 _ -2.3)

CONCLUSION: MPV and the platelet level are significant as dependent markers for the diagnosis of ACS and mortality when used together with the other described risk factors in the literature.

#18486 : Knee X-rays in the Emergency department of the United Kingdom**Authors:**

Ahmad Ismail (1), Mohammad Ansari (1), David Faroogi (2), Omar Amar (3)

1. , george elliot hospital, Birmingham, UK
2. , george elliot hospital, Nuneaton, UK
3. , George Eliot Hospital NHS Trust, Nuneaton, UK

Keywords: Knee x-ray

Abstract :

Introduction

Emergency room physicians encounter patients with acute knee trauma and painful knee. X-rays are usually ordered in both cases, following the guidelines in text books that x-rays should be taken in every knee injury. Rules have been developed to reduce the unnecessary use of xrays in trauma patients. The Pittsburg decision rules should be used to decide if the patient requires an x-ray. Application of this rule may lead to a reduction of x-rays in the Emergency Department, reducing expenditure without an increase in adverse outcomes.

Objective

This study was carried out at George Eliot Hospital, Nuneaton to evaluate the efficacy of x-rays of the knee.

Methods

This is a retrospective study where the knee x-rays of 500 patients were reviewed and data collected on the sex of the patients and the reason for x-ray.

Results

270 females and 230 males had knee x-rays taken. 282 patients had x-rays taken for knee pain without any injury. X-rays were reported as showing Osteoarthritis of different grades in all cases. 218 patients had x-rays taken for trauma and 14 of these showed a fracture. None of the notes mentioned whether the Pittsburg decision rule was applied before requesting for an x-ray. The majority of fractures were depressed fractures of tibial plateau and fractured patella.

Discussion

For several years researchers have been working to produce protocols that may reduce the number of x-rays taken for limb injuries. The Ottawa ankle rule has been successful in this regard. The Ottawa knee and Pittsburg decision rules are the best guidelines for evaluation of knee injuries.

The Pittsburg Decision rule describes blunt trauma or a fall as a mechanism of injury. An age younger than 12 or older than 50 years and an inability to walk for four weight bearing steps in the emergency department.

In a study carried out at three teaching hospitals, the Pittsburgh decision rule was found to be 99% sensitive and 60% specific for the diagnosis of knee fractures and could have reduced radiography by 52%.

Conclusion

Patients with painful knee do not require an x-ray to confirm Osteoarthritis. All trauma patients need to have the Pittsburg decision rule applied before requesting an x-ray.

Trial Registration / Funding Information (only) :

This research was not registered as it did not involve any patients. This study did not receive any specific funding. Conflicts of Interest: None

#18487 : Exacerbation of COPD in women: equal to men?

Authors:

Pulido Herrero Esther (1), Armentia Bardeci Jesus Maria (1), Piñera Salmeron Pascual (2), Mendia Bilbao Itxasne (1), Galarreta Martin Maitane (1), Mimenza Espizua Terese (1), Alonso pinar Leticia (1), Muñoz Araujo Francisco David (1)

1. EMERGENCY SERVICE , OSAKIDETZA, BILBAO, SPAIN
2. EMERGENCY SERVICE , Servicio Murciano de Salud, Murcia, SPAIN

Keywords: COPD, women

Abstract :

INTRODUCTION: The greater longevity of women and the massive incorporation of women into smoking habit has produced an epidemiological change, increasing in US chronic diseases associated with tobacco, and in particular COPD. Despite this reality there are few studies on how sex influences the course of the disease and more specifically on exacerbations.

OBJECTIVE: To describe our sample of exacerbated COPD regarding sex (female vs. man). Analyzing whether sex (female vs. male) influences the income decision, as well as in the short evolution (admission in UCI or UCRI, or need for mechanical ventilation invasive or non-invasive in less than 7 days) and medium term (measured as re-entry and revisited in the 2 months) in patients who consult the emergency services for exacerbation of COPD.

METHOD: It is a prospective cohort study in which 587 patients with symptoms of COPD exacerbation who were treated in the emergency services of four Spanish hospitals between March 2014 and January 2017 were recruited. A follow-up was carried out for two months. Variables were collected from the clinical history and the episode of Emergencies. The categorical variables were expressed by frequencies and percentages and continuous by means of the average and deviation standard. The Chi squared test was used to measure the association between categorical variables and the WILCOXOM test for continuous variables. Statistical significance was assumed when P value was < 0.05 .

RESULTS: Of the 587 patients recruited 81.94% were men, the mean age was 73,53 (10,76) years, their COPD basal was severe-very serious in 239 (44,92%). The severity of the GOLD 2017 exacerbation was: Mild 149 (25.38%), moderate 79 (13.46%) and severe 359 (61.16%). They enter 359 (61.16%), revisited the emergency Service 180 (32.20%) and reentered 132 (23.70%). There were statistically significant differences (P value < 0.05) between women and men for the following variables: Age, heart disease, analytical data (creatinine, urea, PCR and Blood Ph), treatment established in emergencies (Aerosoltherapy, anxiolytics), basal treatment (antidepressant and antiarrhythmic). There are statistically significant differences between women and men for re-entry to two months; (14 (14.00%) VS 118 (25.82%) P value 0.0118). There are no statistically significant differences for income (72 (67.92%) VS 287 (59.67%) P value 0.1144) and revisiting the Emergency services (26 (26.00%) VS 154 (33.55%) P value 0.1431).

CONCLUSIONS: Our sample is composed mostly of men. Despite this the only differences encountered with women are that these are younger, have lower heart disease and kidney failure, take more anxious depressive medication and re-enter less. Given the scarce differences found despite the large number of variables explored, we can conclude that women and men appear to be equal in the face of the exacerbation of COPD.

Trial Registration / Funding Information (only) :

Funding: This work was partially financed by subsidies Of the Carlos III Health Institute (PI12/01917). **Ethical Responsibilities:** The Clinical Research ethics committees Of the four hospitals participating in the study approved their realization. All participants gave their consent to participate in the

In the studio

#18488 : Comparing training techniques in personal protective equipment use**Authors:**

Richard James Salway (1), Trenika Williams (2), Camilo Londono (3), Kristi Koenig (4), Bonnie Arquilla (5)

1. Department of Emergency Medicine, Kings County Hospital Center, Brooklyn, USA
2. , Geisel School of Medicine at Dartmouth, Hanover, USA
3. , SUNY Downstate College of Medicine, Brooklyn, USA
4. Department of Emergency Medicine, Center for Disaster Medical Services, University of California - Irvine, Irvine, USA
5. Department of Emergency Medicine, SUNY Downstate College of Medicine, Brooklyn, USA

Keywords: disasters, emergencies, preparedness, personal protective equipment, training, emergency medicine

Abstract :**Introduction:**

While an emphasis has been placed on the importance of personal protective equipment (PPE), there are no standardized PPE training guidelines for EM physicians, though many hospitals require brief in-person annual trainings. Physicians' response to hazardous material events require PPE utilization to ensure the safety of victims, facilities, and providers; therefore, providing effective and accessible training is crucial. In the event of a real event, circumstances may not allow for an in-person presentation and an accessible video training may provide a useful alternative.

Methods:

A randomized trial was performed with sixteen EM residents divided into two sets of groups, with Groups 1 and 2 viewing a demonstration video and Groups 3 and 4 receiving a separate in-person training. The groups then donned and doffed while blinded evaluators assessed critical tasks utilizing a prepared evaluation tool.

Results:*Donning*

During donning, the four groups were evaluated on fourteen individual critical tasks. These tasks were meant to happen in sequence and were specifically included in both the video and in-person trainings.

Groups 1 and 2 (video trained) had a total of nine failures out of fifty-five evaluated possibilities - an error rate of 16.0% (95% CI 11.2% to 32.0%). Frequently failed tasks involved checking the PAPR for functionality, and not performing a final Buddy check prior to entering the decontamination showers.

Groups 3 and 4 (in-person trained) had a total of eleven failures out of fifty-six evaluated possibilities - an error rate of 19.6% (95% CI 8.6%-28.5%). Most frequently failed tasks also involved PAPR inspection and final Buddy check but had additional common failures in checking vital signs and providing hydration during the process.

Using a Fisher's exact test to compare the number of failed demonstrated a two-tailed P value of 0.81, demonstrating no statistically significant difference between donning errors in the two sets of groups.

Doffing

During doffing, each of the four groups were evaluated on eleven individual critical tasks, also meant to happen in sequence.

Groups 1 and 2 had a total of fifteen failures out of forty-four evaluated possibilities with an error rate of 34.1% (95% CI 21.8% to 48.9%). The failed tasks were largely evenly distributed.

Groups 3 and 4 had a total of twelve failures out of forty-four evaluated possibilities - an error rate of 27.3% (95% CI 16.2% to 42.0%). Frequently failed tasks involved the removal of the PAPR hood and rechecking vital signs.

A Fisher's exact test demonstrated a two-tailed P value of 0.64, showing no statistically significant difference in doffing errors between the two sets of groups.

Discussion:

In this pilot study, video and in-person training were equally effective in preparing residents for donning and doffing Level C PPE, with no statistically significant difference between the error rates in each modality. Further research into this subject with an appropriately powered study is warranted to determine if this equivalence persists.

#18492 : CERVICAL SPINE XRAYS SHOULD WE BOTHER?**Authors:**

Octav Cristiu (1), Conor Kelly (2)

1. Emergency Medicine, Our Lady Of Lourdes Hospital, Duleek, IRELAND
2. Emergency Medicine, Our Lady Of Lourdes Hospital, Drogheda, IRELAND

Keywords: cervical spine, trauma, fracture

Abstract :

Introduction: cervical spine imaging in trauma is based on the clinical assesment of patients is xray enough to saftey clear the c spine?

Matherial and method : we present 4 cases where based on the inital assesment x rays where indicated or not (Nexus and Canadian C spine Rules), and where subsequently reported as no post traumatic injuries. patents went to more advanced imaging CT which revealed significant fractures with potential serious outcomes if missed or not treated .

Results : Case 1: 29 years old male fall backwards on a small stool and came to our ED(Emergency Department), transfered by ambulance complaining of a headache and mild neck pain. On examination he had mild tenderness on the midline and discomfort on neck range of movements. As per Nexus and Canadian C Spine rules xrays where indicated. Xrays where done and reported no postraumatic fracture or dislocations by a consultant radiologist. Patient went for CT(Computer Tomography) of cervical spine because of ongoing clinical concerns and this revealed a fracture of C1 anterior arch extending into the lateral mass with 3 mm displacement, unstable fracture.

Case 2: 33 years old male transfered by ambulance rolled over road traffic accident mobile at scene walking into the department complaining of mild headache. On examination minimal tenderness over C3/C4 that improved with analgesia. Xrays where done and reported normal by 2 consultant radiologist and discharged home. Patient represented 7 h later complaining of severe neck pain and unable to move the neck. Ct scan was performed and showed transverse fracture of the base of odontoid with anterior subluxation.

Case 3 : 68 years old female pushed by a child minor fall presented to ED because of neck pain. Xrays where done and reported normal. Because of clinical concerns, CT was done and revealed C1 fracture anterior arch extending into the lateral masses and 2 mm displacement.

Case 4 : 58 years old male fall in a pub C2H5OH came to ed because of neck pain and mild headache. Xrays where done and reported normal, because of clinical concerns CT was done and revealed C2 body fracture with posterior displacement.

Conclusions : Cervical spine Xrays are important in the context of trauma to exclude gross abnormalities but if there is ongoing clinical concerns, CT should be the investigation of choise for traumatic neck pain.

Trial Registration / Funding Information (only) :

no funding was provided

#18493 : A randomised, double-blind, placebo controlled trial of ondansetron to reduce vomiting in children receiving intranasal fentanyl and nitrous oxide for procedural sedation and analgesia**Authors:**

Emmanuelle Fauteux-Lamarre (1), Franz E Babl (1), Michelle McCarthy (1), Nuala Quinn (1), Andrew Davidson (2), Donna Legge (3), Katherine J Lee (4), Greta M Palmer (2), Sandy M Hopper (1)

1. Paediatric Emergency Department, The Royal Children's Hospital, Melbourne, AUSTRALIA
2. Department of Anaesthesia and Pain Management, The Royal Children's Hospital, Melbourne, AUSTRALIA
3. Department of Pharmacy, The Royal Children's Hospital, Melbourne, AUSTRALIA
4. Clinical Epidemiology and Biostatistics, Murdoch Children's Research Institute, Melbourne, AUSTRALIA

Keywords: analgesia, fentanyl, ondansetron, nitrous oxide, vomiting, emergency, pediatric, procedural sedation

Abstract :*Background:*

Intranasal fentanyl and nitrous oxide are frequently combined for procedural sedation and analgesia in children. This approach is advantageous for its non-parenteral administration, but is associated with a higher incidence of vomiting than nitrous oxide used as a sole agent. We sought to assess whether the preprocedural use of ondansetron reduces the incidence of vomiting associated with the combination of intranasal fentanyl and nitrous oxide for procedural sedation compared with placebo.

Methods:

This was a double-blind, randomised, placebo controlled superiority trial conducted between October 2016 and January 2019 at a single tertiary care paediatric emergency department. Eligible patients were children aged 3-18 years with planned sedation with intranasal fentanyl and nitrous oxide. Participants were randomised to receive ondansetron or placebo 30-60 minutes prior to nitrous oxide administration. The primary outcome was early vomiting associated with procedural sedation defined as occurring during or up to 1 hour after nitrous oxide administration. Secondary outcomes were: number of vomits and retching during procedural sedation, vomiting 1 to 24 hours post procedural sedation, procedural sedation duration, adverse events and quality of sedation across the two groups.

Results:

442 participants were randomised and outcome data were available for analysis in 436 participants. There was little evidence of a difference in the primary outcome, early vomiting associated with procedural sedation, between the groups: ondansetron 12% vs. placebo 16%, difference in proportions -4.6% (95% confidence interval [CI] -11 to 2.0; $P=.18$). However, the overall vomiting incidence up to 24 hours after the procedure was lower in ondansetron treated patients 21% vs. placebo 31% (-10%, 95%CI -19 to -1.4; $P=.02$), number needed to treat of 10. All other secondary outcomes were similar between the groups. Most sedations were reported as optimal by the treating clinician (91%). There were only two minor adverse events, both in the placebo group. There were no serious adverse events.

Discussion & Conclusions:

This is the first study reporting on premedication to prevent vomiting associated with the combination of intranasal fentanyl and nitrous oxide for procedural sedation in children. In this trial, the incidence of early vomiting was lower than previously reported in the literature, which may explain our null findings. We found little evidence that ondansetron reduces the incidence of early vomiting related to procedural sedation with the combination of intranasal fentanyl and nitrous oxide. This trial adds further evidence regarding safety of this sedation strategy.

Trial Registration / Funding Information (only) :

Trial registration: Australian and New Zealand Clinical Trials Registry number: ACTRN12616001213437 Funding: This study was funded by a grant from Murdoch Children's Research Institute. The provider of the grant has had no influence on design of the study protocol or the conduct of the study.

#18494 : I'M SHOCKED DOCTOR**Authors:**

Octav Cristiu (1), Conor Kelly (2), Ahmad Jamal (2), Niju Thomas (2)

1. Emergency Medicine, Our Lady Of Lourdes Hospital, Duleek, IRELAND
2. Emergency Medicine, Our Lady Of Lourdes Hospital, Drogheda, IRELAND

Keywords: shock, abdomen, pain

Abstract :

Introduction: Undifferentiated shock in the emergency medicine is a challenging part of the day-to-day workload in a busy ED (Emergency Department). The use of diagnostics, clinical Knowledge and other specialities involvement early in the management of a critical patient could help us change the outcome and the time spent for reaching the final diagnosis.

Methods: We present the case of a 64 year old female transferred by ambulance presenting with mild abdominal pain, pyrexia , vomitings, generally unwell , fatigue, unable to mobilise without help. On arrival she was shocked : HR 112, BP 68/38, 74/47, sats 93%, BSL 22.9, ketones 0.9, GCS 15/15. She had a past medical history of diabetes, diverticulitis, Lower back pain,osteoarthritis, depression, hiatus hernia, recent nerve root injection(L5-S1) 3 days prior. Examination: pale looking, dry tongue and lips, cold extremities, weak radial pulse, capillary refill time more than 6 seconds, tenderness over the left flank and left renal angle.

Results: Labs: lactate 3.5, BE -5.7, Hb 9.1, urine: 2+ leukocytes, urea17.7 , crea 285, crp 295, wcc 20.9, pt16.6 INR 1.9, trop 16018 (less than 1 normal) Ecg ST depression antero-lateral, chest xray enlarged heart with normal lungs, CT Abdomen revealed: gas was present within the ureter and calyceal left upper middle and lower poles of the kidney, left sided perinephric stranding and small free fluid dx consistent with emphysematous pyelitis.

Conclusions: Our Differential after initial assesment was: septic shock from perforated diverticulitis or urinary tract infection, non ST elevation myocardial infarction with cardiogenic shock, leaking abdominal aortic aneurism. Emphysematus pyelitis is an extremely rare urological emergency that could lead to a very poor patient outcome if not diagnosed promptly. It is seen only in the context of diabetes from impaired glucose metabolism and host immunosuppression and the bacteria involved are not gas producing ones E Coli and Klebsiella Pneumoniae 85%. The prompt access to out of hour computer tomography helped us make the final diagnosis and changed the patient outcome. Mortality is very high 89% because of late presentation. Our patient was sick only for a day.

Trial Registration / Funding Information (only) :

no funding

#18495 : Impaired clearance of the perivascular spaces leading to post-cardiopulmonary resuscitation cognitive dysfunction in mice**Authors:**

Yanzi Zhang (1), Yu Cao (2), Sheng Ye (2), Lei Wang (3)

1. Department of Emergency Medicine, West China Hospital, Sichuan University; Disaster Medical Center, Sichuan University; Laboratory of Emergency Medicine, West China Hospital, Sichuan University, Department of Emergency Medicine, West China Hospital, Sichuan University; Disaster Medical Center, Sichuan University; Laboratory of Emergency Medicine, West China Hospital, Sichuan University, Chengdu, CHINA
2. , Department of Emergency Medicine, West China Hospital, Sichuan University; Disaster Medical Center, Sichuan University; Laboratory of Emergency Medicine, West China Hospital, Sichuan University, Chengdu, CHINA
3. , Molecular Imaging Research Lab, West China Hospital, Sichuan University, Chengdu, CHINA

Keywords: cognitive dysfunction; cardiopulmonary resuscitation ; aquaporin 4; perivascular spaces

Abstract :

Background & Aims: Cognitive dysfunction is one of the most common nervous system complications with substantially increased morbidity in cardiac arrest (CA) patients. In survivors of CA, accumulation of metabolic waste products and noxious substances in the interstitial fluid of the brain is thought to result from global brain ischemia reperfusion and may contribute to neuronal dysfunction and cognitive impairment. This study was designed to test the hypothesis that the accumulation of these substances, such as amyloid-beta protein, may result from reduced clearance from the brain.

Methods: In a mice model of cardiac arrest (CA) with induced by electric shock following cardiopulmonary resuscitation (CPR), dynamic contrast enhanced MR imaging and mass-spectroscopy techniques were used to assess the efficacy of the perivascular spaces system (PVSs), which facilitates clearance of solutes from the brain in survivors. Immunofluorescence of aquaporin-4 (AQP4), cognitive tests like spatial working memory and spatial reference memory were also performed.

Results: Declined PVSs clearance of most of brain regions (olfactory bulb, caudal cortex, prefrontal cortex, thalamus, midbrain and hippocampus) in CA-CPR mice was identified, which aligned with cognitive deficits. Reduced AQP4 expression was observed in the olfactory bulb and prefrontal cortex in mice after CA-CPR, which could contribute to the pathophysiological mechanisms underlying the impairment in function of PVSs.

Conclusions: This study provides the experimental evidence of impaired PVSs function in survivors after CA-CPR, potentially mediated by decreased AQP4 expression in the affected regions, with aligned closely with cognitive dysfunction.

Trial Registration / Funding Information (only) :

This study was supported by the National Research Foundation of Nature Sciences [81772037]

#18496 : Head injury by place in the home**Authors:**

Wonil Na (1), Hang A Park (1), Soon Ju Wang (1), Chung Ah Lee (1), Ju Ok Park (1)

1. , hospital, seoul, KOREA

Keywords: Head injury, place, home, intracranial injury, concussive injury

Abstract :

Head injury by place in the home

Background

It has estimated that traumatic brain injury(TBI) affects over 10million people annually leading to either mortality or hospitalization. TBI, according to the World Health Organization (WHO), will surpass many diseases as the major cause of death and disability by the year 2020. Falling within the home is a major cause of head injury in all age groups. In this paper, We identified the most frequent place where head injury caused by falling and slipping within the home occurs, and the differences in age.

Method

This retrospective case-control study used data from seven hospitals participating in the head and spinal injury survey in the in-depth survey of the emergency department-based injury monitoring system. Patients diagnosed with traumatic head injury at an emergency department after falling or slipping at home between June 2008 and December 2011 were examined for the characteristics of their intracranial injury and concussive injury in relation to the place of injury at home. For concussive injuries, an additional analysis was performed in consideration of the interaction with the age group.

Results

During the study period, there were 5,962 patients with head injury, 244 of whom had intracranial injuries and 1,318 had concussive injuries. For intracranial injuries, the greatest number of cases occurred in the balcony (35%), while the greatest number of concussive injuries occurred in a room (26%). Intracranial injuries that occurred in a room mostly involved patients aged 65 years or older (71.2%), while those that occurred in a restroom or balcony mostly involved adults (53.3% and 47.1%, respectively). Concussive injuries that occurred in a room or the living room mostly involved children aged 7 years or under (65.7% and 56.6%, respectively), and those that occurred in a restroom or balcony mostly involved adults (49.6% and 46.9%, respectively). Multivariate regression analysis showed that the odds of intracranial injury was significantly higher in the balcony compared to a room (odds ratio(OR): 2.69, 95% confidence interval(CI): 1.49-4.88) but there were no significant differences in the odds of concussive injuries according to the place of injury.

Conclusion

This study confirmed that the incidence of intracranial injury varies according to places within home, and that older adults are at a markedly higher risk for intracranial injury compared to children

#18497 : New infant chest compression technique. A randomized, crossover, simulation trial

Authors:

Szarpak Lukasz (1), Smereka Jacek (2), Gorczyca Damian (1), Evrin Togay (3), Plusa Tadeusz (1), Katipoglu Burak (3)

1. Faculty of Medicine, Lazarski University, Warsaw, POLAND

2. Department of Emergency Medical Service, Wroclaw Medical University, Wroclaw, POLAND

3. Department of Emergency Medicine, Ufuk University Medical Faculty, Dr Ridvan Ege Education and Research Hospital, Ankara, TURKEY

Keywords: chest compression; quality; infant; cardiopulmonary resuscitation; medical simulation

Abstract :**Background:**

The ability to perform high quality chest compressions is one of the basic skills that medical staff should have. Current CPR guidelines recommend performing chest compression in infants and newborns using either two fingers (TFT) or two thumbs (TTHT). However, both have their advantages and disadvantages. In the first case, as shown by the studies, there is full chest recoil, however, the chest is pressed too shallow, in the second case the results are the opposite. The aim of the study was to compare these two methods with the authors' own new method of chest compression.

Methods:

This was prospective, randomized, crossover, observational, simulation trial. The study involved 60 nurses who participated in Basic Life Support trainings. After the correct demonstration of the recommended compression methods (TFT and TTHT) and the innovative chest compression method (nTTT) based on thumbs perpendicular to the chest, the participants had the opportunity to practice individual methods with the use of an infant simulator. During the study, participants were asked to perform 2-minute neonatal resuscitation based on continuous chest compression. Both the sequence of participants and methods of chest compression were random and ResearchRandomizer was used for this purpose. The study analyzed the depth and rate of chest compression as well as the correctness of chest recoil.

Results:

The study involved 60 nurses whose median age was 43 years (IQR; 32-48), and work experience achieved 17 years (IQR; 5-25). The median depth of chest compression based on particular compression techniques (TFT, TTHT, nTTT) was differentiated and achieved 32 mm (29-35) vs. 41 mm (37-42) vs. 40 mm (37-42; $p < 0.001$) respectively. The rate of compression was the highest for TFT and was 127 (118-130) compressions per minute (CPM), followed by 115 CPM (108-122) and 112 CPM (102-120; $p < 0.001$) for TTHT and nTTT (102-120; $p < 0.001$), respectively. Correctness of chest recoil was 96% (83-100) for TFT, 35% (29-43) for TTHT, and 96% (89-100) for nTTT.

Discussion and Conclusions:

The results of the study show that the nurses participating in the study performed the highest quality chest compressions on the newborn using the new authors method of chest compression nTTT. Further research is needed to verify the results obtained in the study.

Trial Registration / Funding Information (only) :

own research carried out financed from the statutory resources of the Lazarski University

#18498 : Non-invasive Zip wound closure for lacerations in pediatric and adult A&E departments.**Authors:**

Filippa Lindén Bergman (1), Anna Dahl (2), Christian Schyllert (3), Ellinor Magnusson (4), Emmanuele Patti (5), Jeremia Jilke (6), Felicia Rydeberg Kjaernet (7), Margaretha Lannge (8), Krakowski Radek (8), Pia Malmquist (9), Therese Djärv (10)

1. Medical Doctor, Capio St.Göran Hospital and Karolinska University hospital Huddinge, Stockholm, Solna, SWEDEN
2. Medical Doctor, Karolinska University hospital Solna, Stockholm, Stockholm, SWEDEN
3. Medical Doctor, PhD student, Blekingesjukhuset, Umeå University, Karolinska University hospital Solna, Stockholm, Stockholm, SWEDEN
4. Medical Doctor, Capio St.Göran Hospital and Karolinska University hospital Huddinge, Stockholm, Stockholm, SWEDEN
5. Medical Doctor, Södersjukhuset and Karolinska University hospital Huddinge, Stockholm, Stockholm, SWEDEN
6. Registered Nurse, Karolinska University hospital Huddinge, Stockholm, Stockholm, SWEDEN
7. Medical Doctor, Karolinska University hospital Huddinge, Stockholm, Stockholm, SWEDEN
8. Consultant, Medical Doctor, Karolinska University hospital Solna, Stockholm, Stockholm, SWEDEN
9. Consultant, Medical Doctor, Paediatric Emergency, Karolinska University hospital Solna, Stockholm, Stockholm, SWEDEN
10. Director of Research and Education, Medical Doctor, Function of Emergency Medicine, Karolinska University Hospital, Stockholm, SWEDEN

Keywords: laceration, traumatic wound, suture, surgical zippers, non-invasive wound closure

Abstract :

Background: Cutaneous lacerations requiring sutures remain a common reason for seeking medical care in the emergency. Suturing can cause pain, anxiety and necessitates time to ensure a good outcome. This study assesses if non-invasive Zip wound closure could be a way for Accident and Emergency (A&E) departments to save time as well as improve patient experience. **Method:** 13 adult and 13 pediatric patients presenting with minor lacerations to their respective A&E departments at the Karolinska University Hospital were randomized to nylon suture or non-invasive Zip wound closure. Closure and overall procedure durations and patient pain (using a Visual Analog Scale (VAS)) were measured. Patient satisfaction, pain and adverse events were recorded via phone interview at 10 and 30 days after treatment. An independent panel of physicians assessed digital photographs of the wounds after 10 and 30 days using the 0-6 Wound Evaluation Scale. **Results:** Average total treatment time in the pediatric and adult cohorts was reduced 59% ($p=0.004$) and 62% ($p=0.010$) respectively in the Zip cases vs. traditional sutures. Patients reported 69% less pain during closure (mean VAS 12.8 and 40.9, respectively), 31% less pain during closure removal and 54% less pain when assessing overall scar pain (mean VAS 9.7 and 20.8, respectively) with the Zip device compared to sutures. Patients treated with the Zip device reported 66% less fear or anxiety during wound closure compared to patients treated with sutures (mean VAS 11.8 and 34.6, respectively). Baseline grading on the Wound Evaluation Scale was an average 4.9 and 4.6 in the sutures vs. Zip cohort. After 30 days the wounds were graded 4.8 and 5 respectively. **Conclusion:** The Zip device demonstrated reduced treatment time, patient pain and anxiety and increased patient satisfaction in both the pediatric and adult emergency department. Using the Zip device, there was no requirement to use infiltration with local anesthetic and a superior cosmetic outcome after 30 days was seen. Additionally the Zip can also eliminate the need for a suture removal visit, which may save time and overall healthcare cost.

Trial Registration / Funding Information (only) :

Trial Registration: This is a post-market clinical study using a CE-marked product for its intended use, hence no registration was needed. Ethical approval by Regionala Etikprövningsnämnden (Regional Ethics Review Board) i Stockholm: Zip-009, EPN diarie number: 2017/831-31/1 Funded by: ZipLine Medical, Inc. 747 Camden Ave., Suite A Campbell, CA 95008 USA

#18500 : High-dose of beta-lactam therapy and associated outcomes in sepsis and septic shock patients in a university emergency department, Thailand**Authors:**

Pitchaya Dilokpattanamongkol (1), Auranee Trisataya (2), Viratch Tangsujaritvijit (3), Jetjamnong Sueajai (4), Preecha Montakarntikul (1), Tospon Lertwattanachai (5)

1. Department of Pharmacy, Faculty of Pharmacy, Mahidol University, Bangkok, Thailand, Bangkok, THAILAND
2. Department of Medicine, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand, Bangkok, THAILAND
3. Department of Medicine, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand, Bangkok, THAILAND
4. Toxicology Laboratory, Department of Pathology, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand, Bangkok, THAILAND
5. Department of Pharmacy, Faculty of Medicine Vajira Hospital, Navamindradhiraj University, Bangkok, Thailand, Bangkok, THAILAND

Keywords: meropenem, high-dose, sepsis, septic shock, clinical outcome

Abstract :**Introduction**

Altered pharmacokinetics, including increased volume of distribution and reduced tissue perfusion, in sepsis and septic shock patients resulted in inadequate serum drug concentration with the given standard meropenem dose. Even though higher dose regimen of hydrophilic antimicrobials was proposed, high-dose meropenem and its associated clinical outcomes in sepsis and septic shock patients admitted in the emergency department (ED), Mahidol university hospital, Thailand has not been examined.

Study objective

To compare the clinical outcomes of high-dose meropenem versus standard-dose in sepsis and septic shock patients who were admitted to the ED, Ramathibodi Hospital, Bangkok, Thailand.

Method

All sepsis and septic shock patients, in whom treatment with meropenem was indicated, were included in the study. Patients were randomized into two groups: the high-dose group (meropenem 2 g, infusion 3 hours, every 8 hours) and the standard-dose group (meropenem 1 g, infusion 3 hours, every 8 hours). Dose adjustment was done according to the renal dose adjustment protocol. Data were collected on 35 patients over 1 year. Primary and secondary outcomes included changes of modified sepsis-related organ failure assessment (mSOFA), mortality rate, ICU length of stay, mechanical ventilator days, vasopressor days and hospital stay.

Results

The study included 35 patients with 17 patients receiving standard-dose and 18 patients receiving high-dose meropenem. Age, gender, body weight, comorbidities, severity of illness, and source of infection were comparable between groups. Among identified pathogens, more than 80% were gram negative pathogens and all of them had meropenem minimal inhibitory concentration (MIC) < 0.5 mg/dL. Delta mSOFA scores were not different between two groups (-2 [range -6 to 2] in standard-dose group vs -2 [range -9 to 4] in high-dose group, P-Value = 0.99). There was no difference between standard-dose group and high-dose group in ICU mortality (17.6% vs 11.1%, P-value = 0.66), ICU free days (16.6 ± 10.6 vs 14.5 ± 11.8, P-value = 0.59), mechanical ventilator free days (18 [range 0-28] vs 20.5 [range 0-28], P-value = 0.57), vasopressor free days (9.7 ± 5.7 vs 8.9 ± 5.8, P-value = 0.68) and hospital free days (50.8 ± 33.5 vs 47.1 ± 36.0, P-value = 0.75).

Conclusion

Our study is the first study examining higher dosing of meropenem in the ED, Ramathibodi Hospital, Bangkok, Thailand. The high-dose group showed comparable clinical outcomes to the standard dose group. Even though higher dose of hydrophilic antimicrobials has been linked to the better clinical outcomes in sepsis and septic shock patients, high-dose meropenem in low MIC pathogen has not been associated with improved clinical outcomes. Further research might be needed in order to identify suitable septic shock patients who may benefit from receiving high-dose of meropenem.

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Trial Registration / Funding Information (only) :

This study was registered using ClinicalTrial.gov identifier NCT03374722 and we have got funding from Dr.Kasem Foundation, Thailand.

#18502 : Emergency Medicine Fellowship: Length-of-stay impact of establishing a large post-residency training program**Authors:**

Khalid Bashir (1), Kodumayil Ashid (1), Abdullatif Al-Khal (1), Saleem Farook (1), Dominic Jenkins (1), Kumar Thirmoorthy Samy Suresh (1), Pathan sameer (1), Thomas Prof. Stephen (1)

1. , Hamad Medical Corporation, Doha, QATAR

Keywords: emergency medicine, length of stay, fellowship training,

Abstract :

Background: Time intervals are among the most closely followed Emergency Department (ED) operational parameters. The EM evidence base contains less information on the question of whether a large post-residency training program affects LOS.

Aim/Objectives: Effect of attending level physician on improving LOS has been studied in the past. However, this study aims to assess operations impacts of a large post-residency EM Fellowship (EMF) program on LOS

Method: This was a retrospective database analysis of data collected automatically by the study ED's electronic medical record (EMR) for one full academic year, starting in September 2016. The main dependent variable was LOS for the cases discharged after EM-only evaluation (LOSDCEM), and the independent variable of interest was the proportion of EMFs as a % of all on-duty ED physicians during the shift the patient presented. Whereas, covariates included were patient factors, n of all-grade on-duty ED physicians and well as numbers of patients, shift timings, weekends, ambulance arrivals, and ED boarders. Data were downloaded and imported into the Stata statistical software package (version 15MP, StataCorp, College Station, Texas USA). **Results:** The EMF proportion of on-duty ED physicians was statistically significant at the lowest three τ levels but not significant at the higher six τ levels. For the 10th, 20th, and 30th percentiles of LOSDCEM, the % relative improvements in LOSDCEM achieved by increasing the EMF proportion 1% were, respectively, 13% (6.5/52), 8% (6.8/83), and 7% (8.1/115).

Discussion: The LOSDCEM does not appear to be unfavorably impacted by increasing the proportion of EMFs as a % of all on-duty ED physicians. The EMFs numbers (as a percentage of all on-duty physicians) disproportionately improves LOSDCEM for those patients with shorter LOS

Conclusion: The study suggests that increasing EMFs numbers (as a percentage of all on-duty physicians) disproportionately improves LOS_{DCEM} for those patients with shorter LOS.

Take Home Message, Lessons Learned, or Next Steps: Presence of senior physicians in the front line improves the length of stay

#18503 : Inhaled versus intravenous opioid dosing for the initial treatment of severe acute pain in the emergency department :
pharmacological intermediate results of the CLIN-AEROMORPH french study

Authors:

Virginie Eve LVOVSCHI (1), Justine JOLY (1), Nicolas LEMAIRE (1), Pauline CANAVAGGIO (2), Maxime MAIGNAN (3, 4), Luc-Marie Joly (1)

1. Service d'accueil des Urgences, CHRU Charles Nicolle, Rouen, FRANCE
2. Service d'accueil des Urgences, Hôpital Universitaire Pitie Salpetriere, Paris, FRANCE
3. Urgences-SAMU, CHU de Grenoble Alpes, GRENOBLE, FRANCE
4. INSERM U 1042, Université de Grenoble Alpes, GRENOBLE, FRANCE

Keywords: Morphine titration, pain management, acute pain, nebulized morphine, Randomized controlled trial

Abstract :

Background: Intravenous morphine titration (IVMT) is the gold standard for opioid treatment in the Emergency Department (ED). Nebulized morphine titration (NMT) may represent an alternative without venous access. After a preclinical study on healthy volunteers, we test the hypothesis that NMT is at least as effective as IVMT to initially manage severe acute pain in the ED, supported by pharmacologic data. **Methods/design:** We designed a multicenter (10 French EDs), single-blind, randomized and placebo controlled trial (NCT03257319). Adults between 18 and 75 years with Visual Analog Scale (VAS) $\geq 70/100$ or Numeric Rating Scale (NRS) $\geq 7/10$ will be enrolled. 850 patients will be randomized in two groups to compare two routes of MT as long as VAS > 30 or NRS > 3. In group A (425), patients will receive an initial NMT during 5 to 25 minutes. In group B (425), patients will receive initial standardised IVMT. NMT is defined as a minimum of one and a maximum of three 5-minute nebulized boluses of 10 mg or 15 mg (weight ≥ 60 kg), at 10-minute fixed intervals. IVMT is defined as a minimum of one and a maximum of six boluses of 2 mg or 3 mg (weight ≥ 60 kg), at 5-minute fixed intervals. In both groups, after 25 min, routine IVMT will be continued until pain relief if necessary. The primary outcome is the rate of relief 1 hour from the start of drug administration. Complete pain relief in both groups will be compared (non-inferiority design). Secondary outcomes are pain relief at 30 minutes and at 2 hours and median pain relief. We will compare final doses, and study the feasibility and tolerance of NMT (major and minor respiratory, hemodynamic or neurologic effects). In addition, we decided to perform a supplementary pharmacokinetic (PK) and pharmacodynamic (PD) study to assess the NMT characteristics. Thirty patients from group A will be included in a single-center analysis for a NMT modelling objective. Morphine, Morphine-3-betaglucuronide and Morphine-6-betaglucuronide will be measured at minimum 6 and maximum 7 study times (T0-T5-T10-T20-T30-T60-120). A intermediary PK/PD analysis at the tenth patient is provided. **Results:** The multicentre clinical study is still in progress. The PK/PD intermediary analysis shows that morphine concentration are therapeutic concentrations and are similar than the expected concentration with IVMT, for mean concentrations and dispersion (1-120 ng/mL, 4-19,5 ng/mL for the peak concentration). Metabolites 'concentrations analysis suggest hepatic metabolism of morphine by this route of administration. **Discussion and Conclusion:** This trial is the first multicenter randomized and controlled NMT protocol for severe pain in the ED using the titration concept. We propose an original approach of combined titration with an endpoint at 1 hour and non-inferiority design supported by pharmacologic early data that have established the NMT relevance. The PK/PD NMT study highlights the possibility of future organisational improvements for MT access in the ED.

Trial Registration / Funding Information (only) :

Current Controlled Trials NCT03257319, registered on 22nd August 2017 n° EudraCT : 2017-001638-24 PHRCN 2013

#18504 : Current use and perceived barriers of Point of care ultrasound (POCUS) in the internal and emergency medicine residency training programs in Qatar**Authors:**

Khalid Bashir (1), azad aftab (2), Ayman Hereiz (2), Saleem Farook (1), Thomas Prof. Stephen (1)

1. , Hamad Medical Corporation, Doha, QATAR

2. Emergency Medicine, Hamad Medical Corporation, Doha, QATAR

Keywords: point of care ultrasound, emergency medicine, training, internal medicine

Abstract :

1. **Background:** POCUS has been a part of emergency medicine (EM) training for over 20 years. It has recently been introduced in the internal medicine (IM) residency training programs across the developed world.

Aim/Objectives: To compare the indications, utilization, barriers and preferred method of learning about POCUS in the IM and EM residency training program to develop POCUS training program at our establishment

Method: A validated questionnaire survey was emailed to 55 EM and 35 IM faculty. Responses were anonymous, and data was analyzed with descriptive statistics.

Results: 25 EM (45%) and 21 (60%) IM faculty responded to the survey. The top 5 indications identified by both groups were central line insertion, thoracentesis, paracentesis, inferior vena cava (IVC) volume determination, and cardiac ejection fraction effusions/ right heart strain. The most frequently performed exams among EM group included central line insertion, IVC volume determination, cardiac ejection fraction effusions/ right heart strain, paracentesis and thoracentesis. The IM faculty indicated their current use is limited to central line, paracentesis and thoracentesis and POCUS is not currently used for IVC volume determination and cardiac ejection fraction effusions/ right heart strain. The common barriers identified by both groups included time to train faculty, lack of credentialing at the institution, lack of quality assurance and lack of the national guidelines. 80% of the responded faculty felt that most of the residents are very keen to learn and preferred the blended learning approach to increase the knowledge and skills required for POCUS.

Discussion: Presently POCUS is moderately used in the IM and EM residency training programs and the perceived barriers to its full use includes time constraints, lack of national guidelines and credentialing of the faculty. Blended learning appears to be the preferred approach towards acquiring knowledge and skills of POCUS in both IM and EM residency training programs.

Conclusion: POCUS utilization in IM and EM training programs may be increased after addressing the perceived barriers.

Take Home Message, Lessons Learned, or Next Steps: We have already starting working on developing curriculum and addressing the perceived barriers.

#18505 : Do the millennial learners on the emergency medicine residency program in Qatar exhibit different attitudes to online learning?**Authors:**

Khalid Bashir (1), azad aftar (2), Saleem Farook (1), Thomas Prof. Stephen (1)

1. , Hamad Medical Corporation, Doha, QATAR

2. Emergency Medicine, Hamad Medical Corporation, Doha, QATAR

Keywords: millennial learners, online learning, traditional learning,

Abstract :

Background: The attributes of millennial learners cited in the literature are based on studies in Europe and the United States and described as technology-savvy, self-learners who prefer to learn through blended learning (BL) methods that take advantage of modern technology media over traditional learning methods such as lectures. The study was grounded in the teaching of Benign Paroxysmal Positional Vertigo (BPPV), an important emergency presentation.

Aim/Objectives: The study aimed to explore the preferences in learning the application of BPPV in clinical practice in an emergency department setting

Method: In this study, 38 EM residents were randomly allocated into two groups. The first group received a traditional 45 minutes, PowerPoint based face to face (F2F) while the second group was taught through blended learning (BL) approach where the residents viewed the lecture, video and practiced the maneuver on each other without the help of the faculty. Feedback questionnaire about their preferred approach was sent to all MLs

Results: The study participants exhibited similar characteristics in age, experience and previous knowledge of BPPV. The response rate was 100 % (n=38). 25 out of 38 residents preferred the traditional F2F teaching as opposed to BL (13/13 females and 12/25 Males) which was statistically significant. An even more interesting finding was that the female MLs overwhelmingly preferred F2F to BL education, and this finding was true regardless of their postgraduate year or continent of origin

Discussion: Contrary to other studies on this group of learners, the EM millennial learners from the Middle East in our study preferred a traditional face-to-face teaching approach to learn about management of BPPV. One possible explanation for the results includes their traditional "old-fashioned" teaching in the undergraduate medical education.

Conclusion: The anomalous attitudes of millennial learners to online learning in an emergency medicine residency program in Qatar

Take Home Message, Lessons Learned, or Next Steps: We advocate further educational research in the Middle East training programs to examine the learning attitudes of MLs in graduate medical education and their contributing factors.

#18506 : Does audio recording of telephone consult in addition to a tailored feedback improve communication skills in the emergency department?**Authors:**

Khalid Bashir (1), Shah Yousaf (2), azad aftab (2), Anjum shahzad (1), Thomas Prof. Stephen (1)

1. , Hamad Medical Corporation, Doha, QATAR

2. Emergency Medicine, Hamad Medical Corporation, Doha, QATAR

Keywords: emergency medicine, telephone consultation, communication skills

Abstract :**Background**

Appropriate communication is an indispensable skill and is endorsed as a core competency of resident education by the Accreditation Council for Graduate Medical Education. Appropriate and timely feedback is essential in improving communication skills. Unfortunately majority of the residents get inadequate feedback from the supervising faculty.

Aim/Objectives: The primary aim was to evaluate that an audio recording of a telephone consultation to other specialty physicians in addition to a personalized feedback by the supervising faculty improve communication skills. The secondary aim was to gauge residents opinion about this approach

Method: This was a pilot, prospective, mixed-method study that included 16 emergency medicine (EM) residents in current training program. From October to December 2018 one senior faculty (KB) with experience of giving feedback supervised the residents during normal clinical shifts. At the start of each clinical shift there was an agreement between the faculty and the resident to assist in improving communication skills as part of the "shop floor" teaching. The telephone consult was directly observed by the supervising faculty and also audio recorded on the resident own smart phone. The direct personalized feedback was provided immediately after the consultation in a private area. The residents were asked to provide comments about this method of feedback.

Results: 16 residents agreed to participate but only 13 were able to complete the study. 3 others could not complete due to busy clinical areas. There were 4 female and 9 males. 12(out of 13) really liked this method of feedback "eye opener", "really helped me to reflect" and 10 of them would like to self-record some of their future consultations for self-improvement. While one resident felt she was extremely nervous and her communication skills was less than optimum due to direct observation and audio recording.

Discussion: Appropriate reinforcing and corrective feedback is important to improve the communication skills of residents.

Conclusion: Audio recording of the consultation and personalized feedback may be useful in improving communication skills

#18508 : Comparison of transport isolation boxes intended for transportation of patients with infectious diseases.**Authors:**

Elena Chubayko (1)

1. FMBA of Russia, Clinical hospital 85, Moscow, RUSSIA

Keywords: infectious diseases, transportation, transport isolation box

Abstract :

The foundation of safe care for patients with confirmed or suspected highly infectious disease is effective infection control practice including in addition appropriate using of medical equipment.

The objective of this report is the description of differences between two transport isolation boxes (hereinafter referred to as TIB) that are used in our hospital. We tested the TIBs under training conditions during the period from 2016 to 2018.

The following signs classification was adopted for comparison of TIBs:

1. general characteristics;
2. technical specifications;
3. used materials and accessories.

The Czech-made TIB Bio-Bag EBV-30/40 (EgoZlin, Ltd) was used as a reference for comparison.

The differences in the general characteristics relate to an automatic filter-ventilation system, regardless of changes in pressure parameters outside the device, a gas-tight sealed zipper placed higher than TIB's bottom, a transfer gateway for emergency introduction of medications and a waste pocket.

It is described in technical parameters that minimum operating time of filter-ventilation system is doubled from the UPS with a lower noise level. But the Russian model is heavier.

The material used for box is airtight, easy washable and disinfectable polymer, retaining its properties within the temperature range from -35° C to +50° C.

Testing of two TIBs during training in various weather conditions confirmed the stability of the materials and components of the Russian model, as well as the safety of medical manipulations.

Effectiveness of the bacterial and viral filter of the Russian TIB used for respiratory prosthetics was assessed by skip testing and showed to be compliant with the BSL 4 protection level under the negative pressure mode of operation and with the TH3 protection level under the positive pressure mode of operation, which confirms the lung ventilator safety during patient transportation.

The anti-aerosol filter used for transportation in Russian TIB complies with the protection class P3, and the air exhaled by the patient is already cleaned before reaching the environment. This aspect is very important if the further use of lung ventilators is considered with required spirometry or a non-invasive ventilation loop, when the air is exhaled through a respirator. In this case, the bacterial-viral filter is installed not only inside the TIB, but also in the port "from the patient", "to the patient".

The use of TIB in emergency biological situations is justified by prevention of highly infectious disease spread and showed the possibility of providing medical care to that kind of patients during training. However, the comparison of the two models showed the biosafety and infection control advantages of the new model due to the improved technical characteristics and design.

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Trial Registration / Funding Information (only) :

Initiative work.

#18509 : Issues in the supply of and demand for disaster medical care in Osaka City based on damage estimation for a Nankai Trough megathrust earthquake: A geographic information system-based analysis**Authors:**

Hiromasa Yamamoto (1), Yoshinari Kimura (2), Yasumitsu Mizobata (1)

1. Department of Traumatology and Critical Care Medicine, Osaka City University, Graduate School of Medicine, Osaka, JAPAN
2. Faculty of Literature and Human Science, Osaka City University, Osaka, JAPAN

Keywords: medical care system, Nankai Trough megathrust earthquake, Geographic Information System

Abstract :

Introduction The Osaka prefectural government has publicized damage estimation for a Nankai Trough quake, which has a recurrence probability of about 70% in the next 30 years. Although there are designated “disaster coping” hospitals in Osaka Prefecture, studies have not fully examined whether the city’s medical care system will be able to manage the high number of casualties in such a situation.

As the burden on medical systems differ markedly depending on individual hospitals’ capacities, which reflect factors such as bed numbers and operating rates, and earthquake and tsunami victims’ behaviors, we sought to investigate the manageability of the disaster medical care system in Osaka City by using the corresponding operating data for each disaster coping hospital, which was obtained from the Ministry of Health, Labour and Welfare, and the casualty distributions for cases of high and low tsunami evacuation rates.

Methods First, we expanded the hospital positional data on the Geographic Information System (GIS). There are 7 disaster base hospitals (DBHs) and 94 disaster cooperative hospitals (DCHs). Next, we calculated the number of available beds based on the total number of beds and the monthly operating rates for disaster medical facilities in Osaka City and displayed the inpatient care capacities on the map.

Subsequently, we calculated the detailed distributions of severely and moderately injured patients based on the damage estimation in two conditions—that is, early versus delayed evacuation from the tsunami-affected zone.

We ran a simulation in which severely injured patients were assigned and transported to DBHs directly, and moderately injured patients were transported to DCHs. Moderately injured patients who could not be accommodated in the DCHs were then transported to the nearest DBHs.

Results In the low evacuation rate condition, 16,528 severely injured patients were transported to DBHs (22-4,506), with the highest number being admitted to a DBH in the northeastern part of Osaka City and the lowest number being admitted in the central part. A total of 59,316 excess moderately injured patients were transported to DBHs (0-16,015); again, the highest number were admitted at a DBH in the northeastern part. In the high evacuation rate condition, 839 severely injured patients were transported to DBHs (22-288), whereas 1,367 excess moderately injured patients were transported to DBHs (0-636). In both simulations, coastal area DBHs did not receive the highest number of severely and moderately injured patients, but a DBHs in the northeastern part did.

Discussion The GIS allows for visualizing the manageability of the disaster medical care system in Osaka City and provides directions for improving the medical care system. To date, countermeasures against a major Nankai Trough earthquake have been focused mainly in the coastal areas. However, this study revealed that any problems in the supply of and demand for medical care would have the greatest impact on Osaka City’s northeastern area. Our results also showed that the burden on medical systems differed markedly depending on whether the evacuation was early or delayed, thus underscoring the importance of providing sufficient education to citizens.

#18510 : Social media platform enhances networking and collaboration of small-scale training programs**Authors:**

Chen-Mei Hsu (1), Ching-Hsing Lee (2), Hao-Yang Lin (3), Shao-Feng Liao (4), Cheng-Heng Liu (5)

1. Emergency Physician, Kaohsiung Veterans General Hospital, Kaohsiung, TAIWAN
2. Emergency physician, Chang Gung Memorial Hospital, Keelung, TAIWAN
3. Emergency physician, National Taiwan University Hospital,, Taipei, TAIWAN
4. Emergency Physician, Chang Gung Memorial Hospital, Taoyuan, TAIWAN
5. Emergency physician, National Taiwan University Hospital, Taipei, TAIWAN

Keywords: social media, collaboration

Abstract :**Background:**

Due to diversity of emergency medicine (EM) specialty, training of EM residents in small country with small-scale training programs continues to be a big challenge. In Taiwan, there are 113 first year EM residents in 40 training programs in 2019. Averagely, 2 to 3 EM residents each year in every training program. Emergency Medicine Resident Network (EMRN) was launched by 3 voluntary attending physicians in December 5, 2015 to enhance resources sharing, networking between domestic and international EM residents. Organizing different kinds of on-line and off-line events makes EM residents more familiar with residents and physicians from other training programs, committee members of Taiwan Society of Emergency Medicine (TSEM) and nearby countries.

Methods:

EMRN was created as a Facebook group platform. Members can share topics about EM through it. In addition, video recording interview with EM physicians specialized in different fields, on-line young residents orientation and introducing international medical conference at scene were arranged. We also host diverse offline activities to facilitate networking, including EM specialty-related and recreational activities. EM specialty-related activities were resident lecture competition enhancing the ability of precise and efficient communication skills, Hong Kong and Taiwan EM Residents Exchange Forum augmenting connection and mutual learning both sides, Dine Around with famous EM physicians and attending international medical conferences, such as ACEP, EuSEM, SAEM. EMRN is currently operated by 5 attending physicians and 35 resident volunteers from 10 hospitals.

Results:

EMRN Facebook group has 3262 members from 31 countries including Taiwan, Hong Kong, United States, Malaysia, and Macau. There are 579 posts, 1669 comments, and 32386 likes in the past year. Serial EMRN interviews were accumulated to 24 videos on-line till now. We had our own YouTube Channel in August of 2018. Interview with EM physicians in the international medical conference, live broadcasting of EM residents lecture competition and Hong Kong and Taiwan EM Residents Exchange Forum, on-line orientation to first year resident and introduction of different subspecialties of EM were collected in EMRN Facebook group platform and also YouTube Channel, which owned 168 prescribers till now.

Taiwan EM residents lecture competition and Hong Kong and Taiwan EM Residents Exchange Forum were hold during TSEM Annual Conference and 3rd session will be hold in 2019. Due to mutual connection since 2018, there are increasing numbers of EM residents from Hong Kong and Macau who will attend TSEM Annual Conference and engage in point-of-care ultrasound game. EM residents from Taiwan will also join Scientific Symposium on Emergency Medicine and participate in the simulation competition in Hong Kong. TSEM and Hong Kong College of Emergency Medicine are continuously encouraging EM residents from both sides to enhance the networking, in which EMRN acts as an important bridge.

Discussion & Conclusions:

Current residents training is evolving to value networking, collaboration and resources sharing. In the past, small-scale EM training program had difficulties of full capacity of subspecialties. With the help of EMRN by hosting on-line and off-line activities through social media platform, mutual connection between domestic and international residents is practicable.

#18511 : Epidemiology of poisoned patients admitted to the emergency department during six-year period (2011-2016) in Korea: a multicenter based retrospective observational study

Authors:

HYUNMOOK LIM (1), KIM KYUNG HWAN (1), PARK JOONMIN (1), KIM SUNG HO (2)

1. DEPT OF EM, INJE UNIVERSITY ILSAN PAIK HOSPITAL, GOYANG, KOREA
2. DEPT OF EM, THE ARMED FORCES DAEJEON HOSPITAL, DAEJEON, KOREA

Keywords: Poisoning, Drug Overdose, Humans

Abstract :

Background: We aimed to investigate the epidemiologic characteristics of poisoned patients admitted to the emergency department (ED) and factors associated in-hospital mortality.

Methods: We included all poisoned patients except for death on arrival who visited the emergency centers registered in the Korean Emergency Department-based Injury In-depth Surveillance database during 2011-2016. Twenty-three emergency centers around the country were enrolled in the surveillance system. Demographic characteristics and factors regarding poisoning were gathered from the data. Then, we divided all included cases into two groups according to the intentionality and in-hospital mortality: 'non-intentional' versus 'intentional' and 'non-fatal' versus 'fatal'. The characteristics of the two groups were compared, and the factors associated with the in-hospital mortality were further investigated.

Result: A total of 38,441 patients was included during the study period. Females (54%) were more than males, and age of 40-64 (38%) and 20-39 (27%) accounted for more than half of patients included. Intentional poisoning accounted for 59% of all cases, and most common poisoning material was hypnotics/antipsychotics/antidepressants (29%). In 41% of all cases, admission to the wards was required, and in-hospital mortality occurred in 3% of all cases. Males and patients visited the ED via ambulance were less in 'non-intentional' group. Patients requiring ward admission were more in 'intentional' group. Artificial stuffs were poisoning material that showed the highest proportion of non-intentional poisoning. Males and patients visited the ED via ambulance had higher in-hospital mortality rate. Age group and poisoning material of highest in-hospital mortality were old group (≥ 65) (10%) and herbicide (13%), and intentional poisoning had higher in-hospital mortality rate. As a result of adjusting confounders, females had lower odds (OR= 0.7, 95% CI=0.6-0.8) and old age group (≥ 65) had higher odds compared to age group younger than 10 (OR= 27.6, 95% CI=8.7-87.1). Herbicide showed higher odds compared to painkillers (OR=7.6, 95% CI=4.0-14.4), and intentional poisoning had higher odds (OR=2.4, 95% CI=2.0-2.9).

Conclusion: Our results could be used as baseline data for prospective interventional studies investigating ways to reduce the incidence and severity of poisoning.

Trial Registration / Funding Information (only) :

This research was supported by a fund by Research of Korea Centers for Disease Control and Prevention.

#18517 : Initial fluid challenge guided by cardiac and lung ultrasound in sepsis-associated hypotension: prospective proof-of-concept study (echosepsis)**Authors:**

Quentin Le Bastard (1), François Javaudin (2), Idriss Arnaudet (3), Philippe Pes (3), Philippe Le Conte (4)

1. Urgences adultes, Hôtel Dieu, Nantes, FRANCE
2. Service des urgences, CHU Nantes, Nantes, FRANCE
3. Urgences, Hôtel Dieu, Nantes, FRANCE
4. Urgences, CHU Nantes, Nantes, FRANCE

Keywords: sepsis, fluid challenge, cardiac output, ultrasound

Abstract :**Background**

Initial fluid challenge (IFC) is required for the treatment of sepsis-associated hypotension or sepsis with lactate >4 mmol/L. The Surviving Sepsis Campaign (SSC) Bundle recommends a fixed volume of 30 ml/kg in less than three hours. However, the required initial volume is highly variable depending on sepsis's location and severity, hemodynamic status and presence of cardiac or pulmonary comorbidities. Inappropriate IFC can cause harms: if the needed volume is not infused, it can induce organ dysfunction such as renal failure, but excessive fluid administration can provoke pulmonary edema, leading to increased mortality. Our goal was to investigate an ultrasound-guided (US) strategy to determine the adequate IFC volume and compare it to the fixed 30ml/kg. It was designed to monitor both efficacy (serial measures of velocity-time integral (VTI) which is a key-feature of cardiac output) and tolerance (Lung Ultrasound (LUS)).

Methods

It was a prospective cohort study in a French Emergency Department between 1/1/18 and 1/3/19. Included patients were a convenience sample of patients older than 18 years with a sepsis (infection and qSoFA ≥ 2) and mean arterial pressure (MAP) < 65 mm Hg or lactates ≥ 4 mmol/L. Exclusion criteria were pregnancy, documented end-of-life and an initial B/B profile at LUS. This study was approved by ethic committee

During patient's care following the SSC guidelines, IFC was monitored:

- before initial infusion of crystalloid: VTI was measured in a five-cavities apical view using pulsed Doppler and a LUS was performed searching for a B/B profile suggesting pulmonary edema
- IFC was infused by 500 ml crystalloid increments with a VTI measurement and a LUS after each infusion
- IFC was stopped if rise of VTI was less than 10% (loss of volume-dependence) or occurrence of a B/B profile.

The main objective was the number of patients for whom the US-guided IFC volume difference versus 30 ml/kg was > 20%. Secondary objectives were the IFC median difference between US-guided and 30 ml/kg, delta VTI and MAP, respiratory tolerance expressed as delta SpO₂/fiO₂ before and after IFC. Data expressed as median [Q25 %-Q75%] were compared using paired Wilcoxon test.

Results

18 patients were included: 11 women and 7 men, mean age 69 + 13 years old. Main infectious sites were lungs, urinary tract, skin and bacteriemia. The IFC volume difference was > 20% in 14 patients (78% [95%CI 54-92%]). the US-guided volume was 1500 ml [1000-1500] while the corresponding recommended 30 ml/kg was 2205 ml [1800-2625] (median difference: -785 ml [-325 - -1340], p<0.001, Wilcoxon rank test). IFC was responsible for an increase of 10 mmHg [1-20] MAP (p=0.003) and of 4.5 cm [3-7] (24%, p<0.001) VTI, respectively. The respiratory tolerance was excellent with a delta SpO₂/fiO₂ 1 [0.99-1].

Discussion and conclusion

In this preliminary study, US allowed to individualize the IFC for both efficacy (24% cardiac output increase) and tolerance (no occurrence of lung edema). These results have to be confirmed in a broader study.

Trial Registration / Funding Information (only) :

no funding registration in progress

#18519 : Effectiveness of hypnosis for the prevention of anxiety during coronary angiography: The HypCor Study**Authors:**

Nazmine Guler (1), François Braun (2), Sandrine Weber (2), Christophe Goetz (3), Khalife Khalife (4), Charles Gentilhomme (5)

1. Emergency, Centre hospitalier régionale Metz Thionville , Metz, FRANCE
2. Emergency Department , Regional Hospital Metz-Thionville, Metz , FRANCE
3. clinical research department, Regional Hospital Metz-Thionville, Metz , FRANCE
4. Cardiology department , Regional Hospital Metz-Thionville, Metz , FRANCE
5. Psychiatry Department, Sarreguemines Specialized Hospital Center, Sarreguemines, FRANCE

Keywords: Hypnosis Emergency coronary angiography anxiety

Abstract :**Abstract**

Background – Coronary angiography is the gold standard for the diagnosis of coronary artery disease. This procedure is nevertheless a source of anxiety given the inconvenience caused by its invasiveness but also due to the consequences linked to the discovery of potential diseases.

Aim - The aim of this study was to determine the effectiveness of hypnosis on reducing patient anxiety prior to coronary angiography.

Methods – A total of 169 patients with non-urgent indications of coronary angiography and no history of prior coronary angiography were randomized to a Hypnosis or Control group. Patients in the Hypnosis group underwent a hypnosis session with posthypnotic suggestions in self hypnosis, while those in the control group had a conversational interview with the hypnotherapist. The primary endpoint was the level of anxiety prior to the exam assessed by the Spielberger State-Trait Anxiety Inventory (STAI-Y A).

Results - Performing a hypnosis session did not translate into a significant decrease in anxiety prior to the procedure. The use of midazolam was lower (5% in the Hypnosis group versus 12%, $p=0.05$). Systolic blood pressure (SBP) was significantly lower before the examination ($p = 0.01$). There was no adverse effect secondary to hypnosis. There was no statistically significant difference between the 2 groups for the occurrence of complications due to the procedure.

Conclusion - In the present study, performing a hypnosis session upstream of a coronary angiography, with suggestions in self-hypnosis to be performed during the procedure, did not reduce the state anxiety measured immediately before the intervention. In contrast, a significant reduction in SBP was observed in the Hypnosis group. There appears to be a possible reduction in the prescription of anxiolytics through hypnosis, although the latter necessitates confirmation in a larger-scale study.

Trial Registration / Funding Information (only) :

Study Identification Unique Protocol ID: 2016-02-CHRMT Brief Title: Hypnosis Efficacy for the Prevention of Anxiety During a Coronary Angiography (HypCor) Sponsor: Centre Hospitalier Régional Metz-Thionville Review Board: Approval Status: Approved Approval Number: 16.03.01 Board Name: CPP Board Affiliation: France Phone: 03 83 15 43 24 Email: cppest.3@chu-nancy.fr Study Status Record Verification: March 2016 Overall Status: Recruiting Study Start: March 2016 Primary Completion: June 2017 [Anticipated] Study Completion: November 2017 [Anticipated]

#18520 : Adding lung ultrasound to standard diagnosis procedure for the diagnosis of community-acquired pneumonia in the emergency department: prospective multicenter observational study (echopac)**Authors:**

François Javaudin (1), Nicolas Marjanovic (2), Hugo de Carvalho (3), Benjamin Gaborit (4), Estelle Boucher (5), Denis Haroche (6), Philippe Le Conte (7)

1. Service des urgences, CHU Nantes, Nantes, FRANCE
2. Urgences, CHU de Poitiers, Poitiers, FRANCE
3. Urgences adultes, Hôtel Dieu, Nantes, FRANCE
4. Infectious Disease Department, Centre Hospitalier Univesitaire de Nantes, Nantes, FRANCE
5. Urgences, Centre Hospitalier de Saint-Nazaire, Saint-Nazaire, FRANCE
6. Urgences, CHD La Roche sur Yon, La Roche sur Yon, FRANCE
7. Urgences, CHU Nantes, Nantes, FRANCE

Keywords: pneumonia, ultrasound, diagnosis

Abstract :**Background**

The diagnosis of community-acquired pneumonia (CAP) in the Emergency Department (ED) is often difficult due to limitations of clinical examination, chest X-ray and laboratory tests. A recent study showed that computerized tomography (CT) scan modified the clinical probability of CAP in 58% of the cases. However, CT scan is not applicable for all patients with suspected CAP in the ED. Thus, our goal was to investigate another tool, early Lung Ultrasound (LUS), to improve CAP diagnosis, by accessing changes in diagnostic probability and antibiotic initiation induced by LUS.

Methods

It was a prospective observational study in 4 French ED between 8/11/2016 and 31/12/2018. Included patients were a convenience sample of patients older than 18 years with a suspicion of CAP before medical exam. Exclusion criteria were documented palliative care or the need of immediate intensive care.

After informed consent approval and usual diagnosis procedure (UDP) (clinical, radiological and biology), the Emergency Physician established a CAP probability using a Likert scale (definite, probable, possible, excluded) and intention for antibiotics treatment initiation. A LUS was then performed, another probability (LUSP) for CAP diagnosis and treatment initiation was established. An adjudication committee established the final probability of CAP (COMP) at D28.

The main objective was the concordance rate between LUS and UDP probability according to COMP probability. Secondary objectives were probability changes induced by LUS and antibiotics changes. Categorical data expressed as percentage [95% confidence interval] were compared with Mac Nemar test.

The study was approved by the ethical committee and registered on clinicaltrial.gov (NCT03411824). There was no funding. For a probability concordance of 55% before LUS and 80% after with alpha 0.05 and beta 0.10, the required number of patients was 144.

Results

150 patients were recruited, two secondarily excluded because of wrong identification, leaving 148 analyzed patients: 70 women and 78 men, mean age 72 ± 18 years old. UDP probability was definite in 34 patients (23%), probable in 52 (35%), possible in 56 (38%) and excluded in 6 (4%). LUS induced a probability modification in 109 patients (73% [66-80%]). LUS probability was definite in 93 patients (63%), probable in 15 (10%), possible in 9 (6%) and excluded in 31 (21%). 82 of these modifications (77% [68-84%]) were in accordance with the adjudication committee. COMP probability was definite in 81 patients (55%), probable in 16 (11%), possible in 12 (8%) and excluded in 39 (26%). When compared to COMP probability, 39 out of 148 UDP probabilities were correct (27% [20-35]) while 109 LUSP were correct (77% [71-84]), $p < 10^{-4}$. There were 45 modifications in antibiotic prescription (30% [24-38%]): 21 were prescribed after LUS while 24 were discontinued.

Discussion and conclusion

In this population comparable to other studies in literature, LUS was a powerful tool to improve the diagnosis accuracy. In particular, it decreased the diagnostic uncertainty (possible and probable probability from 73 to 16% after LUS).

Trial Registration / Funding Information (only) :

clinicaltrial.gov (NCT03411824) no funding

#18522 : Attitudes toward intravenous vs. intraosseous access during resuscitation**Authors:**

Szarpak Lukasz (1), Gorczyca Damian (1), Smereka Jacek (2), Evrin Togay (3), Katipoglu Burak (3)

1. Faculty of Medicine, Lazarski University, Warsaw, POLAND

2. Department of Emergency Medical Service, Wroclaw Medical University, Wroclaw, POLAND

3. Department of Emergency Medicine, Ufuk University Medical Faculty, Dr Ridvan Ege Education and Research Hospital, Ankara, TURKEY

Keywords: intraosseous access; cardiopulmonary resuscitation; attitudes; emergency procedure

Abstract :**Background:**

Getting intraosseous access is one of the basic elements of advanced resuscitation procedures. The European Resuscitation Council guidelines for non-shockable rhythms recommend that adrenaline should be administered as soon as possible. Therefore, there should be no multiple attempts to obtain intravenous access, and the alternative may be intraosseous access.

The aim of the study was to evaluate the attitudes of medical students towards obtaining intraosseous access in cardiopulmonary resuscitation settings.

Methods:

The survey was conducted as the questionnaire-based study. The questionnaire was distributed among 100 first year medical students taking part in intravascular access trainings. All participants had theoretical and simulation experience in the field of intravenous and intraosseous access. The questionnaire included questions on the attitudes towards the use of intravenous and intraosseous access in cardiopulmonary resuscitation conditions. All study participants expressed their voluntary willingness to participate in the study and the questionnaire was anonymous.

Results:

The return rate of fully completed questionnaires was 62% (n=62).

100% of participants believe that intraosseous access should be routinely used during cardiopulmonary resuscitation of pediatric patients as a basic method of obtaining intravascular access. 96.8% indicate intraosseous access as a routine method of intravascular access for adult resuscitation. As the preferred intraosseous access site, subjects indicate tibia (100%), humerus head (33.9%) and sternum (11.3%). 100% of survey participants believe that trainings in the field of intraosseous access should be obligatory and systematically repeated among medical personnel.

Discussion and Conclusions:

The preferred method of intravascular access in cardiopulmonary resuscitation settings is intraosseous access. The proximal part of the tibia is the preferred method of intraosseous access. Mandatory training in the field of intraosseous access may result in faster intravascular access during resuscitation and thus in faster administration of drugs and implementation of fluid resuscitation.

Trial Registration / Funding Information (only) :

none

#18524 : Obstacles and opportunities for applying an early cardiopulmonary resuscitation and defibrillation by bystanders in case of cardiac arrest in prehospital conditions**Authors:**

Desislava Katelieva (1), Lora Georgieva (2)

1. NGO, BEMSA, Sofia, BULGARIA

2. Medical University of Varna, Department of Social Medicine and Healthcare Organization, Varna, BULGARIA

Keywords: cardiac arrest, cardiopulmonary resuscitation, bystanders, defibrillation

Abstract :

Background: According to the Bulgarian legislation, every citizen, who witnessed a patient in life-threatening condition, must provide aid. There are 2500–3000 cases of documented cardiopulmonary resuscitation (CPR) per year, administered by emergency medical teams in prehospital conditions. Only 4–6% of those CPRs are successful, due to the lack of early CPR and defibrillation, administered by bystanders before the arrival of emergency teams. This lack of action of the bystanders reduces the chances for survival of the patients. In order to identify the reasons behind this inaction, a study was carried out among Bulgarian physicians

Methods: A questionnaire was uploaded on a specialized medical website in October 2018, and 104 physicians took part in the study. Data were processed by descriptive statistics.

Results: The respondents believe that obstacles for applying early CPR by bystanders are: lack of training for people without medical education (93.3%), bystander's fear for their own and patient's safety (64.5%), lack of phone instruction for CPR by the dispatchers of the emergency hotline (62.4%). The obstacles for introduction of early defibrillation comprise: lack of legislative regulations and introduction of automatic defibrillators in public places (60.5%), fear of defibrillator abuse (16.3%) and causing damage to the patient (22.1%). The respondents indicate the following options for administering of early CPR and defibrillation by bystanders: training (78.8%), media campaigns for promotion (77.9%), legislative regulation of CPR (68.3%) and defibrillation (61.5%), introduction of automatic defibrillators giving commands in Bulgarian and protected against abuse (32.7%). Almost all participants in the study showed readiness to provide their personal contact information, in case they happen to be near a patient in clinical death, when not on duty. More than half of them (62.5%) agree that this should be regulated by a law.

Discussion & Conclusions: The Bulgarian legislation still lacks a regulation, concerning the extent of help for patients with cardiac arrest in prehospital conditions, provided by bystanders in case of life-threatening condition. A normative change is required as well as training programs for citizens aimed at administering early CPR and defibrillation.

#18525 : Analysis of emergency teams' actions during catastrophes and natural disasters in Bulgaria for the period 2014-2019

Authors:

Desislava Katelieva (1), Lora Georgieva (2)

1. NGO, BEMSA, Sofia, BULGARIA

2. Medical University of Varna, Department of Social Medicine and Healthcare Organization, Varna, BULGARIA

Keywords: Road accidents, natural disasters, emergency teams

Abstract :

Background: Road accidents and natural disasters in Bulgaria have led to huge losses, including material casualties and many injured or dead people, for the last few years. The purpose of this study is to analyze the way of providing medical aid during accidents with large number of injured, in order to optimize the organization and minimize the risk for both citizens and emergency teams.

Methods: Analysis was conducted, concerning the circumstances and methods of providing medical aid during the largest catastrophes and disasters in Bulgaria for the period 2014-2019: flooding in the residential district Asparuhovo in the town of Varna in 2014 (150 injured, 13 dead); train crash in the village of Hitrino with spilling and explosion of propane butane in 2016 (29 injured, 7 dead), bus crash near the town of Svoге in 2018 (18 injured, 20 dead) and four chain car crashes in 2015, 2017, 2018 and 2019.

Results: Bystanders of all incidents tell, that until the arrival of the emergency teams, part of them have acted without knowing whether it was right, while another part have just observed the incident, without providing help. In those cases, when the rescue teams have arrived before the medical teams, the medical teams' safety is guaranteed as in the case of the Asparuhovo flooding. However during car crashes, medical teams often arrive before other emergency services and underestimate the rules for personal safety. During the train crash in Hitrino, medical teams arrive first and provide aid to injured, surrounded by fires, caused by a leak of propane butane gas and propylene. During the chain car crash in the Vitinya tunnel, including 50 vehicles, the ambulances enter the tunnel, disregarding the risk of eventual explosion, which could lead to a tunnel collapse. The largest delay of emergency teams occurs during the bus crash near Svoге – 40 minutes. The reasons behind the delay are the remoteness, lack of free teams and traffic jam. During the evacuation almost all injured are hospitalized in one hospital, only a few allocated to different facilities.

Discussion and Conclusions: The following issues can be observed when providing emergency medical aid: lack of instructions for the bystanders by the emergency dispatchers until the arrival of the emergency teams; delays of the teams due to remoteness, bad weather conditions and traffic jams; endangering of the teams at the incident scene; overloading of a single hospital with injured over short time. Emergency dispatchers should be in constant contact with bystanders in order to receive trustworthy information of the number of injured and their condition until the arrival of the medical teams. The medical teams should follow the personal safety rules and should not enter a dangerous zone, before the scene is secured by the other emergency services. Injured should be transported to several hospitals, in order to optimize the quality and speed of the provided medical aid.

#18526 : Problems with phone medical triage protocols' application by medical dispatchers in Bulgaria

Authors:

Desislava Katelieva (1), Lora Georgieva (2)

1. NGO, BEMSA, Sofia, BULGARIA

2. Medical University of Varna, Department of Social Medicine and Healthcare Organization, Varna, BULGARIA

Keywords: medical dispatchers, triage, protocols

Abstract :

Background: In 2015 the Bulgarian Ministry of Health affirmed new Emergency Medicine standard and introduced the application of phone triage by medical dispatchers. In November 2016 it affirmed protocols for telecommunication and prioritized team triage. The purpose of survey is to reveal to what extent emergency medical dispatchers are acquainted with the protocols and what problems they face, when applying them.

Methods: A survey was carried out among 453 medical dispatchers from 26 Centers for emergency medical aid in Bulgaria in the end of 2018. The information was gathered by a specially designed questionnaire, and data were processed by descriptive statistics.

Results: The results show that 98.9% of the medical dispatchers are acquainted with the protocols and 98.4% have access to them at their working place. The majority of the dispatchers (85.4%) stated that they triage the incoming emergency calls, but only 48.8% do this using protocols during every call; 44.2% use triage protocols occasionally, while 7% do not use them at all. In cases of code red 46.3% of the dispatchers give instructions to bystanders until the arrival of the emergency teams, 49.2% do this occasionally, while 4.4% do not do this at all. After clarifying the reasons for not using the protocols for phone triage and the instructions until the arrival of the emergency team, it was revealed that only 1.1% of the dispatchers have not been trained to work with the protocols, while 26% believed that they could triage without protocols. The huge percent of those, who think they could triage without protocols, could be explained by the fact that they are physicians, medical assistants and nurses with long experience in the system of emergency care. According to 62.7% of the respondents the phone triage protocols are suitable for work, but 16.3% believe that they are practically inapplicable. In addition, 48.3% say that citizens, who signalize for help, refuse to answer the questions. Taking into account that half of the dispatchers apply triage protocols occasionally or never, it is highly probable that they are not convinced enough in the effectiveness of their application.

Discussion &Conclusions: The results confirm a serious opposition against the application of phone triage with protocols by both medical dispatchers and citizens, who call for emergency aid. Due to the fact, that phone triage protocols are a good practice, affirmed for decades around the world, an informative campaign is required, in order to clarify the benefits of the protocols to both dispatchers and those, seeking medical aid. For the dispatchers the protocols provide professional and legal protection against omissions and mistakes, while for the patients it ensures equal access to medical assistance from the moment of the call. The doubts of the dispatchers can be overcome by additional training. According to the medical standard, protocols are subject to constant updates, thus improving their applicability.

#18527 : Patterns of abuse in elderly – an underestimated problem at the emergency department**Authors:**

Karin Erwander (1), Kjell Ivarsson (2)

1. Department of Clinical Sciences, Lund University, Göteborg, SWEDEN

2. Department of Clinical Sciences, Lund University, Jönköping, SWEDEN

Keywords: Elderly abuse, frailty, elder mistreatment

Abstract :

Background: One of the first articles concerning elder abuse was published in 1975. Since then there has been a growing awareness concerning the topic, but there is still a big gap between research and how these findings should be implemented in clinical practice. Medical settings, such as an emergency department (ED), have a potential to be a good location to identify elder abuse because many elderly individuals that have been exposed to abuse need medical expertise to treat their injuries. The main objective of this study was to examine frequency, risk factors and injury patterns of elderly individuals who received care at an emergency department after being a victim to physical abuse.

Methods: The study was conducted as a descriptive, retrospective study where data were collected from medical records during 2011-2012 at Helsingborg General Hospital in the south of Sweden. All patients aged 65 years and above that was seen in the ED were identified and then all patients with the main complaint abuse were included in the study. After all cases of abuse against elderly were identified the medical records for these patients were examined thoroughly to abstract data. Demographic variables such as age, gender and marital status were collected from medical records. Other known risk factors such as psychiatric illness, dementia, stroke and alcohol abuse were registered. Place of injury, if the victim knew the perpetrator, injury patterns and body location, photo documentation of the injuries and if the assault was reported to the police was also abstracted.

Results: During the study period a total of 39,312 patients ≥ 65 years received care at the ED of Helsingborg General Hospital. Out of those 21 cases of elderly abuse was identified. Several patients had numerous injuries allocated to different body locations. Haematomas were the most frequently documented injury and the head and neck region was the region mostly affected. Some patients showed old scars and haematomas of different ages during the physical examination. Found risk factors were excessive alcohol consumption and comorbidities.

None of the victims had any documented follow-up plan related to the assault.

Conclusion: Statistics from Sweden reports that 13-16 % of all elderly have been victims to some kind of abuse. Even though there has been an increase in research concerning abuse against elderly in the last decades, challenges to identify and intervene against maltreated elderly remains. A large material was used for this study still very few cases of elder abuse was identified, part of this low number can be due to the inclusion criteria and more research is needed. Still there is not enough knowledge concerning elder abuse in Sweden and therefore medical staff face serious problems to recognize and treat these patients at an ED.

Next important step to improve the situation for this patient group would be to introduce a screening tool to identify more persons at risk and develop a follow-up program so that these patients are not left destitute.

#18529 : Nasogastric rehydration in children with moderate dehydration**Authors:**

Muhammad Qureshi (1), Taimur Butt (1)

1. Emergency Medicine, King Faisal Specialist Hospital & Research Center, Riyadh, SAUDI ARABIA

Keywords: Nasogastric rehydration

Abstract :

Background: Worldwide, 12% of deaths among children less than five years of age are due to diarrhoea. Diarrhoea accounts for 12 to 15 per 1000 admissions of children under the age of 5 years in England.

Methods & Results: We did a literature review to check the safety & efficacy of Nasogastric rehydration (NGT) in children with moderate rehydration 5-10% (commonly due to gastroenteritis) compared with Intravenous Rehydration (IVT) within the Emergency department setting. Four Randomised controlled trials (RCTs) out of the twenty fit our inclusion criteria, which directly compared the NGT with IVT. Altogether 401 (54%) children received IVT and 319 (43%) received NGT. Children from 2 months to 18 yrs of age were included in the studies. All studies used oral rehydration solution containing glucose, sodium, potassium and chloride. The outcomes of interest were failure of NGT, amount of fluid intake, weight gain, duration of hospital stay and adverse effects. All RCTs looked at failure as one of their outcomes which was defined as a need to start IVT. Two out of 319 children (0.6%) in NGT group failed. The failures were secondary to persistent vomiting. None of the studies found a statistically significant difference in failure to rehydrate with NGT. Total fluid intake in NGT group was statistically significant at 6 hrs (823mls vs. 621mls) and 24 hrs (846mls vs. 680mls) in two studies. Weight gain at 12hrs (285g vs. 103g) and 24 hrs (8.9% vs. 7.2% of body weight) was statistically significant in NGT group in two studies. Children with NGT spent less time in hospital (2.8d vs. 1.8 d). Cost per patient was also statistically significant (\$525.90 vs. \$642.64) in NGT group. Complications like abdominal distension was found in 4 out of 319 (1.2%) children in NGT group. Twelve out of 401 (2.9%) IVT children developed phlebitis.

We also conducted a questionnaire survey of the UK and Kingdom of Saudi Arabia (KSA) Emergency Medicine physicians to check their current practice in this area. Out of 160 UK trainees/consultants only 89 (56%) replied. Ninety five (61%) out of 155 KSA Emergency practitioners replied. 86 (96%) UK emergency practitioners wanted to start oral fluids as the first step for rehydration compared to nine (8%) KSA Emergency physicians. 80(96%) UK practitioners resorted to IV fluid therapy when oral rehydration (without NG tube) was not successful compared to 100% of KSA practitioners (9/9 practitioners). 30 (34%) UK practitioners wanted to start NGT if the IV line was not established compared to none in the KSA group. There was also a significant difference in methods to confirm the presence of nasogastric tube, types of solutions given through it and reasons to stop its use given by the UK physicians. The reasons of lack of use of NGT were mainly lack of training & parental preference

Conclusions: NGT has equivalent safety and efficacy to IVT in mild to moderate dehydration. NGT is a very important and underused therapy in the management of children with moderate dehydration secondary to gastroenteritis within an emergency setting.

Trial Registration / Funding Information (only) :

none

#18530 : Thrombolysis during resuscitation for out-of-hospital cardiac arrest caused by pulmonary embolism increases 30-day survival: findings from the French National Cardiac Arrest Registry**Authors:**

François Javaudin (1), Jean-Baptiste Lascarrou (2), Quentin Le Bastard (3), Quentin Bourry (4), Hugo De Carvalho (4), Philippe Le Conte (3), Joséphine Escutnaire (5), Hervé Hubert (5), Emmanuel Montassier (3), Brice Leclere (6)

1. Urgences - SAMU, CHU Nantes, NANTES, FRANCE
2. Medical Intensive Care Unit, CHU Nantes, Nantes, FRANCE
3. Urgences - SAMU, CHU Nantes, Nantes, FRANCE
4. Department of Emergency Medicine, CHU Nantes, Nantes, FRANCE
5. Public Health Department EA 2694, University of Lille, Lille, FRANCE
6. Service d'Évaluation Médicale et d'Épidémiologie, CHU Nantes, Nantes, FRANCE

Keywords: Out-of-hospital cardiac arrest, Thrombolytic therapy, Pulmonary embolism, Cardiopulmonary resuscitation

Abstract :

Background: Pulmonary embolism (PE) represents 2% to 13% of all causes of out-of-hospital cardiac arrest (OHCA) and is associated with extremely unfavorable prognosis. In PE-related OHCA, inconsistent data showed that thrombolysis during cardiopulmonary resuscitation (CPR) may favor survival.

Methods: It was a retrospective, observational, multicenter study from the French National OHCA. All adult OHCA, managed by a mobile intensive care unit, and with a diagnosis of pulmonary embolism confirmed on hospital admission were included. PE was diagnosed on hospital admission by computed tomography pulmonary angiography (CTPA) (definite PE) or echocardiogram (probable PE). We excluded all other causes of OHCA and patients who had ROSC prior to mobile intensive care unit management. Patients were classified in two groups: those who received thrombolytic therapy during cardiopulmonary resuscitation and those who did not. The primary end point was day-30 survival in a weighted population. In order to obtain unbiased estimations of the average treatment effects, we used inverse probability of treatment weighting (IPTW). This method was performed in two steps: first, an estimation of the propensity score of treatment (thrombolysis during cardiopulmonary resuscitation) with a logistic model, and then an estimation of the effect of treatment on 30-day survival, weighted on the propensity score. The present study was approved by the French Advisory Committee on Information Processing in Health Research (CCTIRS) and the French National Data Protection Commission. It was approved as a medical assessment registry without requirement for patient consent.

Results: From July 2011 to March 2018, of the 14,253 patients admitted to the hospitals, 328 had a final diagnosis of PE and 246 were included in the analysis. In the group that received thrombolysis during resuscitation (n=58), 14 received alteplase (24%), 43 tenecteplase (74%) and 1 streptokinase (2%). Thirty-day survival was higher in the thrombolysis group than in the control group (16% vs 6%, $P=0.005$; adjusted log-rank test) but the good neurological outcome was no significantly different (10% vs 5%; adjusted relative risk = 1.97 CI95[0.70–5.56]). Median duration of stay in the intensive care unit (ICU) was 1 (0–5) day in the thrombolysis group and 1 (0–3) day in the control group ($P=0.23$). Mortality on day 0 (i.e., day of the OHCA) was 34% in the thrombolysis group and 37% in the control group ($P = 0.76$). Among all survivors at day 30, the median time until ICU discharge was 10 (4–21) days. Subjects in the thrombolysis group would not die of hemorrhage any more than those in the control group (6% vs 5%; $P = 0.73$). On the other hand, irreversible coma appeared slightly less frequent as a cause of death in the thrombolysis group (2% vs 11%; $P = 0.05$).

Conclusions: In OHCA patients with confirmed PE and admitted with recuperation of spontaneous circulation in the hospital, there was significantly higher 30-day survival in those who received thrombolysis during CPR compared with patients who did not receive thrombolysis. Randomized controlled trials are needed to define the role of thrombolysis in the management of suspected PE-related OHCA.

Trial Registration / Funding Information (only) :

The RéAC registry was supported by the French Society of Emergency Medicine (SFMU), a patient foundation – Fédération Française de Cardiologie, the Mutuelle Générale de l'Éducation Nationale (MGEN), the University of Lille and the Institute of Health Engineering of Lille. The authors declare that the funding sources had no role in the conduct, analysis, interpretation or writing of this manuscript.

#18531 : Outcomes following presentation with concussion in the paediatric emergency department: missed cases of post-concussion syndrome**Authors:**

Laura Harrison (1), Lorcan Duane (1)

1. Paediatric Emergency Department, Royal Manchester Children's Hospital, Manchester, UK

Abstract :**Background:**

1 in 5 children will sustain a traumatic brain injury by the age of 16 years, with 90% of these being concussion. Approximately 4 million children present to emergency departments (EDs) worldwide each year with concussion, which is estimated to represent only 12% of cases. The majority recover to baseline function within 4 weeks; however up to 74% suffer from persisting symptoms beyond 4 weeks, and up to 29% have ongoing symptoms at 3 months, which is defined as post-concussion syndrome (PCS). There is a lack of clear, consistent guidelines in the UK about assessment, management, discharge advice and follow-up of children with concussion. In our Paediatric Emergency department (PED) there was no follow-up arranged for any patients and no patient information leaflet for concussion.

Objectives:

This project was a service evaluation to analyse how we could better treat children with concussion in our PED. The aim was to identify any patients seen in the PED in the last 15 months with concussion suffering from ongoing symptoms, who would benefit from follow-up. Additional aims were to create an advice leaflet about concussion to be given to patients and their parents, and to make recommendations to the department regarding systematic follow-up for future patients with concussion.

Methods:

A search was conducted for patients aged 16 or under, discharged from the PED between 1 and 15 months ago, with a diagnosis of concussion. Two surveys were designed, one aimed at children aged 3 years and over and another for those less than 3 years. Their medical notes were reviewed and a telephone survey of parents was conducted asking about any current symptoms of post-concussion syndrome that their child was suffering from.

Results:

The search yielded 121 patients. 68 of 121 parents of patients were able to be contacted. Of these, 33 out of 68 reported symptoms of PCS (48.53%) of new onset since their head injury, lasting longer than 4 weeks. School-aged children (5-12 years) were most commonly affected. There was an increased likelihood of ongoing symptoms with decreased time since injury. There was also an increased likelihood of ongoing symptoms with increased number of symptoms on first presentation to the emergency department. The most common post-concussive symptoms reported were headaches, and problems with temper and impulsiveness.

Conclusion:

Concussion management was found to be an area for improvement in this PED. A letter was written to the 33 children with PCS symptoms to arrange a follow-up outpatient appointment, and a new concussion leaflet for parents and patients was created to ensure they had adequate safety-netting and management after discharge, including return to school and sports advice, and that follow-up was sought in the case of ongoing symptoms. Recommendations were made about the importance of starting a concussion clinic to ensure systematic follow-up of all children with a diagnosis of concussion.

#18532 : Limp in childhood: are we missing significant diagnoses?**Authors:**

Laura Harrison (1), Kate Hooper (1), Sahana Rao (1)

1. Paediatrics, Oxford University Hospitals, Oxford, UK

Abstract :

Background:

Limp is a common presentation in children, especially in those aged 1-4 years old, and accounts for up to 5% of emergency department visits in children. It is difficult to clinically differentiate common, benign, self-limiting conditions like transient synovitis, from rarer, more serious conditions, such as septic arthritis, osteomyelitis, malignancy, non-accidental injury, Perthes, and SUFE (slipped upper femoral epiphysis). Further difficulties in diagnosis are caused by the fact that children struggle to localise pain, pain may be referred from another joint, history of trauma may be a red herring, and treatment with antibiotics may alter presentation of an infected joint/bone. It is therefore imperative to investigate and manage appropriately and follow-up to ensure resolution of symptoms in those with a benign, self-limiting diagnosis. Currently, there are no national guidelines for the investigation and management of limp in children in the UK.

Objective:

The aim of this audit was to see how many children presenting with limp to the Children's Clinical Decision Unit (a unit for paediatric emergency admissions at Oxford University Hospitals) were being correctly investigated, managed and followed-up according to local guidelines. Additional aims were to identify if any significant diagnoses were missed, and to revise the local guidelines to ensure they were up to date and correctly reflected best practice.

Methods:

A search was done for patients presenting with limp to our Children's Clinical Decision Unit within the last 6 months. Their electronic medical records were then reviewed for details of their admission, investigations, diagnosis, management, and follow-up. These were compared to local guidelines at Oxford University Hospitals. The records were also reviewed for any re-presentations and missed diagnoses.

Results:

The search found 106 affected patients. According to local guidelines, all patients should have had blood tests (full blood count, blood film, C-reactive protein, erythrocyte sedimentation rate and blood cultures) and an x-ray of the affected joint (the guideline details the specific views required). 33 of the 106 patients had the correct initial investigations. Those with 2 or more risk factors for septic arthritis should have had an ultrasound in addition and this occurred in 10 of 15 patients. The most common diagnosis was transient synovitis (45 out of 106) and there were 2 cases of osteomyelitis and 1 case of septic arthritis. There were 4 missed diagnoses including 1 case of osteomyelitis.

Conclusion:

Adherence to limp guidelines was poor and as a result significant pathology was missed. Recommendations included increased education of doctors in training about the limp assessment management guidelines, creation of a limp proforma and reinforcing mandatory telephone reviews after discharge. Further ongoing work includes reviewing and updating the limp guidelines.

#18533 : Maximum value of end tidal carbon dioxide (ETCO₂) during resuscitation is highly discriminant for a return of spontaneous circulation in traumatic out-of-hospital cardiac arrests (OHCA)

Authors:

François Javaudin (1), Stanislas Her (2), Quentin Le Bastard (3), Hugo De Carvalho (4), Joséphine Escutnaire (5), Hervé Hubert (5), Emmanuel Montassier (3), Jean-Baptiste Lascarrou (6), Brice Leclere (7)

1. Urgences - SAMU, CHU Nantes, NANTES, FRANCE
2. Department of Emergency Medicine, Departmental Hospital of La Roche sur Yon, Nantes, FRANCE
3. Urgences - SAMU, CHU Nantes, Nantes, FRANCE
4. Department of Emergency Medicine, CHU Nantes, Nantes, FRANCE
5. Public Health Department EA 2694, University of Lille, Lille, FRANCE
6. Medical Intensive Care Unit, CHU Nantes, Nantes, FRANCE
7. Service d'Évaluation Médicale et d'Épidémiologie, CHU Nantes, Nantes, FRANCE

Keywords: Out-of-hospital cardiac arrest, Cardiopulmonary resuscitation, Capnography, Traumatology, Return of spontaneous circulation

Abstract :

Introduction: The value of end tidal carbon dioxide (ETCO₂) during the resuscitation of an out-of-hospital cardiac arrest (OHCA) has an increasingly well-known prognostic value. Nevertheless, few studies have investigated its maximum value in different suspected aetiologies.

Method: It was a retrospective, observational, multicenter study from the French OHCA Registry. All adult OHCA, managed by a mobile intensive care unit (MICU), and with a known maximum value of ETCO₂ were included. The primary end point was to determine the Area Under the Receiver Operating Characteristic curve (AUROC) of the maximum value of ETCO₂ during resuscitation for the return of spontaneous circulation (ROSC) achievement.

Results: Of the 53,048 eligible subjects from July 2011 to June 2018, ETCO₂ was known in 32,249 subjects (61%). Among them, there were 9.2% of traumatic OHCA, 37.7% of suspected cardiac aetiology and 16.4% of suspected respiratory aetiology. The maximum value of ETCO₂ was lower in case of traumatic aetiology (mean=21.3 mmHg ± 18.3) than in suspected cardiac aetiology (28.0 mmHg ± 17.4; p<0.001) and suspected respiratory aetiology (31.2 mmHg ± 21.7; p<0.001). Nevertheless, the AUROC of maximum ETCO₂ value to achieved ROSC was higher in traumatic aetiology (0.887; 95CI[0.875–0.898]) than in suspected cardiac aetiology (0.772; 95CI[0.765–0.780]; p<0.001) and suspected respiratory aetiology (0.802; 95CI[0.791–0.812]; p<0.001). In traumatic group, the probability of ROSC was higher than 50% for ETCO₂ values greater than 29 mm Hg and there were 1.0% (n = 31) of subjects who achieved ROSC and 0.0% (n = 0) of d-30 survivors when ETCO₂ were < 10 mmHg. Using the Youden index, the optimum cut-off thresholds were 19 mm Hg for traumatic aetiology, the sensitivity was 85.7%, specificity 77.7%, positive predictive value 61.8% and negative predictive value 93.1%.

Conclusion: The maximum value of ETCO₂ during OHCA resuscitation was strongly associated to ROSC, especially in case of traumatic cause. It seems very useful to monitor this value during resuscitation to manage the resuscitation of a traumatic OHCA.

Trial Registration / Funding Information (only) :

The RéAC registry was supported by the French Society of Emergency Medicine (SFMU), a patient foundation – Fédération Française de Cardiologie, the Mutuelle Générale de l'Éducation Nationale (MGEN), the University of Lille and the Institute of Health Engineering of Lille. The authors declare that the funding sources had no role in the conduct, analysis, interpretation or writing of this abstract.

#18534 : Assessment of rewarming methods in unplanned out-of-hospital births from a prospective cohort**Authors:**

François Javaudin (1), Mélodie Roche (2), Lucile Trutt (3), Isabelle Bunker (4), Valérie Hamel (5), Sybille Goddet (6), François Templier (7), Christine Potiron (8), Quentin Le Bastard (9), Philippe Pes (9), Gilles Bagou (10), Jean-Louis Chabernaud (11), Emmanuel Montassier (9), Brice Leclere (12)

1. Urgences - SAMU, CHU Nantes, NANTES, FRANCE
2. Department of Emergency Medicine, Departmental Hospital of La Roche sur Yon, La Roche sur Yon, FRANCE
3. Department of Medical Evaluation and Epidemiology, CHU Nantes, Nantes, FRANCE
4. Pediatric Intensive Care Unit, CHU Nantes, Nantes, FRANCE
5. Department of Emergency Medicine, CHU Toulouse, Toulouse, FRANCE
6. Department of Emergency Medicine, CHU Dijon, Dijon, FRANCE
7. Department of Emergency Medicine, CHU Angers, Angers, FRANCE
8. Department of Emergency Medicine, CHU Nantes, Nantes, FRANCE
9. Urgences - SAMU, CHU Nantes, Nantes, FRANCE
10. Department of Emergency Medicine, CHU Lyon, Lyon, FRANCE
11. Neonatal Emergency Transport Team, SAMU 92, Neonatal Intensive Care Unit, A. Beclere Clamart CHU Paris, Paris, FRANCE
12. Service d'Évaluation Médicale et d'Épidémiologie, CHU Nantes, Nantes, FRANCE

Keywords: unplanned out-of-hospital births, hypothermia, rewarming methods

Abstract :

Background and Objectives: Mobile intensive care units frequently manage unplanned out-of-hospital births (UOHB). Rewarming methods during pre-hospital management of UOHB have not yet been compared. The aim was to compare rewarming methods used during pre-hospital management in a large prospective cohort of UOHB in France.

Methods: We analyzed UOHB from the prospective AIE cohort from 25 prehospital emergency medical services in France. The primary outcome was the change in body temperature from arrival at scene to arrival at hospital. Our database was approved by the French Data Protection Authority and by a French research ethics committee. Maternal consent was systematically requested before or during birth management (left at the physician's discretion).

Results: From 2011 to 2018, 1,854 UOHB were recorded, of whom 520 were analyzed. We found that using incubator care was the most effective rewarming method (+0.8° C during transport; $P < 0.001$), followed by the combination of plastic bag, skin-to-skin and cap (+0.2° C). The associations plastic bag + cap and skin-to-skin + cap did not allow the newborn to be warmed up but rather to maintain initial temperature (+0.0° C). The results of the multivariate model were consistent with these observations, with better rewarming with the use of an incubator (Adjusted temperature difference = +0.33 95CI(0.13; 0.52)). According to the classification and regression tree (CART) method, we also identified circumstances of increased risk of hypothermia according to classification and regression tree, like premature birth (< 37 weeks of gestation) and/or low outside temperature (< 8.4° C).

Conclusions: Using an incubator was the most effective rewarming method during pre-hospital management of UOHB in our French prospective cohort. Based on our model, in cases of term less than 37 weeks of gestation or between 37 and 40 weeks with a low outside temperature, using such a method would be preferred.

Trial Registration / Funding Information (only) :

No funding was secured for this study

#18535 : Thirty-day mortality in atrial fibrillation patients with gastrointestinal bleeding in the emergency department: differences between direct oral anticoagulant and warfarin users**Authors:**

Gianni Turcato (1), Antonio Bonora (2), Elisabetta Zorzi (3), Arian Zaboli (1), Alice Dilda (2), Massimo Zannoni (2), Giorgio Ricci (2), Antonio Maccagnani (4), Norbert Pfeifer (1), Andrea Tenci (3)

1. Emergency Department, Ospedale Franz Tappeiner Merano, Merano, ITALY
2. Emergency and Intensive Care Department, University Hospital of Verona, Italy, Verona, ITALY
3. Emergency Department, Ospedale Girolamo Fracastoro, San Bonifacio, ITALY
4. Emergency Department, Azienda Ospedaliera Universitaria Integrata, Verona, ITALY

Keywords: gastrointestinal bleeding; DOACs; warfarin; oral anticoagulant therapy

Abstract :**Background:**

The ageing of the population, the better knowledge of the cardio-embolic risk and the availability of new oral anticoagulant drugs that do not require continuous laboratory monitoring, have allowed an exponential spread of oral anticoagulant therapy. More clinical data are required on the safety of direct oral anticoagulants (DOACs). Although patients treated with warfarin and DOACs have a similar risk of bleeding, short-term mortality after a gastrointestinal bleeding (GIB) episode in DOAC-treated patients has not been clarified.

Objectives: To assess differences in 30-day mortality in patients treated with DOACs or warfarin admitted to the emergency department (ED) for GIB.

Methods: This was a multicentre retrospective study conducted over two years. The study included patients evaluated at three different EDs for GIB during oral anticoagulant therapy. The baseline characteristics were included. The two treatment groups (DOACs vs warfarin) were compared to evaluate any possible imbalance in the anamnestic or clinical characteristics. Here, the use of propensity score matching had to be considered to equilibrate the two groups and to obtain a homogeneous cohort of patients for prognostic evaluation. Comparison with the clinical and anamnestic variables was performed using the Mann-Whitney U test and with Fisher's exact test, as appropriate. Cox regression, adjusted for all variables that were significant to the previous univariate analysis, was performed to verify differences in mortality between the two treatment groups. Finally, the Kaplan-Meier method was used to compare 30-day survival between DOAC and warfarin users. **Results:** Among the 284 patients presenting GIB enrolled in the study period, 39.4% (112/284) were treated with DOACs, and 60.6% (172/284) were treated with warfarin. Propensity score matching was not needed, as the two groups did not show significant differences in anamnestic or clinical characteristics except for the concomitant platelet therapy (11.6% vs 2.7%, $p = 0.007$). Overall, 8.1% (23/284) of patients died within 30 days. The factors associated with 30-day mortality risk were age, history of chronic renal disease, active cancer, HAS-BLED (hypertension, abnormal renal/liver function, stroke, bleeding history or predisposition, labile international normalized ratio, elderly, drugs/alcohol concomitantly) value, and bleeding type (major GIB) and site (upper GIB). After the univariate analysis, neither of the two anticoagulant treatments resulted in higher 30-day mortality risk (warfarin 8.7% vs DOACs 7.1%, $p = 0.824$). Cox analysis adjusted for age, chronic renal disease, major GIB, upper GIB, and baseline HAS-BLED, showed no difference in mortality within 30 days of the GIB episode between the two groups ($p=0.533$). The Kaplan-Meier curves showed no difference in 30-day survival between the warfarin and DOAC users ($p = 0.651$).

Conclusions: Despite their rapid diffusion, the available evidence ON DOACs is lacking, and the GIB prognosis of anticoagulated patients remains unclear. The present study shows no differences between DOACs and warfarin in short-term mortality after GIB.

#18536 : Effectiveness of Manchester Triage System in risk prioritisation of patients with Pulmonary Embolism who present dyspnoea, chest pain or collapse.**Authors:**

Arian Zaboli (1), Gianni Turcato (1), Pasquale Solazzo (1), Elisabetta Zorzi (2), Gabriele Magnarelli (1), Tania Marsoner (1), Laura Ciccariello (1), Martina Malloth (1), Norbert Pfeifer (1)

1. Emergency Department, Ospedale Franz Tappeiner Merano, Merano, ITALY
2. Emergency Department, Ospedale Girolamo Fracastoro, San Bonifacio, ITALY

Keywords: Manchester Triage System; Pulmonary Embolism; dyspnoea; collapse; chest pain

Abstract :

Background: the recognition of patients with pulmonary embolism (PE) is an ongoing clinical challenge. Up to 50% of patients with pulmonary embolism evaluated in the Emergency Department (ED) can be delayed or even missed diagnoses. The ability of the triage system to correctly prioritise the suspicion of these patients is fundamental for accurately setting the diagnostic-therapeutic procedure. Manchester Triage System (MTS) is an internationally validated system which classifies patients in 5 increasing risk levels. MTS presents 52 standard diagrams that start several flow-charts based on the presenting symptom. These flow charts include different combinations of signs and symptoms to assess the severity of the patient. There is no specific presentational flow chart for PE in MTS.

Aim: to verify the effectiveness of MTS in risk prioritisation of patients with EP who present dyspnoea, chest pain or collapse.

Methods: this was an observational retrospective study. Sensibility, specificity, negative and positive predictive values have been calculated using a 2x2 contingency table between PE diagnosis versus positivity/negativity of MTS. Subsequently, we constructed Kaplan-Meier curves to explore the different survival rates in PE patients between positivity/negativity of MTS were estimated with the Log-Rank Test.

Results: We enrolled 7055 patients during the two-year study period. The analysis included baseline characteristics and triage evaluations. PE episodes were 2.1% of cases, while severe PE (hemodynamic instability, systemic thrombolysis, 30-days mortality, bilateral massive PEs and PEs than needed invasive mechanical ventilation) were 0.8%. MTS showed a specificity of 72.5% for PE, a sensitivity of 35.3% and a negative predictive value of 98.1%. If considering only severe PEs, the specificity of MTS is 72.6%, sensitivity rises to 54.2%, and the negative predictive value rises to 99.4%. Patients with severe PE presented objective dyspnoea (66.9% vs. 29.5%, $p<0.001$) while they did not present pleuritic chest pain in triage (5.1% vs. 33%, $p<0.001$). Severe PEs seem to be associated with signs of cardiorespiratory instability such as desaturation and heart rate. At the subsequent multivariate analysis, objective dyspnoea (OR 2.764, 95% CI 1.014 – 7.529, $p=0.047$), pleural pain (OR 0.150, 95% CI 0.027 – 0.827, $p=0.029$), saturation (OR 0.862, 95% CI 0.756-0.982, $p=0.026$) and heart rate (OR 1.036, 95% CI 1.1010-1.152, $p=0.040$) were found to be independent factors for patient severity. Finally, patients with higher risk have a lower survival at 30 days ($p<0.001$). Results suggest that clinical characteristics that lead to assess a severe MTS code appear similar to the ones that characterise a pulmonary embolism episode.

Conclusions: This study showed good effectiveness of the Manchester Triage System. Although pulmonary embolism is a very often under-recognised disease, Manchester Triage System presents an acceptable safety profile in these patients.

#18537 : Risk of haemothorax after rib fractures in oral anticoagulants patients.**Authors:**

Gianni Turcato (1), Antonio Bonora (2), Arian Zaboli (1), Elisabetta Zorzi (3), Massimo Zannoni (2), Giorgio Ricci (2), Antonio Maccagnani (4), Norbert Pfeifer (1), Andrea Tenci (3)

1. Emergency Department, Ospedale Franz Tappeiner Merano, Merano, ITALY
2. Emergency and Intensive Care Department, University Hospital of Verona, Italy, Verona, ITALY
3. Emergency Department, Ospedale Girolamo Fracastoro, San Bonifacio, ITALY
4. Emergency Department, Azienda Ospedaliera Universitaria Integrata, Verona, ITALY

Keywords: haemothorax; oral anticoagulant therapy; rib fractures;

Abstract :

Background: post-traumatic intrathoracic bleeding risk in oral anticoagulation patients with rib fractures is still not clear. Rib fractures occur in more than 20% of blunt chest trauma. In most cases, patients need a relatively short observation period and analgesic therapy, but in a non-negligible percentage of cases, rib fractures may lead to pulmonary complications requiring hospitalisation and intensive care. In these latter cases, rib fractures can result in mild to moderate post-traumatic intrathoracic bleedings and, rarely, in massive haemothorax associated with elevated morbidity and mortality. It is not clear if pre-injury oral anticoagulant therapy can increment the risk of intrathoracic bleeding after a chest injury or rib fracture.

Aim: to assess whether pre-injury oral anticoagulant treatment in patients with rib fractures can be a risk factor for haemothorax and post-traumatic intrathoracic bleeding complications.

Methods: Over the 2-year period, 396 patients with rib fractures after blunt chest trauma and concomitant antithrombotic therapy were evaluated at the two Emergency Departments of the University Hospital of Verona (Italy). The patients were divided into two groups according to pre-injury therapy: oral anticoagulant and antiplatelet drugs. Their demographic, anamnestic and clinical features were recorded.

Univariate and multivariate logistic regression was used to estimate the risk of post-injury pulmonary bleeding associated with pre-injury oral anticoagulation therapy. Multivariate models were created including clinically relevant variables identified as possible confounders.

Results: 396 patients with rib fractures were enrolled in the study period (260 antiplatelet patients versus 136 anticoagulation patients). Overall, 6.6% (26/396) of patients presented a haemothorax and 14.9% (59/396) a pulmonary bleeding complication. Patients treated with oral anticoagulants were older (median age 84 vs 81 years old) and with cardio-embolic risk conditions (FA, previous TEP history) compared to those treated with antiplatelets. 12.5% (17/136) of patients with oral anticoagulants developed haemothorax within 48 hours compared to 3.5% (9/260) of patients treated with antiplatelets, $p=0.001$. Generally, a pulmonary post-traumatic complication occurred most in anticoagulated patients compared to antiplatelets (26.5% vs 10.0%, $p < 0.001$). No difference was noticed for pulmonary contusions. Among the patients who died within 90 days for trauma-related causes, 83.3% (10/12) were treated with anticoagulants ($p=0.001$) (Table 2). Rib fractures number, major trauma dynamic, a high ISS and previous bleeding events were considered risk factors associated with intrathoracic bleeding (haemothorax and pulmonary bleeding complications). Some anamnestic variables were associated with haemothorax risk or pulmonary complications.

In the multivariate analysis (Table 3), oral anticoagulants resulted as an independent risk factor for haemothorax development within 48 hours from rib fractures also after adjustment for age, bleeding risk (HAS-BLED), number of rib fractures, Injury Severity Score values and severe trauma dynamic, with an adjusted OR 7.882 (IC 95% 2.240-27.734), $p=0.001$. Oral anticoagulants resulted independently associated with haemorrhagic complications with an OR of 5.195 (IC 95% 2.452-11.010), $p < 0.001$.

Conclusions: Pre-injury oral anticoagulant therapy is an independent risk factor for haemothorax and pulmonary bleeding complications in patients with post-injury rib fractures.

#18538 : “Early prediction of mortality based on predisposition, qSOFA and renal function in patients admitted to the Emergency Department with a diagnosis of pneumonia: a prospective study”**Authors:**

Livio Colombo (1), Simone Pasini (2), Piera Pugliese (3), Silvia Colombo (3), Greta Rossignoli (1), Elena Clerici (1), Irene Rusconi (1), Alfredo Macheda (1), Fabia Castagna (1), Federica Bianchi (1), Adele Anita Radici (1), Pier Maria Battezzati (4)

1. Emergency Department, Ospedale San Paolo, Milano, ITALY
2. Dipartimento di Medicina, Ospedale di Lodi, Lodi, ITALY
3. Emergency Department, Ospedale Niguarda, Milano, ITALY
4. Dipartimento di Medicina, Ospedale San Paolo, Milano, ITALY

Keywords: pneumonia, risk stratification, predisposition, qSOFA

Abstract :

Background

Although lower respiratory tract infection is one of the most common cause of death worldwide, at present mortality risk stratification for mortality in patients admitted to the Emergency Department (ED) with pneumonia is not identified adequately using currently available risk scores like CURB65 and PSI: the former has a low sensitivity, the latter a low specificity.

Aim

The purpose of this study was to identify the main features associated with mortality within one month in patients admitted to the ED for pneumonia. We focused both on the main predispositions, comorbidities and on clinical and laboratory data.

Methods:

We started from a prospective study in which we evaluated all patients admitted for infection of any origin (a total of 542 patients) between March and June 2017 in San Paolo Hospital and Niguarda Hospital in Milan; then we focused on patients admitted for pneumonia (diagnosis based on clinical and radiological criteria), and at the end we considered the main features related to mortality in this specific subgroup.

Results:

There were 214 patients admitted for pneumonia (62.1% males): among them, 181 were discharged from the hospital and 31 died (14.4%). The features related to mortality were: age (71.2 vs 82.7 years, $p < 0.001$), being bedridden (18.1% vs 51.6%, $p < 0.001$), use of antibiotics in the previous month (32.4% vs 54.8%, $p < 0.01$), a recent hospitalization (less than a month before) or coming from a nursing home (15.5% vs 32.2%, $p < 0.05$) and serum creatinine levels (1.2 mg/dL vs 2.1 mg/dL, $p < 0.001$). Moreover, a qSOFA ≤ 2 on arrival in ED had a high specificity (91.1%) predicting a better outcome.

Conclusions:

Patient's predisposition (age, recent use of antibiotics or hospitalization and coming from a nursing home), qSOFA, renal function and being or not bedridden could be relevant features to achieve a more accurate early risk stratification for mortality in patients admitted to ED and hospitalized for pneumonia. Further studies and a larger sample will be needed to confirm our results.

Trial Registration / Funding Information (only) :

NCT03601767

#18539 : Impact of pre-hospital vital parameters on the neurological outcome of out-of-hospital cardiac arrest: Results from the French National Cardiac Arrest Registry**Authors:**

François Javaudin (1), Natacha Desce (2), Quentin Le Bastard (3), Hugo De Carvalho (4), Philippe Le Conte (3), Joséphine Escutnaire (5), Hervé Hubert (5), Emmanuel Montassier (3), Brice Leclere (6)

1. Urgences - SAMU, CHU Nantes, NANTES, FRANCE
2. Department of Emergency Medicine, CH Saint Nazaire, Saint Nazaire, FRANCE
3. Urgences - SAMU, CHU Nantes, Nantes, FRANCE
4. Department of Emergency Medicine, CHU Nantes, Nantes, FRANCE
5. Public Health Department EA 2694, University of Lille, Lille, FRANCE
6. Service d'Évaluation Médicale et d'Épidémiologie, CHU Nantes, Nantes, FRANCE

Keywords: Out of hospital cardiac arrest, Ventilation, Hemodynamic monitoring, Vital signs, Prehospital emergency care

Abstract :

Introduction: The targets for vital parameters following return of spontaneous circulation (ROSC) from an out-of-hospital cardiac arrest (OHCA) are based on studies carried out predominantly in intensive care units. Therefore, we studied the pre-hospital phase.

Method: We included all adult OHCA from the French OHCA Registry. Vital parameters [peripheral oxygen saturation level (SpO₂), end-tidal carbon dioxide (ETCO₂) and systolic blood pressure (SBP)] documented during the pre-hospital phase by mobile medical team, were evaluated with regard to the neurological outcome on day 30 (classified as good for Cerebral Performance Category (CPC) 1 – 2, and poor for CPC 3 – 5 or death).

Results: When compared with a reference range of 94–98%, SpO₂ values less than 94% were associated with a worse outcome on univariate analysis [relative risk (RR) = 1.108(1.069 – 1.147)]. An SpO₂ of 99 – 100% did not appear to be harmful [RR=0.985(0.956–1.015)]. ETCO₂ values that deviated from the reference of 30 – 40 mmHg were associated with a worse outcome on univariate analysis [< 20, RR = 1.191(1.143 – 1.229); 20 – 29, RR = 1.092(1.061 – 1.123); 41 – 50, RR = 1.075(1.039 – 1.110); >50, RR=1.136(1.085 – 1.179)]. When compared with a reference range of 100 – 130, higher or lower values of SBP were associated with a worse outcome on univariate analysis [< 80, RR = 1.203(1.158 – 1.243); 80 – 99, RR = 1.069(1.033 – 1.105); 131 – 160, RR = 1.076(1.043 – 1.110); > 160, RR = 1.168(1.126 – 1.208)]. The multivariate analysis yielded similar results.

Conclusion: In comatose patients who have achieved ROSC after OHCA, vital parameters in the pre-hospital phase appear to have a real impact on the 30-day neurological outcome. We found that an SpO₂ ≥ 94%, an ETCO₂ of 30 – 40 mmHg, and an SBP of 100 – 130 mmHg were associated with a better prognosis.

Trial Registration / Funding Information (only) :

The Re'AC registry was supported by the French Society of Emergency Medicine (SFMU), a patient foundation - Fédération Française de Cardiologie, the Mutuelle Générale de l'Éducation Nationale (MGEN), the University of Lille and the Institute of Health Engineering of Lille. The authors declare that the funding sources had no role in the conduct, analysis, interpretation or writing of this study.

#18540 : “Fluid challenge in spontaneous breathing unstable hypotensive patients: Can aortic Velocity Integral Time (VTI) guide fluid therapy and have prognostic value in the Emergency Department? A prospective pilot study”**Authors:**

Livio Colombo (1), Irene Rusconi (1), Alfredo Macheda (1), Elena Clerici (1), Marta Bergamaschi (2), Lorena Meloni (1), Francesco Panizzardi (1), Fabio Silini (1), Pier Maria Battezzati (3)

1. Emergency Department, Ospedale San Paolo, Milano, ITALY
2. Emergency Department, Ospedale Niguarda, Milano, ITALY
3. Dipartimento di Medicina, Ospedale San Paolo, Milano, ITALY

Keywords: fluid challenge, spontaneous breath, hypotensive unstable patients, aortic VTI

Abstract :**Background:**

The importance of echography in the Emergency Department (ED) is known for a long time, as demonstrated by several authors that have developed, through the years, a lot of echography-based protocols in critical care settings, such as trauma or septic shock. Despite this, assessing cardiac function, intravascular volume status and the responsiveness to fluid challenge (FC) in acute hypotensive patients, still remains difficult. In instable hypotensive patients, blood pressure value does not give a comprehensive hemodynamic evaluation, since it includes three macro-parameters that could change quickly in acute situations: intravascular volume status, vascular tone and cardiac performance. For this reason, developing a non-invasive and reproducible procedure that helps physicians to better understand the responsiveness to FC could be a relevant topic in critical care settings.

Aim:

Assessing the responsiveness to FC in hypotensive and instable patients by integrating clinical data with some ultrasound measurements: aortic velocity time integral (VTI), mitral E/E' ratio, inferior caval (IC) index and lung ultrasound (LUS). Moreover, we propose a practical VTI-guided algorithm to evaluate the responsiveness to FC and suggest a prognostic value of a low or no increase in VTI value after FC.

Methods:

We evaluated 16 patients arrived in the ED between April and May 2018 with hypotension of any cause. All of the patients arrived in hemodynamic instability, with median arterial pressure (MAP) < 65 mmHg, and all of them had indication to undergo a FC. We studied three types of parameters: clinical and laboratory measurements (cardiac rate, MAP and lactate); ultrasound parameters: aortic VTI at the left ventricular outflow tract, the E/E' ratio at the lateral mitral valve leaflet, IC index and LUS; peripheral vascular resistances and cardiac output, derived from ultrasound measurements. Vital signs, clinical data and ultrasound measurement were taken at the beginning and after FC, consisting of 500-1000 mL of crystalloid administered in 20-30 minutes.

Results:

We observed, only in the group of patients responder to FC (11/16; $p < 0.05$), a statistically significant correlation between the increase in VTI, MAP rising and lactate reduction. In non responder patients we observed low or no increase in VTI value from the baseline. Mortality rate was 18% in responder patients and 60% in non responder group.

Conclusions:

Despite the small number of patients and the known limitations of aortic VTI measurements (significant pathology of the aortic valve and difficulties in achieving a parallel ultrasound beam to flow direction in the five-chamber view), in acute setting aortic VTI measurements, added to clinical and others ultrasound parameters, could aid emergency physician to better discriminate between patients who could benefit from FC or not in an easy and reproducible way; it could have also a prognostic value.

#18545 : evaluating the slandered disinfection methods in emergency departments of low resources environments

Authors:

Noha Elgendy (1)

1. , non, cairo, EGYPT

Keywords: disinfection,emergency,low resources

Abstract :

Developing countries suffer from low medical resources and insufficient equipments. Difficult evacuation of the Emergency departments form a burden on the infection control units in countries not equipped with disposable equipments. The role of the inanimate hospital environment (e.g., surfaces and equipment) in the spread of nosocomial infection is controversial. Although contamination of the inanimate environment by microorganisms has long been recognized, its significance is unclear. Despite standard manual decontamination, hospital equipment remains contaminated with microorganisms, contributing to nosocomial transmission and hospital acquired infections. This has the potential to negate the effects of healthcare workers' hand-washing protocols. In order to decrease the likelihood of equipment contamination, there has been a rise in the use of disposable pieces of equipment, especially non-critical disposables which carry a significant cost, both a direct financial cost (running into billions of dollars), as well as a cost to the environment that is why this not supported in poor countries. The Objective of the study is To evaluate the effectiveness of the simple decontamination methods used in the emergency department of a hospital in a developing country with portable hospital equipment, by comparing rates of residual contamination in the use of the standard manual decontamination methods . Pre - utilization and post - decontamination of portable medical equipment in an emergency department (ED) setting were cultured To evaluate durability of the effect of the standard techniques of the decontamination method in antimicrobial contamination. After manual decontamination, 57.9% (22/37) of the tested objects in the ED were found to be culture positive with clinically significant microorganisms (CSO). 63 % (ED) of non-critical equipment tested had multiple organisms. while swab cultures from the emergency team hands before touching the patients revealed 42.85 % with commensals and 28.57 % with significant organisms. The standard methods of the equipment decontamination had to be revised either by the technique application by the personnel or the core of the technique itself besides activation of the hand washing technique for the emergency team to provide a safe environment for the patients and the team members even within the low resources

#18547 : Audit of analgesia administration to paediatric patients in Emergency Department

Authors:

Tong Sum Kelly Kwok (1), Lucy Bishop (1), Monica Wallace (1), Shona Leighton (1)

1. Emergency Medicine, NHS, Glasgow, UK

Abstract :

Introduction

Royal College of Emergency Medicine (RCEM) has published guidelines regarding pain management in children. These guidelines recommend administration of analgesia for severe and moderate pain within twenty minutes of presentation to the Emergency Department, and to re-evaluate pain severity within an hour. The appropriate dose of analgesia should be prescribed according to the patient's weight, and the severity of their pain. The RCEM guidelines provide a pain severity assessment tool to help determine the need for analgesia.

Aim

The aim of this audit is to assess the administration of analgesia in patients under the age of sixteen at the Royal Alexandra Hospital Emergency Department, and whether current practice is in line with the recommended guidelines.

Methods

All patients under the age of sixteen who presented to the Royal Alexandra Hospital Emergency Department from 18th to 24th January 2019 were identified. Data was collected retrospectively for the patients whose presentations were pain-related, from the Greater Glasgow and Clyde Clinical Portal. All data collected was recorded using a Microsoft Excel spreadsheet, where all patient information was anonymised.

Results

From 18th to 24th January 2019 inclusive, 124 patients under the age of sixteen presented to the Royal Alexandra Hospital Emergency Department. Within this cohort, 96 patients had pain-related presentations, of which 22.9% of patients (N=22) received analgesia. Out of these patients, only 9.09% (N=2) received analgesia within the recommended twenty minutes after presentation. The average time from presentation to administration of analgesia was 61 minutes. The average time from presentation to triage was 22 minutes.

59.09% (N=13) of the 22 patients, had their weight measured during their visit to the Emergency Department.

Conclusion

The results from this audit are inconclusive, as it is not possible to accurately assess whether analgesia was prescribed appropriately without the assessment of pain severity. This study will need to be repeated to audit the use of the Royal College of Emergency Medicine guidelines. To do this, it will be necessary to encourage staff to use pain assessment scales and to record the weight in children as part of routine practice to help optimise the administration of analgesia in paediatric presentations to the Emergency Department.

Trial Registration / Funding Information (only) :

n/a

#18548 : Could the YEARS algorithm be used to exclude PE during pregnancy? Data from the CT-PE-pregnancy study**Authors:**

Camille Cusson-Dufour (1), Emilie Langlois (1), Thomas Moumneh (2), Antoine Elias (3), Guy Meyer (4), Karine Lacut (5), Jeannot Schmidt (6), Catherine Le Gall (7), Céline Chauleur (8), Frédéric Glauser (9), Helia Robert-Ebadi (9), Marc Righini (9), Grégoire Le Gal (1)

1. Department of Medicine, University of Ottawa, Ottawa Hospital Research Institute, Ottawa, CANADA
2. Département de médecine d'Urgence, CHU Angers, Angers, FRANCE
3. Department of Vascular medicine, Hospital of Toulon, Toulon, FRANCE
4. Service de Pneumologie et Soins Intensifs, Hôpital Européen Georges Pompidou, AP-HP, Paris, FRANCE
5. EA3878 GETBO, Université de Brest, Brest, FRANCE
6. Département de médecine d'Urgence, Centre Hospitalier Universitaire de Clermont-Ferrand, Clermont-Ferrand, FRANCE
7. Département de médecine d'Urgence, Centre Hospitalier d'Argenteuil, Argenteuil, FRANCE
8. Department of Gynecology and Obstetrics, University Hospital of Saint-Etienne, , Saint-Etienne, , FRANCE
9. Division of Angiology and Hemostasis, Geneva University Hospitals and Faculty of Medicine, Geneva, SWITZERLAND

Keywords: Pulmonary embolism, Pregnancy, D-dimer, Clinical probability

Abstract :*Introduction*

In the recently published ARTEMIS study, the YEARS algorithm was shown to safely exclude pulmonary embolism (PE) and reduce usage of computed-tomography pulmonary angiogram (CTPA) among pregnant women with suspected PE. However, further validation is desirable prior to its implementation in clinical practice. Our aim was to externally validate the YEARS algorithm in pregnant women with suspected pulmonary embolism.

Methods

We performed a post-hoc analysis of a prospective management outcome study for PE diagnosis in pregnant women. PE was diagnosed using an algorithm that combined the revised Geneva Score, D-dimer test, bilateral lower limb compression ultrasonography and CTPA. All the items necessary to follow the YEARS algorithm were prospectively collected at the time of the study by the attending physician. The primary outcome was the rate of adjudicated symptomatic venous thromboembolic events at the 3-month follow up.

Results

Of the 395 women included in the original study, 371 were available for the present analysis. PE prevalence was 6.5%. Among the 371 women, 91 (25%) had no YEARS item, while 280 (75%) had one item or more: 14 had hemoptysis (3.8%), 55 had signs or symptoms of DVT (14.8%, of them 5 had a confirmed DVT on ultrasound) and pulmonary embolism was the most likely diagnosis for 262 patients (70.6%). When combined with D-dimer levels (<1000 ng/mL in women with zero item, and <500 ng/mL in women with ≥ 1 item), 77 women (21%) met the criteria for PE exclusion and would not have undergone a CTPA as per the YEARS algorithm. None of these 77 women had PE diagnosed during the initial work up or 3-month follow up. Therefore, the failure rate of the YEARS algorithm in our pregnant women population was 0/77 (95% confidence interval 0.0-3.9).

Discussions

These results confirm those from the recently published ARTEMIS prospective management study and provide additional evidence that the YEARS algorithm appears safe for pregnant women. Almost twice as many women could be spared from radiating imaging tests compared to the traditional algorithm. Given that D-dimer physiologically rises through pregnancy, the use of a higher D-dimer threshold (< 1000ng/ml) among patients with zero YEARS item could account for the higher diagnostic yield of the YEARS algorithm.

Limitations

The total number of women with a negative YEARS algorithm was small and the confidence interval around the estimation of PE prevalence in this group was wide, above the usual recommended limit for safe exclusion, precluding any definite conclusion to be drawn from the study. Also, in the CT-PE-pregnancy study, the likelihood of an alternative diagnosis (which is part of the Wells score but not of the Geneva score) had no consequence on patients' management, which could have impacted the way physicians assessed this variable.

Conclusion

In our study, application of the YEARS algorithm would have resulted in safe exclusion of PE in 1 out of 5 pregnant women without the need for radiating tests, further supporting the use of the algorithm in this population.

Trial Registration / Funding Information (only) :

The study was supported by grants from the Swiss National Foundation for Scientific Research (FNS32003B-120760), the Groupe d'Etude de la Thrombose de Bretagne Occidentale, and the International Society on Thrombosis and Haemostasis Presidential Grant (2017).

#18549 : Identifying septic patients in the Emergency Department using the novel biomarker Intensive Care Infection Score – a non-interventional prospective study**Authors:**

Wolfgang Bauer (1), Hans Geßner (1), Kai Kappert (1), Rudolf Tauber (1), Rajan Somasundaram (1)

1. Charité – Universitätsmedizin Berlin, Charité – Universitätsmedizin Berlin, Berlin, GERMANY

Keywords: Biomarker, Sepsis, SIRS, Emergency Department, ICIS, Intensive Care Infection Score, blood count

Abstract :**Background**

Acute infections are one of the major reasons patients present to the Emergency Department (ED). An acute infection may lead to sepsis, a life-threatening condition. Identifying the infected or septic patient is a crucial task because accurate diagnosis and rapid treatment both have a massive effect on the prognosis. The Intensive Care Infection Score (ICIS) is a novel biomarker, already established for ICU patients, which displays the activity of the innate immune response. The ICIS is based on automated blood cell count, which makes it fast, easily accessible and low cost. Here we evaluated the ability of ICIS to identify the infected and/or septic patient presenting to the ED.

Method

In a non-interventional prospective study, we enrolled potential septic patients with $\geq 2/4$ criteria for systemic inflammatory response syndrome (SIRS) or/and $\geq 2/3$ quick sequential organ failure assessment score criteria (qSOFA) presenting to the ED. 222 patients were enrolled and received a microbiological screening for a pathogen causing the altered SIRS or qSOFA criteria. ICIS and C-reactive protein (CRP) were compared in predicting a microbiological proof of infection and the decision for antibiotic treatment.

Results

The area under the receiver operating characteristic curve (AUROC) for the prediction of infection (positive culture or indirect proof of a bacterial infection) for ICIS was 0.76 (95% CI: 0.70–0.82), compared to CRP 0.75 (CI: 0.69–0.82). The AUROC for predicting the decision for an antibiotic treatment: ICIS 0.74 (95% CI: 0.68–0.81), CRP 0.78 (CI: 0.71–0.84).

Conclusion

The data show that compared to CRP, ICIS provides a similar ability to identify infections and to guide antibiotics. However, being less expensive and quicker in determination, ICIS may play a considerable role in the ED in the future.

Trial Registration / Funding Information (only) :

This study did not receive any specific funding and was approved by the local Charité – Universitätsmedizin Berlin ethics committee, Ethics application no.: EA4/011/17.

#18550 : Retrospective descriptive study of the type of arrhythmias whose clinical diagnosis is an arrhythmia in the out-of-hospital setting in the Community of Madrid.

Authors:

Miriam Uzuriaga Martín (1), ANA MORENO SERRANO (2), FELIPE JIMÉNEZ PEDREÑO (2), PILAR MEDINA DÍAZ (2), JESÚS VALERIANO MARTÍNEZ (2), CRISTINA SÁNCHEZ LAPEÑA (2), ANA MARIA MARTÍN QUINTANA (2), MIGUEL SANTIUSTE GARCÍA (2)

1. SUMMA 112, Prehospital Emergency Care, Madrid, SPAIN
2. SUMMA 112, SUMMA 112, Madrid, SPAIN

Keywords: #Type of arrhythmias #Summa112 #Emergency

Abstract :

The Emergency Medical Service of Madrid (SUMMA 112) is the outpatient medical emergency service of the Regional Ministry of Health of the Community of Madrid. Its scope of competences includes homes and work emergencies in the city of Madrid and all emergencies in the rest of the Community.

Taking into account all of the above, it was decided to conduct a retrospective descriptive study in the specific period of the first semester of 2017 based on the clinical records of SUMMA 112. There were 3752 clinical records with ICD 9 corresponding to some diagnosis of some type of arrhythmia. It was decided to exploit a sample of 20%, which corresponded to a figure of 750-800 medical records. Finally, data from 827 clinical histories were collected, of which 787 were considered valid, a figure that represented the final N of our analysis. This analysis is intended to describe, in a representative way by the sample size, the type of arrhythmias that we have been able to find in patients who are finally diagnosed with an arrhythmia in the Community of Madrid. For this, we requested, first, authorization to the Management and to the Management of the SUMMA 112 and, second, accreditation to the Departments of Clinical Documentation and Information Technology, for the revision of histories and the exploitation of the obtained data.

Data were collected from a total of 787 clinical records with ICD 9 MC corresponding to some type of arrhythmia.

The cases analyzed were diagnosed, by the professionals of SUMMA 112, after interpretation of the electrocardiogram (ECG), in order of frequency, atrial fibrillation (AF) in 378 cases (48.03%), atrial flutter in 59 cases (7.49%), paroxysmal supraventricular tachycardia (PSVT) in 101 cases (12.83%), sinus bradycardia in 65 cases (8.25%), sinus tachycardia in 52 cases (6.60%), atrioventricular block of 1st grade (BAV 1G) in 26 cases (3.30%), 3rd degree atrioventricular block (3G BAV) in 30 cases (3.81%) and ventricular tachycardia (VT) in 15 cases (1.90%). In 51 cases (6.48%) the interpretation of the ECG was not recorded.

#18555 : Brain MRI image of post-resuscitation induced by different rat models of cardiac arrest and CPR.**Authors:**

Yi Shan (1), Jian Wan (2), Zhaofen Lin (1), lixue Wu (3), wenfang Li (4)

1. Shanghai Changzheng Hospital , Department of Emergency and Critical care medicine, Shanghai, CHINA
2. Pudong new area people's hospital, Department of Emergency and Critical care medicine, Shanghai, CHINA
3. Shanghai changzheng hospital , Department of Emergency and Critical care medicine, Shanghai, CHINA
4. Shanghai Changzheng hospital , Department of Emergency and Critical care medicine, Shanghai, CHINA

Keywords: MRI, cardiac arrest, CPR, brain damage

Abstract :

ObjectiveTo investigate the efficacy of brain MRI examination on post-resuscitation brain damage, which was induced by different rat models of cardiac arrest and cardiopulmonary resuscitation.

Methods102 male SD rats were randomized into 5 groups according to the different methods to induce cardiac arrest (CA) and cardiopulmonary resuscitation (CPR) ;1) Asphyxia group(n=24), asphyxia caused 7mins of CA before CPR; 2)VF group(n=24), ventricular fibrillation caused 7mins of CA before CPR; 3)High potassium group (n=24), potassium injection caused 7mins of CA before CPR; 4)AS group(n=24), asphyxia plus potassium injection together to induce 7mins of CA before CPR and 5) Control group (n=6). Asphyxia-induced CA was performed by turning-off the ventilator and blocking the endotracheal tube. A progressive increase in 60-Hz current to a maximum of 2 mA was delivered to the right ventricular endocardium through the guide wire to induce ventricular fibrillation (VF). 10% of potassium chloride was injected by 0.12ml/100g to induce high-potassium. Chest compressions and mechanical ventilations were started after 7 minutes of CA. The baseline arterial blood gas was measured; hemodynamic data of heart rate, MAP, BP, DBP were continuously recorded. The MRI examination was tested at 6h, 24h, 72h and 7days after resuscitation in each group. The expressions of S100 β , GFAP, CK-BB and NSE were also detected at 6h, 24h, 72h and 7days after resuscitation. The rat hippocampus and cortex were harvested at 6h, 24h, 72h and 7days after resuscitation for the terminal transferase-mediated 2'-deoxyuridine, 5'-triphosphate nick end-labeling assay analysis.

Results The brain function was significantly impaired after resuscitation from cardiac arrest and reperfusion among different rat model of CA and CPR ($p < .01$). The hemodynamic data of HR, MAP were significantly decreased in VF group ($p < .05$).The expressions of S100 β , GFAP, CK-BB and NSE were significantly increased in all groups in comparison to Control group. Fewer apoptotic cells were observed in VF group in comparison to asphyxia and AP group ($p < .05$). The ischemia area in brain MRI image was larger in asphyxia and AP group, in comparison to potassium group and VF group ($p < .05$).

Conclusions:Brain function was significantly impaired after CA/CPR. Brain MRI image indicated severer brain damage as well as more apoptosis detected in asphyxia rat model of CA and CPR.

Trial Registration / Funding Information (only) :

Supported by Shanghai Science and Technology Found No 17140902200

#18556 : The signaling pathway of κ -opioid receptor in ischemia-reperfusion cardiac myocytes.**Authors:**

Yi Shan (1), Yi Shan (1), Jian Wan (2), Zhaofen Lin (1)

1. Shanghai Changzheng Hospital , Department of Emergency and Critical care medicine, Shanghai, CHINA
2. Pudong new area people's hospital, Department of Emergency and Critical care medicine, Shanghai, CHINA

Keywords: signaling pathway, kappa opioid receptor, ischemia ,reperfusion

Abstract :

Objective The role of kappa opioid receptor (κ -OR) in limiting postresuscitation myocardial dysfunction remains unclear. **Methods** Ischemia/reperfusion (I/R) were induced in H9C2 cardiomyocytes, and randomized into control group, I/R group, I/R+ κ -OR inhibition group and I/R+ κ -OR over-expression group. κ -OR adenovirus vector was designed and constructed, the highest inhibition and over-expression efficiency of adenovirus vector was selected to infect I/R cardiomyocytes. The cell viability, mPTP opening and apoptosis were detected, the expression and activity of κ -OR were detected, and signaling pathways downstream of κ -OR, including PI3K/Akt and ERK1/2 were also detected. The expression and activity of κ -OR as well as PI3K/Akt and ERK1/2 were detected after GRK3 was inhibited by antagonist Cmpd101. **Results** 1. The cell viability, mPTP opening and apoptosis ratio were decreased after I/R, but significantly improved in I/R+ κ -OR over-expression group. 2. The expression of phosphorylated ERK and phosphorylated AKT in I/R+ κ -OR over-expression group were significantly increased in compare with I/R group. 3. The protective effects of κ -OR and PI3K/Akt and ERK1/2 signaling pathway activation on postresuscitation myocardial dysfunction were attenuated by GRK3 inhibition. **Conclusions** κ -OR activation could improve ischemia-reperfusion injury in cardiac myocytes through ERK1/2 and PI3K/Akt signaling pathway. Inhibition of GRK3 could block the protective effects of κ -OR on myocardial function.

Trial Registration / Funding Information (only) :

Supported by Shanghai Science and Technology Found No 17140902200

#18560 : Potential effects of arrival mode on the ED management and short-term prognosis of acute heart failure patients**Authors:**

Pia HARJOLA (1), Paul-Louis MARTIN (2), Veli-Pekka HARJOLA (1), Said LARIBI (3)

1. Emergency Medicine Department, Helsinki University Hospital, Helsinki, FINLAND

2. Emergency Department, CHU Tours, Tours, FRANCE

3. Emergency Medicine Department, Tours University hospital, Tours, FRANCE

Keywords: acute heart failure, ED, treatment, outcome

Abstract :

Background: Acute heart failure (AHF) is often encountered in emergency departments (ED). From 11% to 53% of AHF patients arrive to the ED by ambulance.

Purpose: The aim of our study was to show potential effects of arrival mode on the ED management and short-term prognosis of AHF patients.

Methods: The EuroDEM study was a European multinational multicentre study. Data on patients presenting with shortness of breath were collected from 66 EDs. Patients with discharge diagnosis of AHF were categorized into two groups based on their arrival mode to the ED: those arriving by ambulance (emergency medical services (EMS) patients) and those self-presenting (non-EMS patients). ED management and prognosis were compared between the two groups.

Results: The study included 507 AHF patients. The majority (60.9%) arrived at the ED by ambulance. EMS patients tended to be older (mean age 80 years vs. 75 years) and more often female (56% vs. 42%) compared to non-EMS patients. On admission to the ED, EMS patients had higher heart rate (90/min vs 85/min, $p=0.019$) and respiratory rate (24/min vs 21/min, $p=0.026$). Diuretics were administered to 67% of all AHF patients, nitrate-infusion to 12 % and intravenous morphine to 8%. Seventy-nine percentage received supplementary oxygen, and 9.5% received non-invasive ventilation (NIV). No significant difference was seen in the ED management between the patient groups apart from the use of supplementary oxygen (EMS 85% vs non-EMS 69%, $p< 0.0001$) and NIV (EMS 13% vs non-EMS 4%, $p=0.0017$). Thirty-two percentage of non-EMS patients and 16 % of EMS patients were discharged home from ED ($p<0.0001$). The mean length of hospital stay was 7 days in both groups. In-hospital mortality was 5.0 % for non-EMS and 10.9 % for EMS patients ($p= 0.06$).

Conclusion: Majority of AHF patients arrive to the ED by ambulance. The arrival mode does not seem to affect the ED management apart from the use of ventilatory support. Non-EMS patients are more often discharged home from the ED, whereas the in-hospital mortality is higher among EMS patients.

Trial Registration / Funding Information (only) :

Sub-analysis of the EURODEM study : NCT02060799

#18561 : Parental involvement in the manual reduction of the pulled elbow in children**Authors:**

Jeong Hun Lee (1), Sanghun Lee (1), Man Soo Jung (1), Ji Ho Song (1), Seung Chul Lee (1), Jun Seok Seo (1), Han Ho Do (1), Yong Won Kim (1)

1. Department of Emergency Medicine, Dongguk University Ilsan Hospital, Goyang, KOREA

Keywords: Subluxation, Elbow joint, Reduction, Pulled elbow

Abstract :**Introduction**

The pulled elbow is a common injury in child and is treated simultaneously with diagnosis through manual reduction. At this time, parents watch the procedure but often do not fully understand it. The purpose of this study was to investigate the effect of parental involvement on manual reduction in radial head subluxation.

Method

From January to December 2018, we conducted a prospective, case-control study. The patients were under 6 years old with suspected radial head subluxation. The patients were randomly assigned to two groups according to the method of reduction. In the intervention group, physician's and parent's finger placed on the patient's radial head, and in the control group, only the physician's finger placed on the patient's radial head. The results of the questionnaire were analyzed for the parents and the physician who performed the manual reduction.

Results

A total of 150 patients were included in the study. 75 patients were in the intervention group and 75 were in the control group. There was no significant difference between intervention and control group in the gender (49.3% vs 45.3%, $p = 0.625$), mean age (34.6 month vs 33.0 months, $p = 0.513$), onset time (2.73 hours vs 3.69 hours, $p = 0.293$), frequency of attempts (1.20 times vs 1.21, $p = 0.917$). The ease of practicing doctors did not show a significant difference between the two groups. However, the parents' satisfaction was significantly higher in the intervention group. In the intervention group, the physician's intensity of the click during the procedure showed a significant correlation with the parent's felt of click and it was correlated with the parent's understanding and satisfaction.

Conclusion

Parental involvement did not affect the procedure in reducing the frequency of radial subluxation, but it improved the understanding and satisfaction of the parents.

#18563 : Acute circulatory support in paediatric ED.**Authors:**

Tom MBBS Solan (1), Elliot FRACP Long (1)

1., The Royal Children's Hospital, Melbourne, Australia, Melbourne, AUSTRALIA

Keywords: Fluid bolus, heart rate, blood pressure, child, cohort study.

Abstract :

Background: The epidemiology of fluid bolus therapy use in the Paediatric Emergency Department is unknown. The aim of this study is to describe the frequency of use, volume, content, indications, and effects of fluid bolus therapy in children in the Emergency Department.

Methods: Retrospective cohort study of all children aged 0 to 18 years receiving fluid bolus therapy in the Emergency Department of The Royal Children's Hospital, Australia, over the calendar year 2018. The primary outcome was to identify the indications for use of fluid bolus therapy in paediatric patients. The secondary outcome was to analyse the physiological and metabolic effects of fluid bolus therapy. A total of 1343 children were included in the study.

Results: 1539 fluid boluses were administered to 1343 children (123 received 2 fluid boluses, 32 received 3 fluid boluses, and 3 received 4 fluid boluses). Median age (interquartile range) was 5.6 (1.7 to 12.8) years, 51.1% were male. Median volume (interquartile range) was 293 (140 to 500) ml. Fluid bolus volume of 10ml/kg was used in 45.3%, 20ml/kg in 35.7%, 1000ml in 7.1%, and 500ml in 6.4%. 0.9% saline was used in 99.9% of boluses. The most common indications for fluid bolus administration were: vomiting / diarrhoea (22.8%), acute febrile illness (11.3%), and acute lower respiratory tract infection (9.9%). Fluid bolus therapy was associated with a reduction in median heart rate by 6 beats per minute ($p<0.001$), reduction in systolic blood pressure by 2mmHg ($p<0.001$), reduction in mean blood pressure by 3mmHg ($p<0.001$), and reduction in venous lactate by 0.2mmol/L ($p<0.001$). The proportion of patients with tachycardia was reduced by 8.6% following fluid bolus therapy, with hypotension was increased by 1.8%, and with venous lactate >4.0 mmol/L was reduced by 2.9%.

Conclusion: Fluid bolus therapy is a commonly used intervention in the Paediatric Emergency Department. Although in the majority of cases fluid bolus therapy is not administered for acute circulatory failure, its use in this patient group warrants further exploration.

Trial Registration / Funding Information (only) :

No funding

#18566 : Intradermal mesotherapy versus systemic therapy in the treatment of musculoskeletal pain: A prospective randomized study.

Authors:

Abdullah Kocak (1)

1. Emergency Department, Ataturk University Medical Faculty, Erzurum, TURKEY

Keywords: Acute pain; Mesotherapy; Musculoskeletal pain; Nonsteroidal anti-inflammatory drug

Abstract :

INTRODUCTION: Acute musculoskeletal injuries are one of the most common painful presentation when admission to the emergency department. The aim of the study is to compare the tenoxicam mesotherapy with intravenous dexamethasone in pain control in patients with acute musculoskeletal injury.

METHODS: This parallel randomized controlled trial was conducted with the patients admitted to the emergency department with musculoskeletal injury. Intravenous dexamethasone was administered to the control group, and mesotherapy treatment was performed to the other group. Differences between 10th, 30th, 60th and 120th minutes VAS scores and on the admission VAS score, clinically meaningful change in pain intensity, and adverse effect of the procedures were compared among groups.

THE RESULTS: The differences in VAS scores and the presence of clinically meaningful change in pain intensity were statistically significantly higher in mesotherapy group than the systemic therapy group in all time periods. During one-week follow-up period, there was no reported adverse effect neither in mesotherapy group nor in the systemic therapy group.

CONCLUSIONS: The mesotherapy treatment may be superior than the systemic therapy for pain relief in musculoskeletal injury in short term follow-up in emergency department settings.

#18567 : Mass casualty incidents digital transformation - a reloaded project**Authors:**

Adrian Stanescu (1), Cristian Boeriu (2)

1. UPU-SMURD, Spitalul Clinic Judetean de Urgenta Targu Mures, Targu Mures, ROMANIA
2. Anesthesia, Intensive Care and Emergency Medicine II Department, University of Medicine, Pharmacy, Sciences and Technology of Targu Mures, Targu Mures, ROMANIA

Keywords: mass casualty incidents, digital, electronic, mobile, web-based

Abstract :

Background:

Six years ago a mass casualty incident digitalization project began under the acronym SICAD. The aim of the project was to completely transform the mass casualty incident management on the field and remotely by using current communication technology. This implies using a mobile and server solution as well as electronic patient tags. After a long period of extensive testing of all modules and given several technical drawbacks due to the complexity of the overall solution, a completely redesigned project emerges to carry on the future version of the initial project. The new solution is renamed EMERSYS and it is designed primarily for the use of Romanian emergency agencies.

Methods:

The technical backbone of the previous solution was redesigned in terms of modularity and interconnectivity. Initial requirements for the software solutions are set, allowing for each module to receive and output data independently. The previous Parse.com database integration is completely replaced by an SQL database. Trafficked data is managed by a store-and-forward algorithm in order to maintain a steady flow of operation despite probable moments of lack of data signal. Data logging is significantly augmented. The solution also expands in terms of purpose to several individual applications – mobile and web-based – to address both professionals and bystanders. Improvements are also integrated in terms of power efficiency, graphics, software solution size and operation optimization and security.

Results:

Three distinct packages are set. EMERSYS ONE is an entry level pack designed to digitize the mass casualty incident paper chart and integrate several electronic patient tags. It comprises of a dedicated mobile app for prehospital physicians and paramedics and a web-based app for data output. EMERSYS TWO is a professional pack designed to integrate the majority of functions of the project. It addresses all professionals involved as well as bystanders and it comprises of a dedicated extensive mobile app and six distinct web-based apps: 112 Dispatch, Hospitals, Analysis, Press, Simulator and Backoffice. EMERSYS THREE is based on the same structure as the previous pack but it allows for more advanced algorithms and functions for a more detailed integration of the event digitalization.

Discussion & Conclusions:

The current EMERSYS project carries on the purpose of the previous project to take full advantage of the current technology, especially mobile communications technology. Current work is under way to allow for full offline operation. Further tests are also necessary in order to assess a reliable operation of all packs. Moreover, there is a strong need of simulation by professionals and tech team alike, as well as integrating their feedback. This report refers to the current progress in terms of the overall structure and design and modules operability.

Trial Registration / Funding Information (only) :

Trial Registration: Non clinical work, no patients involved. Funding Information: This study did not receive any specific funding. Ethical approval and informed consent: Not needed

#18569 : Triage urgency and frailty as predictors of early mortality in older patients in the emergency department: a prospective follow-up study**Authors:**

Laura Blomaard (1), Corianne Speksnijder (1), Jacinta Lucke (2), Jelle de Gelder (1), Sander Anten (3), Stephanie Schuit (4), Jacobijn Gussekloo (1), Simon Mooijaart (1), Bas de Groot (2)

1. Department of Internal Medicine - section of geriatrics, Leiden University Medical Center, Leiden, THE NETHERLANDS
2. Department of Emergency Medicine, Leiden University Medical Center, Leiden, THE NETHERLANDS
3. Department of Internal Medicine - section of acute care, Alrijne hospital, Leiderdorp, THE NETHERLANDS
4. Department of Internal Medicine, Erasmus University Medical Center, Rotterdam, THE NETHERLANDS

Keywords: frailty, geriatric emergency medicine, mortality, older patients, triage

Abstract :**Background**

Adequate disease specific emergency department (ED) treatment begins with adequate triage to establish urgency and reduce early mortality. Triage in older patients can be challenging due to the presence of multimorbidity, atypical presentation of complaints or the presence of frailty. Our aim was to study the association between disease specific urgency and early mortality in older patients and to study whether the presence of frailty affects this association.

Methods

This was a secondary analysis of the observational multicentre Acutely Presenting Older Patient (APOP) study, in which ED patients aged ≥ 70 years were prospectively included. Patients were triaged using the Manchester Triage System (MTS) at presentation. Frailty screening was performed using the APOP-screener, which can be administered within 2 minutes at presentation. The primary outcome was 30-day mortality. We assessed whether prediction of mortality was more accurate when frailty was added to MTS by calculating Nagelkerke R^2 for both models.

Results

We included 2629 ED patients with a median age of 79 (IQR 74-84) years of whom 521 (20.0%) patients were frail according to the APOP screener. Patients were assigned as non-urgent ('green', N=717, 27.3%), urgent ('yellow', N=1534, 58.3%) and very urgent ('orange', N=378, 14.4%). In total 135 (5.1%) patients died within 30 days: 24 (3.3%) non-urgent patients, 84 (5.5%) urgent patients and 27 (7.1%) very urgent patients. Overall, the 30-day mortality rate was higher in frail patients compared to non-frail patients (11.7% vs. 3.4%, $p < 0.001$). This difference was significant within all triage categories. The explained variance of the association between triage and 30-day mortality was higher when in addition to MTS alone (R^2 0.009) patients were also screened with the APOP screener (combined R^2 0.062).

Conclusion

Combining a frailty measure with the current triage tool improves prediction of early mortality in older ED patients. Adding frailty screening to the routine triage process may help deliver appropriate care to acutely ill older patients.

Trial Registration / Funding Information (only) :

Funding by ZonMw (projectnumber 627004001)

#18572 : Feasibility of screening with the acutely presenting older patient (APOP) screener in routine emergency department care: a feasibility study**Authors:**

Laura Blomaard (1), Shanti Bolt (1), Jacinta Lucke (2), Jelle de Gelder (1), Anja Booijen (2), Jacobijn Gussekloo (1), Simon Mooijaart (1), Bas de Groot (2)

1. Department of Internal Medicine - section of geriatrics, Leiden University Medical Center, Leiden, THE NETHERLANDS
2. Department of Emergency Medicine, Leiden University Medical Center, Leiden, THE NETHERLANDS

Keywords: feasibility studies, frailty, geriatric emergency medicine, implementation science, older patients, screening

Abstract :**Background**

Frailty screening of older patients in the emergency department (ED) is rarely successfully implemented in routine care. The aim of this study was to evaluate feasibility of screening using the recently validated Acutely Presenting Older Patient (APOP) screener, which identifies older ED patients at highest risk of adverse outcomes within two minutes at presentation.

Methods

This two months' prospective observational cohort study started after implementation of the APOP screener in ED procedures of the Leiden University Medical Center (LUMC). All consecutive patients aged ≥ 70 years presenting to the ED were included. The main outcome was adherence to screening by triage-nurses, operationalised by the screening rate. We identified determinants of screening omission by assessing patient-, disease- and organizational related factors. Next to this, feedback of triage-nurses on barriers and facilitators of screening adherence was collected with questionnaires.

Results

In total 986 older patients were included, of which 566 (57.4%) were screened. The screening rate was stable over time. A younger age (OR 1.03 (95%CI 1.01-1.06), $p=0.018$), triage category "red" (OR 0.14 (95%CI 0.04-0.43), $p=0.001$) and crowding (>14 ED patients upon arrival) (OR 0.65 (95%CI 0.47-0.88), $p=0.005$) were independent determinants of screening omission. In line, the most important barriers for screening adherence according to triage-nurses were patient- ("patient was too ill") and organizational factors ("ED was too busy").

Conclusion

Screening older patients in routine ED care with the APOP screener was feasible. Since adherence to screening was related to patient and organizational factors, attention for these both aspects could improve implementation.

Trial Registration / Funding Information (only) :

Funding by ZonMw (projectnumber 627005001)

#18574 : The prognostic value of pre-arrest neutrophil-to-lymphocyte ratio for in-hospital mortality in adult patients with in-hospital cardiac arrest**Authors:**

Sheng Ye (1), Junzhao Liu (1), Yarong He (1), Yu Cao (1)

1. Emergency Department, West China Hospital of Sichuan University, ChengDu, CHINA

Keywords: Neutrophil-to-lymphocyte ratio, In-hospital cardiac arrest, In-hospital mortality, Prognosis

Abstract :**Background**

As an indicator of systemic inflammation, the neutrophil-to-lymphocyte ratio (NLR) has been proved to be associated with a prognosis of a range of inflammation-related diseases. Although the study found that post-arrest NLR can predict the poor outcomes in patients with in-hospital cardiac arrest (IHCA), the relationship between pre-NLR and worse prognostic of IHCA patients was unclear. This study aimed to investigate the association between pre-arrest NLR and in-hospital mortality in patients of IHCA. We hypothesized that pre-arrest NLR is related to in-hospital mortality of IHCA patients.

Methods

This was a single-center retrospective cohort study recruited IHCA patients in the emergency department (ED) of West China hospital of Sichuan University between January 2016 and May 2017. This hospital is a 4300-bed tertiary teaching hospital and is one of the largest medical centers in the southwest of China. Consecutive patients with cardiac arrest in the ED were included in this study. We excluded patients younger than 18 years, major trauma, lack of necessary data for analysis and hematological diseases or receiving any treatment which might affect the pre-arrest NLR values. Patients were divided into two groups according to the outcomes of in-hospital mortality. Clinical information and blood sample results were collected. Multivariate regression models were used to evaluate the associations between pre-arrest NLR and in-hospital mortality. The receiver operating characteristic (ROC) curve was used to assess the predictive value of pre-NLR.

Results

Out of 488 IHCA patients during the study period a total of 385 (78.89%) patients were eligible for analysis, of those 267(69.35%) were male and mean age was 60.63 ± 17.27 . Of 385 patients, 64 (16.62%) survived to discharge. Patients with in-hospital mortality had a significantly higher pre-arrest NLR compared with survival to discharge patients (11.32[6.98,17.68] vs. 3.65[3.16,6.01], $p < 0.001$). In the univariate model, pre-arrest NLR was associated with in-hospital mortality (OR: 1.347, 95% CI: 1.222-1.484, $p < 0.001$). In the multivariate adjustment, higher pre-arrest NLR was independently associated with in-hospital mortality (AOR=1.276, 95%CI:1.160-1.403, $p < 0.001$) after adjusting for age, gender, history of renal insufficiency, total CPR duration, globulin, alanine transaminase and aspartate aminotransferase. Furthermore, the prognostic performance of pre-arrest NLR was excellent (AUC: 0.86 [95%CI: 0.80-0.92, $p < 0.001$]).

Discussion

In this retrospective observational study, we found that the excellent predictive ability of pre-NLR to predict in-hospital mortality for patients resuscitated from IHCA. We demonstrated the pre-arrest NLR is also a predictor for in-hospital mortality in IHCA patients. Therefore, we have reason to speculate that the systemic inflammatory response and the potential immune dysfunction before resuscitation in critically ill patients are associated with poor prognosis after resuscitation. Timely and effective medical interventions for critically ill patients might improve the survival when IHCA occurs.

Conclusions

Pre-arrest NLR is a useful predictor of in-hospital mortality in adults with IHCA.

Ethical approval and informed consent

The study was conducted in line with the Declaration of Helsinki and gained approval by the Ethical Committee of West China Hospital of Sichuan University(Reference number: 2019201).

Trial Registration / Funding Information (only) :

The present work was supported by the National Natural Science Foundation of China (Grant Nos. 81471836, 81772037 and No. 81801883)

#18575 : An initiative to improve the quality of point-of-care testing within critical care settings by targeting the pre-analytical phase.

Authors:

Viviane Van Hoof (1), Suzanne Bench (2), Antonio Buño Soto (3), Antoine Guillon (4), Peter Lupp (5), Ulf Martin Schilling (6), Annette Thomas (7), Andrei N Tintu (8)

1. Faculty of Medicine and Health Sciences, University of Antwerp, Wilrijk, BELGIUM
2. School of Health and Social Care, London South Bank University and Royal National Orthopaedic Hospital, London, UK
3. Pathology Department, La Paz Hospital, Madrid, SPAIN
4. Intensive Care Department, CHU Tours, University of Tours, Tours, FRANCE
5. Institute for Clinical Chemistry and Pathobiochemistry, Munich Technical University, Munich, GERMANY
6. Department of Clinical Education, Test and Innovation, Linköping University Hospital, Linköping, SWEDEN
7. POCT Department, The Cardiff and Vale University Health Board, Cardiff and Vale, Wales, UK
8. Department of Clinical Chemistry, Erasmus MC, University Medical Centre Rotterdam, Rotterdam, THE NETHERLANDS

Keywords: point-of-care testing, quality, pre-analytical phase, critical care, workflow, working cost, key performance indicators

Abstract :

Background

Availability of rapid and high quality test results offered by Point-of-care testing (POCT) speeds up clinical decision making in critical care settings. POCT sampling and analysis is usually performed by non-laboratory staff with varying levels of experience. Several pre-analytical pitfalls can dramatically reduce the quality of the POCT result, regardless of the analytical quality of the test.

Aim

Present study aimed to identify pre-analytical challenges of POCT within critical care settings.

Methods

Issues influencing the quality of the POCT result - apart from the analytical quality - were collected during focus conversations and in-person consensus meetings with POCT experts from different European countries and different professional backgrounds (clinical laboratory, ICU, nursing).

Results

Main areas identified in the pre-analytical phase were: patient and user safety, user and analyser related errors, timeliness expressed as turn-around-time (TAT), training and competence testing of the user, connectivity and over-all quality of the test result (apart from the analytical quality).

The specific challenges in these areas were further detailed.

Patient safety is negatively impacted by human errors such as incorrect identification of the patient or incorrect ethnography assessment, by blood & sharps exposure, and by delayed, incomplete or erroneous data transfer. User safety is impacted by blood and sharps exposure.

Human and material errors reported by instruments lead to wasted samples and test materials and cause sample recollection and retesting, prolonging the TAT. TAT is also negatively impacted by high complexity testing. A prolonged TAT negatively impacts patient waiting time and time to medical decisions, thereby decreasing the effectiveness of the test and also has a negative impact on staff time and workflow, thereby decreasing efficiency and increasing working costs.

The most important key factor defining pre-analytical quality is training and competence of the user. Training and (re)certification of POCT users should be provided by the laboratory's POCT coordination team. Lab support frees users of practical and logistical issues concerning POCT such as analytical quality issues, follow-up of lot numbers, expiry dates and quality controls. POCT coordinators are lab experts trained to provide this support. Higher user-friendliness of the equipment decreases the necessary training.

Connecting POCT instruments to the Lab Information System and the Electronic Health Record of the patient is an essential contributing factor to correct patient and user identification and to full traceability of the POCT result.

Quality of the test result is negatively impacted by incorrect procedures, such as waiting too long to test the sample, incorrect filling of sampling devices, insufficient sample, haemolysis, improper mixing, improper air evacuation.

Suggested measurable key performance indicators for the pre-analytical phase are instrument down-time and percentages of incorrect patient and user ID's, no-result samples, instrument error codes, out-of-control QC results, interventions by POCT coordinator and manufacturer.

Conclusion

We conclude that this initiative has identified several pre-analytical key factors determining the over-all quality of POCT. A future study is planned

to measure the above-mentioned key performance indicators for the pre-analytical phase in real-life critical care settings.

Trial Registration / Funding Information (only) :

This study was funded by BD UK LTD, Wokingham, Berkshire, RG41 5TS, United Kingdom

#18576 : Recognition and initial treatment of intracranial hypertension by pediatricians in Spain. An advanced simulation observational study**Authors:**

Oscar Estraviz-Paz (1), Jose-Antonio Iglesias-Vazquez (2), Antonio Casal-Sanchez (3), Jose-Manuel Flores-Arias (2), Adriana Regueira-Pan (2), Roman Gomez-Vazquez (2)

1. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, A Coruña, SPAIN
2. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, Santiago de Compostela, SPAIN
3. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, Pontevedra, SPAIN

Keywords: Intracranial hypertension, pediatrics, simulation

Abstract :**Background:** Primary Care Pediatricians (PCP) use to be familiar with a wide range of

children's health-related problems, but rarely face emergency situations. Little is known about the PCP's actual skills to adequately manage acute critical events; some evidences obtained in simulated scenarios indicate that they have diagnostic abilities but lack some practical skills. Acute intracranial hypertension (ICH) is not frequently seen in the out-of-hospital environment. However, a variety of diseases like brain tumors, brain trauma, nontraumatic intra cerebral hemorrhage, ischemic stroke, hydrocephalus and idiopathic ICH may cause acute ICH, a fact that emphasizes the need for adequate recognition and management of such events by Pediatricians.

- **Method:** We systematically reviewed ICH simulated scenarios during advanced simulation courses designed for pediatricians in Spain. The assessment was based on a previously defined sequence of tasks (technical and non-technical), from diagnosis to initial treatment, stabilization and preparation for transport.

- **Results:** A total of 27 scenarios from 21 courses, with the participation of 95 pediatricians were assessed. Suspicion of acute ICH was correctly done in 85% of scenarios after a median time of 7.5 minutes. Osmolar therapy was started in 78% and bag-mask hyperventilation was done in 63%. The patient's head was elevated in 41% and sedatives were administered in 11%. Median time to ask for a brain imaging was 8.5 minutes and to contact neurosurgery was 12 minutes. The evaluation of non-technical skills showed that in 12 of 27 scenarios this aspect was poor.

- **Conclusion:** Primary care pediatricians are able to identify an acute ICH, but need to improve their treatment skills. Systematic analysis of professional's performance during a simulated scenario permits to detect both strengths and weakness; these evidences should be used to improve training programs. Our study has some limitations that should be considered to contextualize the results and designing future studies. The study was retrospective and analyzed sample was limited to PCP, a specific group of pediatricians working out-of-hospital; therefore, the results cannot be extrapolated to other hospital

pediatricians that should be more familiarized with this kind of neurologic complication.

#18578 : Characteristics of the paediatric out-of-hospital resuscitation in Galicia from 1999 to 2016**Authors:**

Jose-Antonio Iglesias-Vazquez (1), Judit Suarez-Gonzalez (2), Oscar Estraviz-Paz (3), Jose-Manuel Flores-Arias (1), Roman Gomez-Vazquez (1), Adriana Regueira-Pan (1), Pablo Souto-Sanmartín (2)

1. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, Santiago de Compostela, SPAIN
2. College of Nursery, University of Santiago de Compostela, Santiago de Compostela, SPAIN
3. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, A Coruña, SPAIN

Keywords: Paediatric, cardiac arrest, resuscitation

Abstract :**Background:** To describe the characteristics of the paediatric out-of-hospital (p-OHCA)

advanced life support attended by mobile emergency teams with physician on board in Galicia, a community with high scattered population.

- Method: Descriptive and retrospective study of the characteristics of the p-OHCA

resuscitation attended by emergencies team of Galicia from 1999 to 2016. Mobile emergency team was defined as an advanced life support ambulance including two emergencies medical technicians, a physician and a nurse specially trained in emergencies.

- Results: 126 P-OHCA were included. 69 (54,8%) boys. Incidence was 2,7/100.000

children/year, mean $7 \pm 2,83$ p-OHCA/year. The most frequent group of age was under 5 years with 46 cases (36,5%). 67 (53,2%) p-OHCA happened at home which was the most frequent location followed by the street (n=17, 13,5%) and other public locations (n=14, 11,1%). Witness CPR was detected in 37 cases (29,4%). The etiology was non-cardiac in 119 cases (81,7%). The first rhythm identified was mainly asystole (n=85, 67,5%), followed by ventricular fibrillation (n=14, 11,1%). 77 children (61,1%) were ventilated with mask-bagvalve, and 43 (34,12%) intubated. Epinephrine was administered in 91 cases (72,2%). 37 (29,7%) children presented ROSC and 19 (15,1%) were mobilized with on-going CPR to the hospital. 17 of 37 (45,9%, p=0,01) cases with witness CPR presented ROSC

- Conclusion: P-OHCA is a rare event. The incidence of p-OHCA in Galicia appears to be

inferior to other studies, probably related to the scattered population of Galicia. Cases with FV (11,1%) were inferior compared to other studies, probably in relation with time elapsed from OHCA to beginning of CPR. Witness CPR was the most important factor to predict ROSC. Strategies aimed at the general population should be carried out to increase knowledge in basic pediatric CPR, thus encouraging CPR by witness.

Authors:

Jose-Antonio Iglesias-Vazquez (1), Pablo Souto-Sanmartín (2), Oscar Estraviz-Paz (3), Adriana Regueira-Pan (1), Judit Suarez-Gonzalez (2), Emilia Perez-Meiriño (1)

1. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, Santiago de Compostela, SPAIN

2. College of Nursery, University of Santiago de Compostela, Santiago de Compostela, SPAIN

3. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, A Coruña, SPAIN

Keywords: Acute coronay syndrom, simulation, nursery

Abstract :

Background: Acute Coronary Syndrome (ACS) is the first cause of non-traumatic death in male and second in female. Training through advanced medical simulation may improve the performance of professionals and students in the ACS. Our purpose was to describe the management of ACS by third grade students in Nursing at the University of Santiago de Compostela (USC).

- **Method:** Descriptive study of the performance of the students of third course of Nursery degree of the University of Santiago. A clinical simulated scenario of ACS with ST elevation was designed by an expert in simulation and emergencies. Each teamwork included 3 students. The tasks were related to the Galician's Infarct code, designed following the international guidelines of the myocardial infarction, and included the identification both of ACS and ST elevation, hemodynamic stabilization and need to transport for primary angioplasty. All the scenarios were videorecorded (informed consent of the students was previously obtained) and assessed by the experts.

- **Results:** 45 scenarios were included. Of a total of 945 tasks to be performed (21 per scenario), only 534 (56.51%) were completed. A statistically significant relationship was found between performance (defined as tasks completed) and survival ($12,8 \pm 3$ vs $10,8 \pm 2,726$; $p=0,026$). Only 7 of the 45 teams (15.55%) completed the tasks, and only 8 teams informed adequately to the patient. Main deficiencies identified were related with the use of the manual defibrillator and the initial pharmacologic treatment of the ACS.

- **Conclusion:** Simulation using manikins appears to be an effective tool to assess the adherence to the practice guidelines. The abilities of the students of the third course of nursery degree to manage the ACS were suboptimal; so specific training program addressed to improve the skills to provide the adequate pharmacologic treatment and to improve the use of the manual defibrillator is needed.

#18580 : Epidemiological characteristics and analysis of the actions performed in out-of hospital pediatric cranioencephalic trauma in Galicia**Authors:**

Monica Barral-Aguin (1), Jose-Manuel Flores-Arias (2), Jose-Antonio Iglesias-Vazquez (2), Oscar Estraviz-Paz (3), Antonio Casal-Sanchez (4), Adriana Regueira-Pan (2)

1. College of Nursery, University of Santiago de Compostela, Pontevedra, SPAIN
2. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, Santiago de Compostela, SPAIN
3. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, A Coruña, SPAIN
4. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, Pontevedra, SPAIN

Keywords: Cranioencephalic trauma, out-of-hospital, pediatrics

Abstract :

Background: In children, the traumatic brain injury (TBI) is the primary cause of traumatic death. It has an elevated morbidity and mortality. A correct first management with a right valuation of the low blood pressure and the hypoxia is essential. The main objective of the study is to analyze the epidemiological characteristics and the attention of children with traumatic brain injury, who were looked after by the out-of-hospital emergency service.

- **Method:** Retrospective descriptive study of the out-of-hospital TBI in children in Galicia between 2015 and 2017. Variables related to the patient (age, sex), to the injury (etiology, location, place and drugs) and to the end (finalization, destination and death) were analyzed.

- **Results:** 50% happen in less than 2 years. Men represent 59'40% and women 39'68%, with a significant p value in the 2016 ($p=0'001$) and 2017 ($p=0'000$). The seasonal distribution is steady during all the year. The 50'46% happened because of falls. Only 49 patients needed a medicine administration. The more frequent was the saline solution 0'9%. The most prevalent group was the serious ones with a 59'76%. More than 70% needed referral despite the fact that the 70'50% were diagnosed with "TBI without symptoms". The 44'29% of those patients had a good resolution.

- **Conclusion:** there's the necessity to introduce prevent and educational measures in the population, above all in the risk groups: younger than 2 years old and men. In addition, it's necessary to make campaigns about practice guides to improve the out-of-hospital assistance.

#18581 : Anaphylaxis crisis management in out-of hospital emergency medical service**Authors:**

Jose-Manuel Flores-Arias (1), Jose-Antonio Iglesias-Vazquez (1), Emilia Perez-Meiriño (1), Roman Gomez-Vazquez (1), Oscar Estraviz-Paz (2), Adriana Regueira-Pan (1), Antonio Casal-Sanchez (3)

1. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, Santiago de Compostela, SPAIN
2. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, A Coruña, SPAIN
3. Public Emergency Medical Service of Galicia, Servicio Galego De Saúde, Pontevedra, SPAIN

Keywords: Anaphylaxis, out-of hospital, emergencies

Abstract :

INTRODUCTION AND OBJECTIVES

Anaphylaxis crisis is a common emergency that can occur in the pre-hospital setting. We present the results of a program to anticipate the management of this crisis from a Emergencies Call Center (ECC).

Methods

ALERT SCHOOL program was developed to anticipate the treatment of emergencies in children, including anaphylactic crisis, convulsions related or not with epilepsy, diabetes mellitus with hypoglycaemia crisis, and a miscellaneous situations with the common risk to present a loss of consciousness. The teachers responsible of these children are trained in how to recognize a critically ill children, how to activate effectively the emergency system, and how to preserve and identify adequately the medication needed).

A retrospective analysis of the in-calls received by allergy with potential severe anaphylactic crisis since the beginning of the Program was made , including the total of the patients registered, the number of emergency calls received, and the final destination of the patient. The possible solutions were: solved by phone (with or without direct intervention of the teachers), mobilization of sanitary resources and solved in situ, mobilization of a sanitary resource and solved in primary care center, admission to an Urgency Room (UR) of a Hospital Centre, or hospitalization. The results are presented as total number and percentage.

RESULTS

Between January of 2007 and June of 2016, 3313 patients were included in the Program. 1445 (43,62%) in relation with severe allergy, 574 (17,32%) epilepsy or febrile convulsions, 526 (15,88%) diabetes mellitus (hypoglycaemia), and the rest (768, 23,18%) included different illnesses with the common risk to present a loss of consciousness.

In the 9,5-year period in the ECC were received 35 emergency calls related to children previously diagnosed of allergy with potential severe anaphylactic crisis. In 12 cases (34,29%) the situation was solved by phone in situ, in the other 23 cases a sanitary resource was required, in 7 cases (20,00%) the emergency was solved in situ, in 6 (17,14%) in a primary care center, and 10 children (28,57%) were admitted to an urgency room of a Hospital Centre. None of the 35 patients required hospitalization.

DISCUSSION

Although anaphylactic crisis in allergic children is a common concern of their parents, this is an uncommon situation (only 35 incalls along 9,5 years of 1445 boys included). In addition, these situations can be anticipated; in fact up to 71,40% of the emergencies were solved in situ, and none of the children required hospitalization. Considering that the real emergencies (10,

28,57%) were identified and stabilised in situ before admitting them to the UR of a Hospital Centre, we can conclude that the program is also effective to distribute adequately the sanitary resources.

#18582 : Cases Presented with Diagnosis of Stroke in period 2016-2017 in Emergency of Regional Hospital Durres, Albania

Authors:

Ferid Domi (1), Kledisa Shemsi (2), Edlira Shemsi (3)

1. Doctor on Emergency, Regional Hospital Durres, Durres, ALBANIA
2. Student, Faculty of Medicine Tirana, Durres, ALBANIA
3. Neurologist Doctor, Regional Hospital Durres, Neurology Division, Durres, ALBANIA

Keywords: Stroke, Emergency, Regional Hospital Durres

Abstract :**Background and Aims:**

In Albania, a complete epidemiological study has not yet been conducted across the country, but the number of stroke patients is considered relatively high, comparable to the countries of eastern Europe due to the high risk factors such as hypertension, hyperlipidemia diabetes mellitus, fibrillation.

Methods:

In 2016-2017, in Emergency of Durres Hospital, 870 cases were diagnosed with Stroke. Of all cases, 802 were diagnosed by emergency physicians and 69 by family physicians. In the total number with Stroke 228 patients (26%) were recurrent and 642 (74%) were new cases. Are classified as Ischemic Stroke 574 cases (66%) and 296 cases (34%) classified as haemorrhagic Stroke.

Results:

In hemorrhagic cases 29 patients (9.8%) were diagnosed with HSA, of which 18 cases were subjected to neurosurgical intervention. Were presented within the first 3 hours of starting ischemic Stroke only 54% (309), of these 115 patients (37.2%) are sent for thrombolysis and 12 cases (6.1%) for thrombectomy in University Hospital of Tirana. By gender 53% of cases (457) were female and 47% of cases (413) were males. The average age of patients was 64.7 years for ischemic Stroke and 56.4 years for haemorrhagic Stroke. The main risk factor in all cases was HTA 61% (530), the second most frequent factor being smoking (55%) (482), with hyperlipidemia 54% (477), 17% (173) atrial fibrillation, 18% (187) diabetes mellitus, 10.5% alcohol consuming, post myocardial infarction 9% (89).

Conclusions:

First risk factor in our study was Hypertension and by gender females had higher prevalence in front of males

#18585 : Retrospective study of the potential impact of the new SAS Trauma Triage Tool on University Hospital Monklands ED**Authors:**

Sean David Kelly (1), Barbara Key (1), Owen Crawley (1), John Paul Loughrey (1)

1. NHS Lanarkshire , University Hospital Monklands , Glasgow, UK

Keywords: Emergency medicine, trauma network, head injuries, trauma triage

Abstract :

Background:

The new Trauma Triage Tool (TTT) will be used by Scottish Ambulance Service (SAS) to rapidly triage trauma patients at the scene and determine the type of emergency department (ED) care required. This was retrospectively applied to the STAG patient cohort from 2016 and presented in 2018 at the Scottish RCEM conference.

There remained a significant cohort of patients who do not fulfil STAG criteria who also have the potential for redistribution across the proposed trauma network, with significant resource and workforce implications. This retrospective analysis expands on the impact of TTT in NHS Lanarkshire.

Methodology:

Patients identified by the discharge from ED diagnosis coding. Patients were retrospectively allocated to local ED, TU or MTC using the TTT applied to their PRF. Patients were allocated to either WGH or FVRH (proposed Trauma Units) or the QEUH (MTC) using the postcode on the PRF and Google Maps to determine the closest unit.

Inclusions: thoracic trauma, orthopaedic injuries (requiring inpatient management), burns requiring transfer, significant mechanism of injury, head injury requiring CT head.

Excluded: age<16, included in STAG cohort, no PRF scanned into Clinical Portal, self-presenting patients.

Results:

237 patients were identified with 98 exclusions (N=139). Mean age 65.1 median 71.

112 (80.1%) of patients would have been redirected to the MTC or TU. Only 5 (3.6%) had secondary transfers for definitive intervention. (Figure 1.1)

114 patients suffered a head injury with 22 (19.3%) having significant pathology on their CT scan, although only three patients had a secondary transfer to the MTC. The remainder were managed conservatively locally. The TTT diverted two of these to the MTC and one to a TU, with subsequent secondary transfer. Overall 70% of head injury patients were redirected to a TU. With only 1% of head injuries requiring secondary transfer from TU to MTC, this questions whether isolated, GCS 15/15 head injuries not meeting criteria for the MTC, should be diverted away from the LEH to the TU.

Trial Registration / Funding Information (only) :

This was a retrospective service evaluation and was approved by the local research department. It did not require ethical approval. No funding was applied for or given.

#18586 : Survey to detect unmet palliative care needs in the emergency department: First results of a questionnaire-based two-level screening process**Authors:**

Ellen Goebel (1), Sven Buechner (1), Bernhard Mallmann, MD, MBA (2), Ute von Frantzi (1), Simone Laporte, MD (1), Randi Manegold, MD (1), Carola Holzner, MD (1), Dirk Pabst, MD (1), Clemens Kill, MD (1), Joachim Risse, MD (1)

1. Center of Emergency Medicine, University Hospital Essen, Essen, Germany, Essen, GERMANY
2. Appointee for Palliative Medicine, University Hospital Essen, Essen, Germany, Essen, GERMANY

Keywords: screening, palliative care needs, interface, emergency medical service, emergency department

Abstract :

Background and Objectives: The use of a screening tool to identify palliative care needs leads to a reduction of unwanted and highly invasive interventions in emergency patients with terminal illnesses.

Many of these patients enter clinical care through prehospital emergency medical services (EMS) and the emergency department (ED). Screening for palliative care needs at this interface can reduce loss of information and strengthen the patient's autonomy in further clinical treatment.

Methods: We developed a two-level questionnaire summarizing existent criteria which indicate palliative care needs. Terminal illness and/or progressive malignant disease and a negative answer to the "Surprise-Question - Would you be surprised if the patient dies within the next 12 months due to their condition?" function as inclusion criteria to the screening process.

Level 1 asks for the patient's wishes, advanced directives, load of symptoms, psychosocial background and resources, as well as assignment from a nursing home. These questions are meant to be answered by the preclinical emergency medical team.

Level 2 is directed to the emergency physician at the ED. It is meant to confirm the surprise question and gives further detail about the terminal illness of the patient. Furthermore, it assesses if the patient has already been admitted to the hospital within the last 3 months.

As the investigation progresses, our defined goal is to determine the sensitivity and specificity, as well as the predictive values of our screening questionnaire. Therefore, we compare the assessment to a specialised palliative care physician's consultation as gold-standard to evaluate palliative care needs. For the statistical analysis, we will use the binary logistic regression model.

Results: The eligibility criteria were met in 15 cases in which the availability of a palliative care consultation was given, too. 73% (11/15) of the patients who underwent the screening process were assigned through EMS, the remaining quarter was detected in the triage process at the ED.

Screening level 2 confirmed in 93.3% (14/15) the underlying terminal disease and in every case (15/15) a "No" to the "Surprise-Question". 40% (6/15) of the trial participants passed away before the consult took place. Palliative care needs were confirmed in 8 out of 9 consultations (88.8%). 46.6% (7/15) of the study population died within the ED under palliative treatment, four further participants died during the hospital stay – overall 80%.

Discussion: We present data deriving from the first two months of experience after initiating the survey to show the feasibility of the two-level questionnaire concept.

The implemented screening process was suitable to adopt the strategy of care in the emergency department. In several cases palliative care and support of the patients and their families can be performed.

Trial Registration / Funding Information (only) :

DRKS00015808 in the German Clinical Trials Register

#18587 : Clinical Prediction Rule Using Multiple Risk Factors for Torsade De Pointes from Drug-Induced QT Prolongation**Authors:**

Rittirak Othong (1), Warisa Prasertsup (2)

1. Residency Program Director, Vajira Hospital, Navamindradhiraj University, Bangkok, THAILAND

2. , Vajira Hospital, Navamindradhiraj University, Bangkok, THAILAND

Keywords: QTcB, long QT, TdP, Prediction scores

Abstract :

Background: Torsade de Pointes (TdP) from drug-induced QT prolongation is rare, but life-threatening. Corrected QT with a cut-off value has long been widely used to estimate the probability of TdP. However, it is neither sensitive nor specific enough. This study sought to construct a clinical prediction rule using multiple risk factors for drug-induced TdP.

Methods: The study population was drawn from a previous retrospective case-control study. Within the case group, a systematic review from Medline was undertaken from the point of its establishment to 10th December 2015. All subjects were adults exposed to QT-prolonging drugs and had TdP. A total 230 patients were included. The control group consisted of 291 patients from 3 hospitals in Atlanta, Georgia, USA, admitted from 2008 to 2010. They had overdosed on QT-prolonging medications but did not develop TdP later. Univariate and multivariate analyses were done to identify significant risk factors. The coefficient of each significant risk factor was converted to a score. Scores were categorized as low, intermediate, and high probability for TdP. Area under the ROC curve (AUROC) and likelihood ratio were calculated.

Results: Univariate analysis revealed 6 significant factors: age > 65 years old, female, underlying heart disease, heart rate < 60 beats/minute, QTcB (Bazett's formula) > 490 milliseconds (ms), and exposure to drugs known to cause TdP based on Crediblemeds.org. For the multivariate analysis, only old age, slow heart rate, QTcB > 490 ms, and exposure to drugs known to cause TdP were significant. The Hosmer-Lemeshow test was 0.89. A scoring system was invented based on the coefficients of these significant risk factors. The clinical prediction rule has an AUROC of 0.98 (95%CI: 0.97-0.99). In the low risk group, likelihood ratio for TdP was 0.02 (95%CI: 0.01-0.06), and in the high risk one, the likelihood ratio was 120 (95%CI: 30-479).

Conclusions: This clinical prediction rule using multiple risk factors, including QTcB > 490 ms, provided very high performance for predicting TdP in those who were exposed to QT-prolonging drugs. However, this rule still needs to be validated.

#18590 : Descriptive Study of Medical Toxicology Consultations in the Faculty of Medicine Vajira Hospital, Bangkok

Authors:

Rittirak Othong (1), KAEWWALEE KAEWNIL (2)

1. Residency Program Director, Vajira Hospital, Navamindradhiraj University, Bangkok, THAILAND

2. , Vajira Hospital, Navamindradhiraj University, Bangkok, THAILAND

Keywords: Intoxication, Poisoning, Substance abuse, Urban medicine, ToxIC Registry

Abstract :

Introduction: Toxicological Services, Department of Emergency Medicine, Vajira Hospital has joined the Toxicological Investigators Consortium (ToxIC) in August 2013. ToxIC was established in 2009 in the United States of America (USA) by the American College of Medical Toxicology (ACMT) to support multicenter research studies. This study aimed to explore the incidence of toxicological exposures in Vajira Hospital that have been available to the ToxIC Registry.

Methods: This was a descriptive retrospective cohort study. Patients experienced toxicological exposures and had been consulted on to the Vajira Hospital's Toxicological Services, Department of Emergency Medicine between 1 August 2013 and 31 December 2017 were included. The authors excluded those whom were recorded in the toxicological logbook but the case report forms (CRFs) and the corresponding data in the Toxicological Investigators Consortium (ToxIC) database were missing.

Results: Over the 53-month-period, 1,293 cases with a history of toxicological exposures were enrolled. The majority (58.4%) were male and aged between 19-65 years old. Approximately half of the cohort were exposed to pharmaceuticals, followed by animal toxins (30%) and non-pharmaceuticals (18%). By intention, 55.3% of the intoxicated patients were intentional, predominately with tramadol (13.5%) abuse. The females' attempted self-harm rate was 2-time higher than that of males'. Unfortunately, 24 cases were reported dead in our registry, even though only 15 of them proved to be toxicology related.

Conclusions: In contrast to the national level, our cases which partially represented toxicological cases in the largest urban area of the country were predominated by snakebites, tramadol and acetaminophen overdoses, while pesticides and household product exposures were more common nationwide.

#18592 : Effects of methoxyflurane as an analgesic agent for trauma management in the pre-hospital settings in Slovakia**Authors:**

Adriana Kilianova (1), Volodymyr Kizyma (1), Eva Havlikova (1)

1. EMS, Falck Zachranna, Košice, SLOVAKIA

Keywords: methoxyflurane, trauma patient management, pre-hospital settings, pain relief score, drug efficacy and safety

Abstract :

Background: Methoxyflurane (Penthrox) has been extensively used as an analgesic agent by Emergency Medical Service (EMS) providers in Australia since 1974. However, only in 2017 the Penthrox methoxyflurane inhaler was introduced in some European countries including Slovakia for the treatment of moderate to severe pain in adult trauma patients. Falck Zachranna, the leading EMS provider in Slovakia, included the medicine into its paramedic staffed ambulances drug portfolio in 2018. The implementation project process consisted of some steps such as development of a checklist and a protocol for the drug administration and subsequent education and training sessions for the paramedic personnel. The aim of our study was to evaluate the efficacy and safety of methoxyflurane administered by our paramedics for one year time since the project beginning.

Methods: Authors used case series research design and retrospectively analyzed 127 protocols of cases where trauma patients with moderate to severe pain were treated with Penthrox. The analyzed protocols were filled by the Falck Zachranna paramedics from May 2018 till April 2019. Authors mainly focused on such parameters as subjective pain relief scores and significant side effects after the Penthrox usage, and also paramedics and patients satisfaction with the drug administration. Subjective pain relief was evaluated by the visual analogue scale (VAS), patients gave their scores before and after 10 and 20 minutes of the drug application. Side effects were considered to be significant when they severely compromised cardiovascular, respiratory or central nervous systems on the scene and required additional actions from paramedics. Paramedics and patients satisfaction levels with the drug administration (technical aspects) were measured with the 5-points Likert scale.

Results: During one year time our paramedics administered Penthrox to 127 patients from 18 to 92 years old (mean age approximately 52 years), predominant diagnoses were femur fractures (63% of all the cases). The mean figures for the pain scores were the following: before administration 8.07 ± 1.133 , 10 min after administration 5.94 ± 2.10 , and 20 min after administration 3.41 ± 2.12 . The median figures were 8, 5 and 3 respectively. The significance levels of both score changes (p) reached 0.01. Regarding significant side effects, only 1 case of severe bradycardia was reported (0.79% of all the cases). Totally, 91% of patients and 92% of paramedics were satisfied (or very satisfied) with the drug administration.

Conclusion: Authors believe that the reported figures of subjective pain relief and minimal significant side effects after the Penthrox methoxyflurane inhaler usage confirm the drug efficacy and safety when administered to adult trauma patients in the pre-hospital settings. Yet, the study needs to be extended to make the acquired statistical data more meaningful and persuasive.

#18596 : Qualitative observational assessment of the 6-steps of hand rubbing technique practiced among medical students, interns and residents at a tertiary center**Authors:**

Farah Alotaibi (1), Raghad Alotaibi (2), Lama Alotaibi (3), mazen barry (4)

1. Emergency Medicine Resident , National Guard Health Affairs, Riyadh , SAUDI ARABIA
2. Intern , King Khalid University Hospital , Riyadh , SAUDI ARABIA
3. intern , King Khalid University Hospital , Riyadh, SAUDI ARABIA
4. Assistant Professor and Consultant of Infections Diseases , King Khalid University Hospital , Riyadh, SAUDI ARABIA

Keywords: Hand hygiene, HH, Hand rubbing, Qualitative assessment, Saudi Arabia, Alcohol-based six hand rubbing

Abstract :**Background:**

Health care associated infection (HCAI) bears a huge burden around the world. Hand hygiene (HH) has been proven to be a cornerstone of its prevention. Several promotional campaigns and initiations helped in rising Healthcare workers (HCWs) compliance to HH but a negligible sum of evidence examined the technique practiced by HCWs especially among medical student, interns and residents, a segment that might have been overlooked as a cause of HCAI transmission.

Our aimed is to evaluate the quality of Hand rubbing (HR) technique among medical students, interns, and residents based on the 6-steps of HR recommended by the World Health Organization.

Methods:

We conducted a cross-sectional analysis from September 2017 to August 2018 at King Khalid University Hospital (KKUH) a tertiary center in the capital of Saudi Arabia. Convenient sampling was used to include students in clinical years, interns and residents rotating at KKUH. 1st and 2nd year students were excluded.

Data collectors requested participants to voluntarily perform the HR using an alcohol-based formulation in the hospital facilities and recorded their score from zero to twelve. For each step, two points were allocated for appropriate steps, one for incomplete and zero for missed steps. Time consumed and jewelry removal were also recorded. Data collectors underwent practice sessions and used video recording initially after taking a written consent.

Results:

Out of 377 total participants, 58.3% ($n=220$) were medical students in clinical years, 13.26% ($n=50$) were interns, and 28.4% ($n=107$) were residents. The mean age of participants was 24.1 ± 2.5 years, with 50.9% males and 49.07% females.

Only 2.65% ($n=10$) fulfilled the 6-Steps of HR completely. The median score for student in 3rd, 4th and 5th year students were (6.37), (7.16) and (7.45) respectively while interns scored (7.36) and residents (7.49) with a significant difference ($P= 0.016$). Surprisingly, junior residents scored better than seniors ($P=0.001$). Participates with previous HR training scored better than those who weren't with a mean score of (7.40) compared to (6.27) ($P<0.001$). Sufficient timing was achieved by 30.77% ($n=116$) participant. Removal of rings and accessories was performed by 49% of the participants wearing accessories.

Compliance to a specific step was best found in Palm-to-Palm rubbing 99.2%, while backs of fingers to opposing palms with fingers interlocked step had the lowest compliance 13.3%.

Conclusion:

Despite the possibility of a positive impact of Hawthorne effect from direct observation, 97.35% of our participants had an inadequate hand surface coverage and 69.23% didn't achieve sufficient timing.

In conclusion, the quality of HR practiced by Saudi students, interns, and residents in KKUH seems to lack the full and appropriate coverage of all hand surfaces and might serve as a medium for HCAI revealing a major gap that future effort shall emphasize on.

Our study was based in one center which might be a limitation for generalization. Also, there is a possibility of observation bias, which we tried to limit by special training sessions and initial video recording.

Trial Registration / Funding Information (only) :

None

#18599 : Major haemorrhage protocol in the emergency department – a quality improvement project

Authors:

Ross McLeod (1), Ross McLeod (1), Monica Wallace (1)

1. Royal Alexandra Hospital, Paisley, NHS, Glasgow , UK

Abstract :

Introduction The major haemorrhage protocol (MHP) gives a framework to enhance communication and allow rapid release of blood components. Despite evidence demonstrating its efficacy, it has certain limitations. Human factors and logistical problem can affect its success and thus MHPs should be regularly reviewed. This project looks at MHP activations in two district general hospitals in Greater Glasgow and Clyde (GGC). **Methodology** All MHP activations over a 12-month period at Royal Alexandra Hospital (RAH) and Inverclyde Royal Infirmary (IRH) were identified. Data was collected using lab databases and the clinical portal system. **Results** Twenty-two MHP activations were included. The most common reason for MHP activation was gastro-intestinal bleed (n=12). The first group and save sample reached the lab in less than 15 minutes in all but one case. Twenty-two patients received their first blood transfusion within 15 minutes. The further two cases received blood within 28 and 45 minutes. Blood component usage was variable in both trauma and non-trauma patients reflecting the diverse nature of the patient's trajectories. The majority of trauma patients received tranexamic acid within three hours (88.9%). There was component wastage in 10 of the protocol activations. There were 13 issues arising from the MHPs, ranging from communication problems (n=8) to problems with blood samples (n=4). **Discussion** Although many situations are managed appropriately in conjunction with the guidelines, logistical problems and human error still occur which can contribute to delay and affect outcome. Reflection of these issues can guide quality improvement for future situations.

#18600 : Comparison of CT head interpretation between emergency physicians and radiologists in emergency department patients**Authors:**

ozlem yigit (1), tugay mert (1)

1. , akdeniz university, antalya, TURKEY

Keywords: Brain tomography, emergency medicine physician, BBT interpretation, acute intracranial pathology

Abstract :

The patients presenting with complaints such as trauma and headache, altered consciousness, acute neurological deficits and etc. count an important number in the emergency department (ED) population. In these patient groups, brain tomography is the most widely used diagnostic method for identifying intracranial pathologies. The ability of an emergency medical specialist to recognize and correctly interpret major pathologies such as bleeding or early signs of stroke in patients with acute complaints on the CT can play an important role in preventing delays in patient management. Our aim in this study was to compare the interpretation of the radiologist with the interpretation of the emergency physician of the brain tomography images that was ordered in the ED.

Between 01.01.2016 and 31.12.2016, the images of 6640 patients who attended to Akdeniz University Hospital Emergency Department and who had head CT scan were examined. Images of a total of 120 patients with and without acute pathology were selected for CT imaging. Twenty emergency residents were included in the study to interpret the images. Each of the selected images were evaluated by the emergency residents and the findings were recorded. Residents were grouped according to their seniority, and each group's comments were compared with the radiologist's interpretation and their compliance was analyzed.

Intracranial hemorrhage was detected in 51.7% of the patients and these hemorrhages were epidural hemorrhage in 12.5%, subdural hemorrhage in 20%, subarachnoid hemorrhage in 20%, intraparenchymal hemorrhage in 14.2% and intraventricular hemorrhage in 8.3% of the patients. Acute infarction was found in 12.5% of the patients, intracranial mass in 12.5%, cerebral edema in 18.3%, fracture in 24.2%, and shift in 15%. In general, it has been observed that the compliance with radiology (mean kappa value 0.755) is good in emergency residents in hemorrhage detection. Moderate compliance (mean kappa value 0,566 and 0,440) in subdural and intraventricular hemorrhage was found, and good compliance was observed in other hemorrhage types. It was found to be very good fit (mean kappa value 0.830 and 0.925) in calvarial fracture and midline structures shift detection. Acute infarction, cerebral edema, and mass detection of residents were found to be good.

With the increase in practical and theoretical training in CT interpretation in emergency medical education, compliance rates can be further increased. A physician who has just started an emergency residency had lower rates however at the end of the training period, he/she will become an expert with sensitivity and spesivity close to radiologist commentary on CT interpretation.

#18601 : Comparison of a clinical prediction rule and clinician suspicion in identifying children with intra-abdominal injury after blunt torso trauma**Authors:**

Sevinç Taş Çaylak (1), Elif Yaka (2), Serkan Yılmaz (2), Nurettin Özgür Doğan (2), Murat Pekdemir (2)

1. Emergency Department, Kocaeli University, School of Medicine, Kocaeli, TURKEY
2. Emergency Department, Kocaeli University, School of Medicine, Kocaeli, TURKEY

Keywords: children, abdominal injury, computed tomography, clinical prediction rule

Abstract :**Introduction:**

Intra-abdominal injury (IAI) is a major cause of morbidity and mortality in children. Abdominal computed tomography (CT) is the criterion standard imaging modality in the diagnosis of pediatric intra-abdominal injury. However, there are significant concerns regarding CT scanning, especially on the potential risk of radiation-induced malignancies.

Initial trauma evaluation of children are frequently made by emergency physicians at nonpediatric trauma centers with substantial variability of CT scanning. Injured children receive twice the radiation dose at nonpediatric trauma centers. Considering the drawbacks of CT scanning in children, a 7-item clinical decision rule was derived by Pediatric Emergency Care Applied Research Network (PECARN) to identify children with intra-abdominal injury requiring acute intervention.

We aimed to externally validate the prediction rule by comparing with unstructured clinician suspicion in identifying children at very low risk of intra-abdominal injury for whom abdominal CT scanning could safely be avoided.

Methods:

This was a retrospective review of pediatric patients with blunt torso trauma initially evaluated in an academic emergency department between 2011-2019. All patients

IAI was defined as any radiographically or surgically diagnosed injury to any of spleen, liver, urinary tract, gastrointestinal tract (including associated mesentery), pancreas, gallbladder, adrenal gland or intra-abdominal vascular structure. Acute intervention (IAI-I) was defined by an IAI associated with any of death, therapeutic intervention at laparotomy, angiographic embolization, blood transfusion for anemia or administration of intravenous fluids for ≥ 2 nights in those with pancreatic or gastrointestinal injuries.

The prediction rule consisted of no evidence of abdominal wall trauma or seat belt sign, Glasgow Coma Scale score greater than 13, no abdominal tenderness, no evidence of thoracic wall trauma, no complaints of abdominal pain, no decreased breath sounds, and no vomiting. Performing CT scanning were considered as clinician suspicion. We calculated the test characteristics for both the rule and clinician suspicion for IAI presence and intervention requirement and compared the sensitivities for IAI.

Results:

Among 768 children, 48 (6.25%) had IAI, 21 (2.73%) of whom required acute intervention. Abdominal CT scans were obtained for 453 (59%) patients.

Thirty-nine children out of 48 with IAI were correctly predicted by the PECARN rule, yielding a sensitivity for IAI of 81.25% (95%CI:66.9 to 90.6) and specificity of 73.19% (95%CI:69.8 to 76.4). The rule had 90.5% (95%CI:68.2 to 98.3) sensitivity for IAI requiring intervention with a negative predictive value of 99.6% (95%CI:98.5 to 99.9).

Clinician suspicion predicted 45 of 48 IAI and all IAI-I yielding sensitivities of 93.8% (95%CI:81.8 to 98.4) and 100% (95%CI:80.8 to 100) respectively at the expense of doubling obtained CT rates than that of the rule. Sensitivities of the rule and clinician suspicion were similar ($p=0.146$).

Conclusions:

None of the rule and clinician suspicion alone could predict all IAIs in this study. However, implementation of the rule as an adjunct to clinician judgement would have decreased unnecessary abdominal CT use by half in children with blunt torso trauma.

#18602 : Burden on the back-steroids in acute radicular back pain

Authors:

Amit Jaiswal (1), Virupaksha Sadhunavar (2), Saurav Bhardwaj (2), Srishti Gupta (3)

1. , Sherwood Forest NHS Trust, Sutton in Ashfield, UK

2. , NHS, Birmingham, UK

3. , NHS, Nottingham, UK

Keywords: Back pain, radiculopathy, steroids, oral/parenteral administration, pain relief

Abstract :

Case Summary:

A 44 year old male attended emergency department with acute lower back pain radiating to left calf. He had a medical history of sciatica. The pain worsened despite taking over-the-counter analgesia. He was admitted for the pain control.

Back pain poses a greater economic burden than any other disease. It is as costly as coronary artery diseases (CAD), stroke and arthritis. The best estimate for the direct cost of back pain in the UK is £774 million with an additional estimate of £4.338 billion related to lost employment days. However, this pales into insignificance compared to the cost of informal care and the production losses which is £10.668 billion. Back pain accounts for 13% of sickness absences in the UK

Role of Steroids: Compression, inflammation and ischaemia of the spinal nerve root by the herniated disc leading to disc oedema causing LBPR. An animal study has suggested that steroids effectively reduce hyperalgesia and excitation of the nerve root⁹ due to its anti-inflammatory effects. Low back pain with radiculopathy is also called sciatica

THREE PART QUESTION:

Does the use of [oral or parenteral steroids] improve [symptoms of pain] in the patient [with acute low back pain with radiculopathy]?

SEARCH STRATEGY

OpenAthens:NHSevidence,journalsanddatabases:CINHAL/EMBASE/Medline/Health,BusinessElite/AMED,BestBETs,CochraneLibrary,ProQuest,

SEARCH RESULTS

225 papers were identified, out of which 224 were unique and 1 was duplicate. On applying inclusion and exclusion criteria 15 papers were deemed relevant. From the remaining 15 papers, 8 were selected for the meta-analysis based on exclusion criteria.

Outcome:

Pain relief: Quantitative data were available for 5 studies. The evidence for pain relief attributed to the use of steroids did not achieve statistical significance when combined using the random effect model. The test of overall effect was 1.62 with $p = 0.11$ and the diamond crossed 'the line of no effect'. The heterogeneity had been noted to be 46%.

Binary data was available for 5 studies this was combined using random effect model. This again did not achieve statistical significance ($p = 0.28$). The effect was measured using risk ratio with heterogeneity of 31% and test of overall effect as 1.08.

The overall number needed to treat was 11. The adverse events were reported in 6 of the 8 studies. Overall, the number needed to harm was 5. Based on the type of steroid used the cost can range from £4 to £88. The adverse events reported were mild transient hyperglycaemia, stomach ache, bloating, drowsiness and mood swings. None of them needed any treatment.

Conclusion:

The outcome of my meta-analysis did not show any statistically significant improvement in clinical outcomes that could be attributable to the use of steroids ($p = 0.28$ and $p = 0.11$ for binary and quantitative data respectively). It means the positive findings could be merely by chance. Nonetheless, the plot result seems to lie more towards the side of steroid. Therefore, a scope for further robust studies with correctly powered and larger sample size in future is recommended.

#18603 : Measuring vital signs in febrile children at the emergency department. An observational study on adherence to the NICE recommendations in Europe.

Authors:

Josephine van de Maat (1), Hein Jonkman (2), Elles van der Voort (3), Santi Mintegi (4), Alain Gervaix (5), Silvia Bressan (6), Henriette Moll (7), Rianne Oostenbrink (7)

1. Academic hospital, ErasmusMC-Sophia, rotterdam, THE NETHERLANDS
2. Dept. General pediatrics, ErasmusMC-Sophia, Rotterdam, THE NETHERLANDS
3. General Pediatrics, Erasmus MC - Sophia, Rotterdam, THE NETHERLANDS
4. Pediatric Emergency, Cruces University Hospital , Bilbao, SPAIN
5. pediatrics, University Hospital, Geneva, SWITZERLAND
6. Dept Emergency care, University Hospital of Padua, Padova, ITALY
7. Dept. General Pediatrics, ErasmusMC - Sophia, Rotterdam, THE NETHERLANDS

Keywords: pediatrics, vital signs, standards of care

Abstract :**Background**

Fever is the most common reason for children to attend the emergency department (ED). Abnormal vital signs can aid physicians in identifying children with serious infections amongst a majority that presents with mild, self-limiting diseases. The NICE guideline for febrile children under five recommends the routine measurement of four distinct vital signs. This study evaluates daily practices regarding the measurement of pediatric vital signs in European EDs and the level of professional adherence to this particular NICE guideline recommendation.

Methods

Prospective observational study in children <16 years old that presented with a fever to 28 European EDs in 11 countries. The frequency of documentation was quantified for vital signs in general and in subgroups (per country, discharge diagnosis, and triage level). Professional adherence to the NICE recommendation to measure temperature, heart rate, respiratory rate, and capillary refill in all children under five presenting with a fever was subsequently reviewed.

Results

In the 4560 included patients (54% male, median age 2.4 years (IQR 1.1 – 4.7), 77% under five), temperature was measured most frequently (97%), followed by capillary refill (86%), heart rate (73%) and respiratory rate (51%). Saturation was measured in 56% of cases. In children under five (n=3505), a complete measurement of the four vital signs recommended by the NICE was performed in 47% of patients. Triage level, country and discharge diagnosis all influenced the likelihood of children undergoing complete measurements.

Conclusion

Measuring vital signs in febrile children at the ED is done in a highly variable manner across different European countries and several patient groups. The overall adherence to the NICE recommendation to measure four vital signs in all febrile children under five is moderate. Future research may elicit explanations for these variations in practice and contribute to develop evidencebased management strategies and support their implementation across Europe.

Trial Registration / Funding Information (only) :

On behalf of REPEM Research European Pediatric Emergency Medicine Network

#18604 : Dehydration levels amongst staff in the Emergency Department**Authors:**

Fazle Alam (1), Hirushi S Jayasekera (1)

1. , Walsall HealthCare NHS Trust, Walsall, UK

Keywords: Dehydration, Staff, Emergency Department

Abstract :

Back ground:

It is noted internationally that typical Emergency Department shifts can be long and physically demanding. Hydration affects cognitive ability and mood. Dehydration as little as 2% of total body weight affect both physical and cognitive performance.

Aims:

To evaluate the dehydration levels amongst members of staff in the Emergency Department not only at the end of the shift but throughout the working day. Following this, to collate and analyse data, with the aim of devising an intervention to further improve hydration levels amongst staff.

Method:

Randomised prosoective observational study of ED staff members (volunteers).

A poster detailing the project in brief was printed and put up in both the male and female (password protected) staff toilets of the A&E Department. It was stressed that the urine samples provided were to be left anonymous in the sample boxes provided. The 24 hour working day was split into three 8 hour time slots. These were labelled: 'Early Morning' (00:00 to 08:00), 'Morning' (08:00 to 16:00) and 'Evening' (16:00 to 00:00). Urine bottles were handed to the same staff members at the start of their shift and the middle of their shift.

The concentration of ketones in the sample tested were catagorised as: 'nil', 'trace', '1+', '2+' or '3+'. Similarly, the concentration of specific gravity (SG) once recorded, was catagoried as follows: 'Well Hydrated (SG<1.007)', 'Partially hydrated (SG1.007-1.010)' and 'Dehydrated (SG>1.1010)'. Results were documented in a table, data collated.

Results:

70% of the staff tested were positive for ketonuria; amongst which the majority (39%) had only a trace of ketones in their urine. This was followed by 29% having 'nil' ketones, 16% having '3+' and 13% of the staff having '1+' ketones in their urine. Dehydration levels based on specific gravity showed that 80% of the staff were 'dehydrated', 15% 'partially dehydrated' and 5% 'well hydrated'. Most staff were dehydrated in the working hours between 16:00 to 00:00 (classed as 'Evening'). The breakdown of the figures during the hours labelled 'Evening' showed that 7.1% of the staff are 'well hydrated' as opposed to 93% of staff who are 'dehydrated'. This is a statistically significant difference ($p=0.000008$) between the number of staff dehydrated as opposed to those who were hydrated. Similarly, this is reflected in the other two time slots tested 'Early morning' and 'Morning' hours respectively ($p=0.001148$ and $p=0.00275$).

Discussion and Conclusion:

70% of the staff tested were positive for ketonuria. Most staff were dehydrated in the working hours between 16:00 to 00:00.

Our results demonstrate that 70% of the staff were positive for ketonuria which in effect, means that there was significant dehydration amongst staff members. This is also reflected through readings of specific gravity which showed that 80% of the staff were dehydrated whilst 5% were well hydrated.

Coupled together with the evidence that hydration status affects cognitive ability and mood, it is possible to suggest that dehydration levels may indirectly affect patient outcome. It highlights the importance of interventions to enhance hydration levels amongst staff.

Trial Registration / Funding Information (only) :

No Funding

#18605 : The effects of thoracic cage dimension and chest subcutaneous adipose tissue on outcomes of adults with in-hospital cardiac arrest: A retrospective cohort study**Authors:**

Junzhao Liu (1), Sheng Ye (1), Yarong He (1), Yu Cao (1)

1. , West China Hospital, Sichuan University, Chengdu, CHINA

Keywords: Thoracic cage dimension; Cross-sectional area; Subcutaneous adipose tissue; In-hospital cardiac arrest; Compression depth

Abstract :

Background: Increasing evidence has revealed that an adequate but uniform compression depth may not be suitable for all adults with various body sizes. The thoracic anteroposterior (AP) diameter is a commonly used parameter to reflect the thoracic cage dimension. Delivery of an adjustable compression depth based on thoracic AP diameter is recommended in pediatric resuscitation guidelines, but whether the thoracic cage dimension has impact on the prognosis for adult patients with cardiac arrest remains under debate. revealed the association between increasing SAT depth and compression inadequacy. But to date, whether the SAT-caused compression inadequacy leads to adverse outcomes of patients with cardiac arrest was unknown. This study aimed to investigate the associations between thoracic cage dimension, chest subcutaneous adipose tissue (SAT) depth and outcomes of adults with in-hospital cardiac arrest (IHCA).

Methods: We retrospectively evaluated patients with IHCA between January 2016 and October 2017. The thoracic cage transverse diameter, internal AP diameter, cross-sectional area, anterior and posterior SAT depths were measured in computed-tomography (CT) images using the three-dimensional visualization software (Mimics Interactive Medical Image Control System, Version 17.0, Materialize Company, Belgium). Using logistic regression models, we determined the adjusted associations between thoracic cage dimension, SAT depths and the prognosis for IHCA. The primary outcome was sustained return of spontaneous circulation (ROSC) and the secondary outcome was survival to hospital discharge.

Results: Among 423 IHCA patients, 258 patients achieved ROSC and 70 survived to discharge. Smaller cross-sectional area and posterior SAT depth were significantly related to ROSC. Smaller posterior SAT depth was associated with ROSC. After multivariate adjustment, the smaller cross-sectional area was independently associated with ROSC (Odds ratio [OR] 0.99, 95% confidence interval [95%CI] 0.99-1.00; $p = 0.008$) and survival to discharge (OR 0.99, 95%CI 0.98-1.00; $p = 0.024$), and the smaller posterior SAT depth was independently related to ROSC (OR 0.65, 95%CI 0.44-0.96; $p = 0.030$), whereas no relation to survival to discharge was found.

Conclusions: In adults with IHCA, the smaller thoracic cage dimension and posterior SAT depth are associated with better survival. An adjustable compression depth based on the thoracic cage dimension might be better than the "one-size-fits-all" compression depth for resuscitating CA patients. In addition, physicians should pay extra attention to compression efficacy when resuscitating obese patients.

Trial Registration / Funding Information (only) :

The present work was supported by the National Natural Science Foundation of China (Grant Nos. 81471836 to YC), and the Discipline Excellence Development 1•3•5 Project of West China Hospital, Sichuan University (Grant No. ZYJC18019) to YC.

#18611 : Victims of the road accidents at the Emergency Room of Sibiu**Authors:**

Cristian Ichim (1), Ana Daniela Țăran (2), Iulia Andrei (2), Maria-Ioana Oana-Albu (2), Ștefania Noemi Opreș (2), Răzvan - Marius Dobre (2), Diana - Ionela Checiu (2)

1. UPU-SMURD SIBIU ROMANIA, Faculty of Medicine, "Lucian Blaga" University of Sibiu, Sibiu, ROMANIA
2. UPU-SMURD SIBIU ROMANIA, UPU-SMURD SIBIU ROMANIA, Sibiu, ROMANIA

Keywords: Road Accidents, Emergency Room, Cranio-Cerebral Trauma, Contusions, Poly-Traumatized.

Abstract :**Background:**

Road Accidents cause the occurrence of a large number of victims in Romania, trauma cases specifically requiring medical teams starting from Mobile Emergency Service for Resuscitation and Extrication, to complex surgery and the Intensive Care Teams. This aspects led to the need for a study, which emphasises several important elements, of the cases in the last three year. Thus, we used criterions like mainly pathology, the age and the annual distribution of the victims, area where the car crashed, association of alcohol consumption and the state in which the patient was brought to Emergency Room of Sibiu.

Methods:

We conducted a retrospective observational study on a total of 189.397 patients presented at the Emergency Room of Sibiu County Emergency Clinical Hospital, between 01.01.2016 and 31.12.2018.

Results:

From the total of 189.397 patients, in the Emergency Department were reported 1084 victims of road accidents.

We examined how many patients were brought in the Emergency Trauma Room every year and the results are:

2016 - 401 (36,99%) victims

2017 - 311 (28,69%) victims

2018 - 372 (34,31%) victims

The age distribution during the study was the following:

Age category 18-20 years old: 31 cases (2,85%)

Age category 21-30 years old: 298 cases (27,49%)

Age category 31-40 years old: 210 cases (19,37%)

Age category 41-50 years old: 209 cases (19,28%)

Age category 51-60 years old: 145 cases (13,37%)

We were interested to assess the areas from which patients were brought in the Emergency Room and the results are:

Urban Area: 738 (68,08%)

Rural Area: 346 (31,91%)

369 (34,04%) Patients had suffered *cranio-cerebral trauma* of which:

210 (56,91%) associated one or multiple Contusions

108 (29,26%) were Poly-Traumatized

17,80%, meaning 193 victims, drunk alcohol before driving and had positive results using Breath Test.

Discussion & Conclusions:

The main category of patients injured in crashes is included in the age range between 21 and 30 years old, mostly because lack of preventive behavior.

Although not statistically representative, it is clinically significant that a fairly large number (about one third) of victims presented *cranio-cerebral trauma*, so we can conclude the fact that vehicles, even if equipped with modern safety systems, are still not prepared to efficiently protect the cephalic extremity, which is actually the most exposed area of the body in the case of road accidents.

There are still situations when drivers are choosing to drive despite having consumed alcohol before.

The large number of victims brought to the Emergency Room from the Urban Area is primarily due to heavy traffic in the crowded cities.

#18613 : Incidence of cranio-cerebral trauma in Sibiu County, Romania**Authors:**

Diana-Ionela Checiu (1), Aurel Sbarcea (1), Razvan-Marius Dobre (1), Cristian Ichim (1), Viorel Tobias (1), Horatiu Oarga (1)

1. UPU-SMURD Sibiu Romania, UPU-SMURD Sibiu Romania, Sibiu, ROMANIA

Keywords: craniocerebral trauma, Glasgow Coma Scale, causes, coma

Abstract :

Background

Considering that the number of craniocerebral traumas is rising among the population, with most of the victims requiring to be treated as emergency, we aimed to track the incidence of those medical situations in prehospital, in Sibiu and surroundings.

Materials and methods

The study was performed through a retrospective observational method on a number of 145.683 cases that were encountered on the MIC (Mobile Intensive Care) SMURD ambulance from Sibiu between January 2017 and April 2019. During this period of time, there were a total of 930 cases of craniocerebral trauma.

Results & discussion

From these medical situations ,504 (54,19%) came from the urban area and 426(45,81%) from the rural area. The distribution by age and gender : 192(20,65%) under 18 years old, of which 126(65,63%)were male and 66(34,38%) female ; 282 (30,32%) between 19 and 39 years ,of which 174(61,70%) male and 108(38,30%)female; 228(24,52%) between 40 and 59 years ,of which 156(68,42%) male and 72(31,58%)female;204(21,94%) between 60 and 70 years ,of which 120(58,82%)male and 84(41,18%)female and 24(2,58%) over 80 years,of which 50% male and 50% female.

Causes include: vehicle-related collisions 576(61,94%),fall from height 180(19,35%),fall from the same height(example:faintness,alcohol intoxication) 138(14,84%),severe blows to the head with hard objects 30(3,23%) and 6(0,65%)other causes.

The distribution by type of the injury, 462(49,68%) of them were classified as closed (no cut to the skin) and 468(50,32%) as penetrating. Furthermore, 384(41,29 %) of these patients presented multiple severe traumatic injuries, of which 60(6,45 %) were dead on arrival, and 288(30,97 %) presented multiple minor injuries.

Using the Glasgow Coma Scale (GCS), patients were divided into the broad categories of 618(66,45%) mild, 60(6,45%) moderate and 252(27,10%) severe injury. Those 618 who were classified as having a mild craniocerebral trauma, were divided again on the severity of the injury, into 4 more categories: Grade 0 (without loss of consciousness) a number of 414(66,99%), Grade 0 with high risk(those who use drugs,alcohol,or have epilepsy) a number of 30(4,85%), Grade 1(loss of consciousness from several minutes, persistent headache, repeated vomiting or nausea)a number of 138(22,33%) and Grade 2 (a GCS score of 13-14 points more than 30 minutes)a number of 36(5,83%).

Those 252 patients who were classified as having a severe craniocerebral trauma were divided again into 4 grades of coma: 18(7,14%) Grade I coma, 54(21,43%) Grade II coma,36(14,29%) Grade III coma and 144(57,14%) Grade IV -severe coma.

From the point of view of the treatment that has been applied, 356 (38,28 %) received only analgesics, and 190 (20,43 %) received analgesics combined with sedation.

Conclusions

The distribution by gender and age shows the highest incidence occurs in males compared to females especially in those under 40 years old. The majority of these medical situations came from the urban area. Using GCS it was shown that mild craniocerebral trauma has the highest incidence. Being a major cause of death and disability, it is important to have a detailed classification to apply the most efficient and rapid treatment method.

#18614 : Walking away from unnecessary radiographs in the emergency department**Authors:**

Mohammad Chaudhry (1), Foroughi David (1)

1. Emergency Department, George Eliot Hospital NHS Trust, Nuneaton, UK

Keywords: radiographs, emergency department, knee, ankle, ottawa

Abstract :

The emergency department of the George Eliot Hospital treats over 83700 patients a year. Over the last two years it had been noticed by the department of radiology ,that radiographs requested for knee and ankle injuries had increased. This was compounded by the fact that a large number of these requests resulted on no positive findings, but increase stay of patients in the department affecting the flow and increased use of resources. The General Medical Council exhorts clinicians to be judicious with the use of the resources of the National Health Service.

We undertook a survey of the clinical notes and radiographs of 100 cases presenting with ankle injuries, and 100 cases of knee injuries. We analysed the quality of history taken and examination findings before the radiographs were requested and also looked into the findings on the radiographs. These findings were compared with the standards set in the well known and validated Ottawa rules. It was concluded that a closer scrutiny at history taking and awareness of established guidelines makes patient management and flow through the emergency department more efficient. This will lead to better quality of care and resource utilization.

Trial Registration / Funding Information (only) :

This was registered at the hospital survey/audit program.

#18619 : Use of jlb® jugular catheter as central venous catheter introducer in emergency condition.

Authors:

Lucio Brugioni (1), Elisabetta Bertellini (2), Marco Barchetti (3), Andrea Borsatti (1), Pietro Martella (4), Massimo Girardis (5), Matteo Nicolini (6), Giovanni Tazzioli (7), Filippo Schepis (8), Roberta Gelmini (9), Marcello Bianchini (8), Serena Scarabottini (10), Francesca Mori (10), Angelo Tricoli (10), Mirco Ravazzini (10)

1. medicina interna e area critica, AOU modena, modena, ITALY
2. anestesia e rianimazione 2, AOU modena, modena, ITALY
3. pronto soccorso e medicina d'urgenza, OC Sassuolo, modena, ITALY
4. medicina interna ed area critica, AOU modena, modena, ITALY
5. anestesia e rianimazione 1, AOU modena, modena, ITALY
6. anestesia e rianimazione , AOU modena, modena, ITALY
7. chirurgia senologica, AOU modena, modena, ITALY
8. gastroenterologia, AOU modena, modena, ITALY
9. chirurgia generale, AOU Modena, modena, ITALY
10. emergency medicine residency, university of Modena and Reggio Emilia, modena, ITALY

Keywords: central venous catheter introducer, over-the-needle technique, polyurethane

Abstract :**Introduction**

Using central venous catheter (CVC) is a routine clinical practice in critical patient nowadays. Central line placement is not risk-free. CVC complications are about 14-15%. CVC insertion using ultrasound technique allows reduction of complication and number of attempts, increasing the success rate. The use of CVC kit is very common. Although the procedure is standardized, there could be complications, especially in the initial phase of procedure, called early complications.

Intraprocedural complications increase in line with patient state of consciousness, collaboration grade, especially in initial phases of the procedure (from the jugular vein puncture to seldinger introduction, while the needle is in site) and depend on operator practical skills.

The aim of the study is to evidence the reduction of early CVC complications using JLB® catheter used as introducer for internal jugular vein catheterization with over-the needle technique.

Materials and methods

The study was conducted in gastroenterological hemodynamic unit of Policlinico Hospital of Modena. 110 cases, mean age 58 years old (YO), subjected to hemodynamic procedures using JLB® catheter as introducer. The device was placed by gastroenterologists and emergency medicine residents, with different experience in CVC and JLB® insertion technique. The jugular catheters JLB® were 18, 17 or 16 Gauge and 6 or 7 cm of length.

In the major of cases JLB® catheter was placed with one attempt, 3 cases required two attempts. There were no early complications.

Conclusion

The use of JLB® jugular catheter in Gastroenterological Hemodynamic Unit of Policlinico Hospital of Modena as introducer is safe, easy and without early complications, also considering the different experience of the providers and the innovative device and technique.

We can state that the use of JLB® with over the needle technique in jugular site reduces early complication risks both in conscious and unconscious patients because minimizes the needle dwell time in the vessel. JLB® device is in polyurethane material and this fact prevent complications due to uncontrolled patient or provider movements during the seldinger placement. It is particularly important in emergency situations where patients are not collaborative.

The small number of cases is an obvious limit for definitive conclusions but the first data are very encouraging.

#18622 : Two time switch from central venous catheter (cvc) or peripherally inserted central catheter (picc) to jlb® in critical patients

Authors:

Lucio Brugioni (1), Elisabetta Bertellini (2), Marco Barchetti (3), Andrea Borsatti (1), Pietro Martella (4), Massimo Girardis (5), Matteo Nicolini (6), Giovanni Tazzioli (7), Filippo Schepis (8), Marcello Bianchini (8), Roberta Gelmini (9), Serena Scarabottini (10), Francesca Mori (10), Mirco Ravazzini (10), Angelo Tricoli (10)

1. medicina interna e area critica, AOU modena, modena, ITALY
2. anestesia e rianimazione 2, AOU modena, modena, ITALY
3. pronto soccorso e medicina d'urgenza, OC Sassuolo, modena, ITALY
4. medicina interna ed area critica, AOU modena, modena, ITALY
5. anestesia e rianimazione 1, AOU modena, modena, ITALY
6. anestesia e rianimazione , AOU modena, modena, ITALY
7. chirurgia senologica, AOU modena, modena, ITALY
8. gastroenterologia, AOU modena, modena, ITALY
9. chirurgia generale, AOU Modena, modena, ITALY
10. emergency medicine residency, university of Modena and Reggio Emilia, modena, ITALY

Keywords: switch, introducer, over the needle technique, polyurethane

Abstract :**Introduction**

Patients with poor peripheral venous access are frequently hospitalized, obese or thin. Moreover during the recovery some patients will receive intensive care. In emergency setting vascular access is crucial and it's up to the clinician to predict possible deteriorations and to implement the measures to deal with instability, also planning appropriate vascular access.

The use of JLB® device in Policlinico of Modena hospital, placed by ultrasound in internal jugular vein or basilic vein is a routine practice and it is safe, easy and a good cost effectiveness. This device was successfully used as introducer in particular in those patients with critical conditions.

In some patients was also necessary to place

CVC or PICC two or three days later the placement of JLB® device. This study demonstrate the possibility to have a rapid switch to advanced devices if necessary in a safe and rapid way.

Material and methods

This study take in exam 12 cases of JLB® to CVC conversions and 12 cases of JLB to PICC conversion in Internal Medicine Unit of Modena Policlinico, Intensive Care Unit and Emergency Room of Baggiovara Hospital. The JLB® device was placed in internal jugular vein or basilic vein by residents or attendings with different experiences with JLB®, CVC or PICC insertion technique. The conversion manoeuvre was performed by attendings of different units. JLB® device remained in situ from 6 to 18 hours for CVC and from 72 to 240 hours for PICC before the switch procedure. No complications were registered during the JLB® placement neither during the conversion manoeuvre. CVC, PICC and JLB® tip cultures were negative.

Conclusion

Switch manoeuvre from JLB® device to CVC or PICC is possible and also safe; no early or late adverse events were recorded. Despite the very small number of cases, the JLB® device is precious because allows a rapid and safe venous access for drug infusion, and if necessary an effective switch to advanced devices. The catheter tip culture were negative; both JLB® placement and CVC or PICC switch were bed side procedures with clinical and organizational advantages.

#18624 : Fibrinolysis with streptokinase of ST segment elevation myocardial infarction: bleeding risk of elderly patients**Authors:**

Hela ben Turkia (1), sana tabib (2), Hager Touj (2), morsi ellouz (3), saoussen chiboub (3), Jamila Habli (4), Souad Chkir (4), hanene ghazeli (2), Sami Souissi (5)

1. urgences, emergency departement of regional hospital of Ben Arous, ben arous, TUNISIA
2. emergency department , regional hospital of Ben Arous, ben arous, TUNISIA
3. emergency department , emergency departement of regional hospital of Ben Arous, ben arous, TUNISIA
4. Cardiologic unit, regional hospital of Ben Arous, ben arous, TUNISIA
5. emergency department , regional hospital of Ben Arous, Ben Arous, TUNISIA

Keywords: Acute heart failure, , acute respiratory distress, emergency, prognosis, lactate

Abstract :

Elderly patients presented at emergency department (ED) with ST segment elevation myocardial infarction (STEMI) are at risk of cerebral hemorrhage when fibrinolysis with Tenecteplase is done (*STREAM trial 2012*) .

In our practice Streptokinase (STK) is the most used fibrinolytic agent .

The aim the our study was to compare the prognosis of patients over 75 years old (>75) undergoing fibrinolytic therapy with STK for a STEMI versus patients less than 75 years old (≤ 75).

Methods:

Retrospective analysis of a prospective monocentric STEMI registry (from January 2009 to December 2018). We enrolled patients treated with STK (1.5 MU in 60 minutes).All patients received dual antipatelet therapy (Aspirin and Clopidorel) and heparin according to the age. Life threatening bleeding complications (transfusion > 2 globular pallet , cerebral hemorrhage haemothorax, haemo and retroperitoneum, hemopericardium, deep muscle hematoma and / or compartment syndrome, acute gastointestinal bleeding) was evaluated in ED. Two groups were compared, patients more the 75 years old and patients less than 75 years old.

Results:

Inclusion of 624 patients from the 1094 patients of the registry. Mean age=59+/-11 years old patients >75 (10%) .Sex-ratio=5.The comparative study found that the sex-ratio = 1 for >75 versus (vs) 7 for 75 vs two cerebral bleeding in patients ≤ 75 years

Conclusion:

In elderly patients with STEMI the strict application of Streptokinase fibrinolysis recommendations can avoid the additional risk of bleeding.

#18626 : Sepsis criteria play a limited role in referral of patients with fever by general practitioners: a prospective multicentre observational study.

Authors:

Lieke Claassen (1), Gideon Latten (1), Jochen Cals (2), Jean Muris (2), Patricia Stassen (3)

1. Emergency Medicine, Zuyderland Medical Centre, Maastricht, THE NETHERLANDS

2. Department of Family Medicine, Maastricht University, Care and Public Health Research Institute (CAPHRI), Maastricht, THE NETHERLANDS

3. Department of Internal Medicine, Division General Medicine, Section Acute Medicine, Maastricht University, Care and Public Health Research Institute (CAPHRI), Maastricht, THE NETHERLANDS

Keywords: Sepsis, qSOFA, SIRS, vital parameters, fever, primary care.

Abstract :

Objectives: General practitioners (GPs) encounter many patients with fever and need to decide which patients to refer to the emergency department (ED). This is an important decision because fever may be the first sign of life-threatening sepsis. In hospitals, the quick Sepsis-related Organ Failure Assessment (qSOFA) score and Systemic Inflammatory Response Syndrome (SIRS) criteria, both consisting mostly of vital signs, are used to recognize sepsis early. It is not known if GPs record qSOFA and SIRS and if it influences referral to the ED. The aim of this study is to investigate whether the GP measure all vital signs included in these scores in patients with fever, and whether the presence of sepsis criteria is associated with referral to the ED.

Methods: This prospective, observational, multicentre study included adult (≥ 18 y) patients with fever ($\geq 38.0^\circ\text{C}$) at two general practice cooperatives, open during out-of-office hours (GPC's) in the Netherlands, during two inclusion periods (1-9 September 2018 and 12-20 January 2019). We retrieved which vital signs (blood pressure (BP), heart rate (HR), respiratory rate (RR), temperature and Glasgow Coma Scale) were measured by the GPs and added those missing vital signs needed to complete qSOFA (SBP, GCS, RR) and SIRS criteria (HR, RR and temperature). We compared patients with qSOFA and SIRS of ≥ 2 points and those with lower scores regarding referral to the ED, ED visit, intensive care unit (ICU) admission within 7 days and 30-day all-cause mortality.

Results: In total, 108 patients were included. The qSOFA was completely assessed in 16 (14.8%) and SIRS in 29 (26.8%) patients. After completion of the vital signs, the qSOFA was ≥ 2 in 11 (10.2%) and the SIRS ≥ 2 in 69 (63.9%) patients. The GP could have scored qSOFA ≥ 2 in 6 of 11 (54.5%) and SIRS ≥ 2 in 22 (31.9%) of the 69 patients with the signs he had measured.

In total, 45 (41.7%) patients were referred to the ED. These included 90.9% of those with ≥ 2 qSOFA, and 49.3% of those with ≥ 2 SIRS criteria.

Out of the 63 unreferral patients, 6 (9.5%) patients with SIRS ≥ 2 , 2 (3.1%) with SIRS < 2 , and no patients with qSOFA ≥ 2 visited the ED within 7 days, all of them were admitted to the hospital. None of the unreferral patients were admitted to ICU. Three patients died within 30 days. All three patients had been referred by the GP and did have a SIRS ≥ 2 , and two a qSOFA ≥ 2 .

Conclusion: GPs working in a GPC recorded the items of the qSOFA in 15% and of SIRS in about a quarter of the patients. Although GPs do not measure all parameters, they (unknowingly) refer 90.9% of the patients with a qSOFA ≥ 2 , and only half of the patients with SIRS ≥ 2 . Nevertheless, no unreferral patients were

admitted to the ICU or died within 30 days. Although the sepsis criteria are not measured, the GPs seem to make the right decision without using the qSOFA or SIRS.

#18627 : Detection of drugs of abuse in acute intoxications by unknown substances attended in the emergency department**Authors:**

Pallas Oriol (1), Supervia August (1), Vilaplana Carles (2), Aranda M Dolors (3), Garcia-Algar Oscar (4), Cirera Isabel (1)

1. Emergency Department, Hospital del Mar, Barcelona, SPAIN
2. Emergency Laboratory, Laboratori de Referència de Catalunya, Barcelona, SPAIN
3. Emergency Department, Hospital del mar, Barcelona, SPAIN
4. Neonatology Department, Institut Clínic de Ginecologia, Obstetrícia i Neonatologia, Barcelona, SPAIN

Keywords: Intoxication; Unknown substances; Emergency department

Abstract :

Background: Drugs of abuse consumption is a major social problem worldwide and an important reason for consultation at the emergency room. The use of designer drugs is increasing and these can be overlooked by the usual methods of detection. Urine is the most used biological matrix since it offers a fast and semiquantitative detection by enzyme immunoassay (u-EIA). However it entails limitations such as the type of drugs of abuse included in the analysis, so many substances may not be detected.

The aim of this study was to identify the type of drugs of abuse consumed through their determination by chromatography in urine samples from acute intoxication cases due to ingestion of unknown substances in patients attended at the emergency room, and to compare with the results of u-EIA.

Methods: Consecutive patients from 17 years of age with acute intoxication due to consumption of substances of unclear composition were included. The recruitment of participants was done at the emergency room of an university hospital from January 21st to December 22nd 2017. Age, gender, vital signs, Glasgow score, and clinical and treatment data were recorded. In addition, alcohol co-ingestion, and final destination were too recorded. Determination of substances of abuse in the urine samples was done by u-EIA and subsequently by ultra-high-pressure liquid chromatography tandem mass spectrometry (HPLC). The drugs of abuse tested were sympathomimetics, cocaine, benzodiazepines, heroin and alcohol.

Results: A total of 20 patients were included. The mean age was 27.4 years, 85% were men, and 60% had consumed alcohol. The average Glasgow score was 12.1, with 7 patients (35%) with a score lower than 13 on admission. Ten patients (50%) were agitated. Only one patient required orotracheal intubation. Sixty patients (80%) needed administration of some treatment. Two patients required hospital admission. No patient died nor was admitted to the ICU.

The presence of any drug of abuse by HPLC was detected in 12 patients (60%). In 3 patients (25%) only one drug and in 1 patient six different drugs of abuse were detected. The most frequently detected substance was MDMA in 8 cases (40%), followed by cocaine in 6 (30%), MDA in 5 (25%), amphetamines in 4 (20%), methamphetamine in 3 (15%), benzodiazepines in 2 (10%) and mephredone in 1 (5%). Alcohol metabolites were detected in 15 patients (75%). In 18 patients a u-EIA were made. Compared to the HPLC results, the u-EIA showed a false positive result in 9 patients (50%). The substances implicated were methamphetamines in 6 patients, amphetamines in 4, MDMA in 3, and cocaine and benzodiazepines in 2 cases respectively. Only one false negative to amphetamines was detected.

Conclusions: The type of consumed substances detected by HPLC differs substantially from the result of the u-EIA. The high percentage of false positive results in the u-EIA could require the performance of a more specific test such as HPLC in selected cases. In many cases more than one substance is detected. The most frequently detected drug was MDMA. Alcohol intake have been observed with high frequency.

#18628 : A validation of the National Emergency Department Overcrowding Score (NEDOCS) in a UK non-specialist emergency department: a prospective observational study.

Authors:

Sophie Snel (1), Duncan Hargreaves (2), Colin Dewar (3), Luke Hodgson (4), PierVirgilio Parrella (5), Theophilus Samuels (6), Paul Roderick (7)

1. Medical Student, University of Brighton and Sussex Medical School, Brighton, UK
2. Department of Intensive Care Medicine, Department of Quality Improvement, Western Sussex Hospitals Foundation NHS Trust, Worthing, UK
3. Department of Emergency Medicine, Western Sussex Hospitals Foundation NHS Trust, Worthing, UK
4. Department of Intensive Care Medicine, Western Sussex Hospitals Foundation NHS Trust, Worthing, UK
5. Department of Quality Improvement, Western Sussex Hospitals Foundation NHS Trust, Worthing, UK
6. Department of Anaesthesia and Intensive Care Medicine, Surrey and Sussex Hospitals Foundation NHS Trust, Redhill, UK
7. Professor of Public Health Medicine, University of Southampton, Southampton, UK

Keywords: ED Crowding, Overcrowding, ED Management, NEDOCS, Scales,

Abstract :**Introduction**

Crowding in the Emergency Department (ED) is recognised as a significant problem linked with various adverse health outcomes. However, there is no widely accepted measurement tool to enable clinicians to better understand and manage ED crowding, though several have been proposed including from the US the NEDOCS score.

Objectives

This study aimed to externally validate NEDOCS in a UK ED setting against expert clinician opinion, and to assess inter-rater reliability between nurse and consultant physician opinions.

Methods

This prospective single-centre study sampled data in real-time over four time periods during 2018 in a non-specialist hospital ED in the south of England to calculate NEDOCS values. The outcome variable was clinician opinion of crowding using a six point Likert-scale for both consultant-in-charge and nurse-in-charge. Paired results were averaged to give a combined score, and dichotomised to construct AUROCs and diagnostic testing for a range of NEDOCS cut-offs. The same method was also used to assess the association of scores with clinician opinion of risk of patient harm, safety, and adequacy of staffing levels. To adjust for the effect of temporal correlation (7), further analysis was conducted on observations sampled every six hours, offset by 2 hours for each sequential day to allow analysis of variability between and within days.

Results

From 905 sampled hour intervals, 448 complete data points (both clinician opinions of crowding) were obtained. The ED was crowded 18.53% according to the composite opinion. Median NEDOCS score was 63 (IQR 43 to 85). Weighted kappa score evaluating inter-rater agreement of nurse and consultant opinion was moderate at 0.57 (95% CI: 0.56 to 0.60). AUROC for NEDOCS to predict clinical opinion of crowding was 0.81 (95% CI 0.77 to 0.86)

For 6-hour sampling there were 157 complete observations. Adjusted for temporal correlation in this manner, AUROC was 0.80 (95% CI 0.73 to 0.88).

For predicting clinician opinion of risk of harm and safety, AUROCs were 0.71 (95% CI 0.61 to 0.82) and 0.71 (95% CI 0.63 to 0.80) respectively. Higher scores of NEDOCS also correlated with a clinician opinion of insufficient staffing; AUROC was 0.70 (95% CI 0.64 to 0.76).

Optimal performance in our ED was a NEDOCS of >85 with a sensitivity of 59.0% (95% CI 47.7 to 69.7) and a specificity of 82.7% (95% CI 78.5 to 86.5).

Conclusions

NEDOCS demonstrated good discriminatory power for crowding in our ED. It also correlated with perception of safety, adequacy of staffing and risk of patient harm. However further refinement of the score is needed, including the impact of triaged patient acuity-level, which was not incorporated in the original score. Determining ED specific cut-off point(s) for the score is important, as the previously published thresholds for crowding may not be suitable for all EDs. This study has demonstrated the feasibility of electronic capture in real time in a UK ED.

#18629 : An external validation of the full International Crowding Measure for the Emergency Department (ICMED) in a UK non-specialist emergency department: a prospective observational study.

Authors:

Duncan Hargreaves (1), Sophie Snel (2), Colin Dewar (3), Luke Hodgson (4), PierVirgilio Parrella (5), Theophilus Samuels (6), Paul Roderick (7)

1. Department of Intensive Care Medicine, Department of Quality Improvement, Western Sussex Hospitals Foundation NHS Trust, Worthing, UK
2. Medical Student, University of Brighton and Sussex Medical School, Brighton, UK
3. Department of Emergency Medicine, Western Sussex Hospitals Foundation NHS Trust, Worthing, UK
4. Department of Intensive Care Medicine, Western Sussex Hospitals Foundation NHS Trust, Worthing, UK
5. Department of Quality Improvement, Western Sussex Hospitals Foundation NHS Trust, Worthing, UK
6. Department of Anaesthesia and Intensive Care Medicine, Surrey and Sussex Hospitals Foundation NHS Trust, Redhill, UK
7. Professor of Public Health Medicine, University of Southampton, Southampton, UK

Keywords: ED Crowding, Overcrowding, ED Management, Scales,

Abstract :**Introduction**

Crowding in the Emergency Department (ED) is recognised as a significant problem linked with various adverse health outcomes. However, there is no widely accepted measurement tool to enable clinicians to better understand and manage ED crowding, though several have been proposed including the recently derived ICMED.

Objectives

This study aimed to externally validate ICMED in a different UK ED setting to the derivation studies. Additionally the study aimed to evaluate whether using the full form of ICMED improved the score's diagnostic ability.

Methods

This prospective single-centre study sampled data in real-time over four time periods during 2018 in a UK non-specialist hospital ED to calculate ICMED values, including calculation of proportion of patients leaving the ED without being seen, the measure omitted from other studies. The outcome variable was clinician opinion of crowding using a six point Likert-scale for both consultant-in-charge and nurse-in-charge. Paired results were averaged to give a combined score, and dichotomised to construct AUROCs and diagnostic testing for a range of ICMED cut-offs. Association of scores with clinician opinion of risk of patient harm, safety, and adequacy of staffing levels was also assessed. To adjust for the effect of temporal correlation, further analysis was conducted on observations sampled every six hours, offset by 2 hours for each sequential day to allow analysis of variability between and within days.

Results

From 905 sampled hour intervals, 448 complete data points (both clinician opinions of crowding) were obtained. The ED was crowded for 18.5% according to the composite opinion. Median ICMED score was 2 (IQR 2 to 3). AUROC for ICMED to predict clinical opinion of crowding was 0.64 (95% CI 0.58 to 0.70). For predicting clinician opinion of risk of harm and safety, AUROCs were 0.60 (95% CI 0.50 to 0.70) and 0.59 (95% CI 0.49 to 0.69) respectively. Higher scores of ICMED also correlated moderately with a clinician opinion of insufficient staffing; AUROC was 0.58 (95% CI 0.52 to 0.65)

Optimal performance in our ED was an ICMED of >3 with a sensitivity of 49.4% (38.2 to 60.6) and a specificity of 74.3% (69.4 to 78.7).

For 6-hour sampling there were 157 complete observations. Adjusted for temporal correlation in this manner, AUROC was 0.69 (95% CI 0.59 to 0.79). However, for ICMED adjustment for temporal correlation required a total of 208 complete observations and 30 crowded observation intervals for adequate power.

Conclusions

This is the first study to validate the full form of the ICMED score. ICMED demonstrated moderate discriminatory power for crowding (in line with previously published values) as well moderate discrimination for perception of safety, adequacy of staffing and risk of patient harm in our ED. When adjusted for temporal correlation the AUROC showed a trend towards improvement. However, the sample size was inadequate to fully account for the effect of temporal correlation. Further data capture is currently underway to address this. This study has demonstrated the feasibility of electronic capture of all the parameters of the ICMED score in real time in a UK ED.

#18630 : High oxygen flow therapy in emergency lung resections: a case series.

Authors:

Francesca Nori (1), Elisabetta Maria Frongillo (2), Marco Turchini (2), Alessandro Valentino (1)

1. Dipartimento Chirurgico e Grandi Traumi,, M. Bufalini Hospital, Cesena, Italy, Cesena, ITALY

2. UO Chirurgia Toracica, IRCCS Casa Sollievo della Speranza, San Giovanni Rotondo, Foggia, Italy, San Giovanni Rotondo, ITALY

Keywords: High oxygen flow therapy, emergency lung resections, low oxygen flow therapy, atelectasis, acute respiratory failure

Abstract :

Background:

High oxygen flow therapy (HOFT) is widely used to treat and prevent acute respiratory failure (ARF) in several medical and surgical settings. Evidences for HOFT after thoracic surgery are scarce. Postoperative pulmonary complications are quite common with a risk up to 25% following lung resection. Atelectasis is a key factor in developing ARF. HOFT could prevent atelectasis by generating a positive end expiratory pressure (PEEP). Furthermore, some evidences suggested that the prophylactic use of HOFT, when incorporated into an enhanced recovery program, after major thoracic surgery reduces the length of stay. Our primary endpoint was to determine if HOFT improve oxygenation after lung surgery compared to low oxygen flow therapy (LOFT), and if HOFT lead to a less post-operative complications, such as atelectasis and air leaks and if it reduces the length of stay (LOS).

Methods:

This is a prospective study. We enrolled 24 patients after emergency lung resections; 12 treated with HOFT and 12 treated with LOFT. In each group, 5 patients underwent wedge resections for emphysema and 7 to lobectomies for abscesses. All the resections were performed through an antero-lateral muscle-sparing thoracotomy. We included patients with post-operative PaO₂ ≥ 60 mmHg and PaO₂/FiO₂ ≥ 200. After surgery, patients were assigned to HOFT group or LOFT 1:1; blood gas analysis (BGA) was performed at baseline (T0), after 60 min (T1), 24 (T2) and 48 hours (T3). After 24 hours and after 4 days we performed chest X-ray, checking for post-operative complications. At any time patients withdrew the study if respiratory rate >30, SO₂ ≤ 85%, and BGA worsened compared to baseline.

Results:

The baseline characteristics were similar in both groups, in terms of sex, age, smoking habit, BGA and vital signs. We obtained a statistically significant improvement in oxygenation along the time of the study in the HOFT group compared to LOFT (pO₂ T1 111,7 ± 36 vs 87,1 ± 12,6 p=0,04, pO₂ T3 109,9 ± 23,7 vs 83,5 ± 23,8 p=0,01, SO₂ T3 96 ± 1 vs 93 ± 2 p<0,05). After 48 hours, respiratory rate was significantly decreased in HOFT group compared to LOFT one (15 ± 1 vs 18 ± 3 p=0,01). We described less post-operative atelectasis and air leaks in HOFT group compared to LOFT group, although they did not statistically differ (2 pts (17%) vs 5 pts (42%) p=0,19; 2 pts (17%) vs 4 pts (33%) p=0,37 respectively). LOS was shorter in HOFT compared to LOFT group (8 ± 4 days vs 9 ± 3 p=0,39).

Conclusions:

According to the literature, we observed that HOFT improves oxygenation and reduce respiratory rate in patients after major thoracic surgery. Regarding post-operative complications, we reported less atelectasis and air leaks in patients treated with HOFT compared to LOFT. Furthermore, LOS was shorter in the HOFT group. This is of great value in order to assess standard post-operative protocol, in order to prevent ARF which often affect the length of stay, worsening enhanced recovery programs. Ethical approval and informed consent are not needed due to the type of study.

#18632 : Non-invasive ventilation in acute pulmonary edema in prehospital services

Authors:

Dumitru Pamfiloiu (1), Alexandra Maria Ionescu (1), Elena Mirela Badescu (1), Claudia Tirau (2), Andreea Elena Soceanu (3), Dumitru Pamfiloiu (1)

1. Emergency Medicine, UPU-SMURD Sibiu, Sibiu, ROMANIA
2. Emergency Medicine, Anesthesiology and Critical Care, Cluj Napoca, ROMANIA
3. Emergency Medicine, UPU-SMURD Targu Mures, Targu Mures, ROMANIA

Keywords: non-invasive ventilation, respiratory rate

Abstract :

Introduction:

Non-invasive ventilation refers to the insurance of a positive pressure in the airways through a facial mask without performing orotracheal intubation or other invasive devices for management of airways (laryngeal mask, combi-tube).

Acute pulmonary edema is defined by accumulation of fluid in the lung interstitium and alveoli as a result of cardiac dysfunction.

The aim of the study was to emphasize the efficiency of non-invasive ventilation as a part of treatment, beside of drug treatment in prehospital service SMURD Romanian Intensive Care Unit.

Materials and methods:

The paper presents a retrospective study performed on a number of 96 patients who received prehospital medical assessment between 01.01.2017-31.12.2018.

Results and discussions:

During the research, we took into consideration the following parameters: peripheral capillary oxygen saturation (SpO_2), positive end expiratory pressure (PEEP), Glasgow coma score (GCS), respiratory rate (RR). Based on these parameters, we observed the improvement or the decrease of clinical evolution of the patients.

The gender distribution was : 71 females (73.96%) and 25 males (26.04%).

The parameters of the study were divided in the following categories:

Peripheral capillary oxygen saturation before non-invasive ventilation: <80%: 12 patients (12.5%), 80-90% 76 patients (79.16%), 90-92% 8 of patients (8.33%).

After continuous positive airway pressure (CPAP) treatment: at patients with initial peripheral saturation <80% increased between 90-94%; the patients with initial peripheral saturation between 80-90% , peripheral saturation increased between 92-99%; the patients with initial 90-92%, peripheral saturation increased to 96-100%.

Positive end expiratory pressure (PEEP): 40 of patients (42%) benefited a positive end expiratory pressure (PEEP) between 5-8 cmH_2O ; other 40 of patients (42%) benefited a positive end expiratory pressure (PEEP) between 9-12 cmH_2O ; the other category of patients-16 (16%) benefited of positive end expiratory pressure (PEEP) between 13-15 cmH_2O .

Regarding to Glasgow coma score evaluation, we observed that in almost of the cases the medium value was based around 15 points, but 2 who were 13 points.

Respiratory rate: 60 of patients (62.5%) had the respiratory rate above 16, 24 of them (25%) had the respiratory rate between 12-16, and 12 of them (12.5%), had the respiratory rate under 12.

The patients who initially had the respiratory rate above 16, 5 of them (8.34%) decreased their respiratory rate (under 12), 40 (66.7%) remained normally (12-16), and 15 (25%), remained increased (above 16).

76 of patients (88.9%) who benefited of non-invasive ventilation , their respiratory rate normalised (12-16); at 5 patients (2.7%), the respiratory rate decreased under 12; at 15 (8.33%), the respiratory rate increased above 16.

Conclusions:

The patients who benefited of non-invasive ventilation have registered a lower rate of mortality through improvement the vital parameters and state of consciousness. So, beside the drug treatment, non-invasive ventilation has proved an improvement of the vital signs.

#18634 : Screening for hypertension in adults during emergency department consultation: a systematic review**Authors:**

André Michaud (1), Maxime Lamarre-Cliche (2), Alain Vadeboncoeur (3), Lyne Cloutier (4)

1. Nursing sciences department, Université du Québec à Trois-Rivières, Laval, CANADA
2. Institut de recherche clinique de Montréal, Université de Montréal, Montréal, CANADA
3. Emergency department, Institut de cardiologie de Montréal, Montréal, CANADA
4. Nursing sciences department, Université du Québec à Trois-Rivières, Trois-Rivières, CANADA

Keywords: screening, hypertension, emergency department, systematic review

Abstract :*Objective*

A large proportion of patients affected with hypertension go undetected. Screening remains a challenge. During an emergency department (ED) consultation, one in three adults has elevated blood pressure. A systematic review was conducted to assess the performance of a screening strategy in adults (positive predictive values, follow-up rates) using blood pressure (BP) measurement at the time of an ED consultation. The secondary objectives are to describe BP measurement methods employed at the time of the initial consultation in the ED and the means used to monitor it, and also to describe the means used to confirm a diagnosis of HTN

Method

A systematic literature search on Embase, CINAHL, and Medline was carried out. This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses - Diagnostic Test Accuracy (PRISMA-DTA). Intervention studies with non-pregnant adults including at least one BP measurement for all participants were included. A procedure had to have been carried out to assess the validity of the elevated BP value within the next few days of the initial visit. In order to assess the quality of the studies identified, we adapted the tool Quality Assessment of Diagnostic Accuracy Studies-2 (Quadas-2).

Results

Out of 1,030 articles identified, 10 articles published between 1987 and 2014 met the inclusion criteria. There were no randomized clinical trials. Mean age of participants was 51.6 years (95% CI 46.7 - 56.5 years). A single study reports that BP screening was measured according to all the recommendations from the guidelines. The average follow-up rate was 61.9% (95% CI 45.5 - 78.3). For diagnostic confirmation, four studies used a BP measurement method based on the guidelines. Half of the patients (50.2% (95% CI 35.9 - 64.45)) with elevated BP during the ED visit had BP corresponding to uncontrolled elevated blood pressure at follow-up measurement.

Conclusion

In the context of emergency care, the measurement of blood pressure is usually performed in a non-standardized way. Despite this, in adults with high BP during ED consultation, half of them will have uncontrolled hypertension confirmed at follow-up. The contribution of ED to the screening for HTN, by making a referral for diagnostic confirmation, could provide a major opportunity to eventually reduce the burden associated with HTN and its complication.

Trial Registration / Funding Information (only) :

André Michaud has received grants from Ministère de l'éducation et de l'enseignement supérieur du Québec (MÉES), the Réseau de recherche en soins infirmiers du Québec (RRISQ) and the Société Québécoise d'Hypertension artérielle (SQHA) in order to support his PhD studies.

#18639 : ECG changes during prehospital resuscitation predict outcome in patients with out-of-hospital cardiac arrest PEA

Authors:

ryozo yoshioka (1), hiroshi nonogi (1), chihiro narita (1), koichi haruta (1), kyuhei miyakawa (1), akihiro miyake (1), naoki tosaka (1)

1. , Mr., shizuoka, JAPAN

Keywords: resuscitation, PEA, ECG change

Abstract :**Abstract:**

Introduction: Survival rate and neurological intact survival of pulseless electrical activity (PEA) has extremely poor outcome when compared with ventricular fibrillation. To determine termination of resuscitation, it is necessary to predict their outcome. Therefore, we analyzed the relationship between ECG changes during prehospital resuscitation and outcome.

Method: This study is a retrospective observational study. We examined consecutive PEA cases transported to the emergency medical center in Shizuoka General Hospital for out-of-hospital PEA in April 2012 - April 2017. The QRS width and RR interval were measured in ECG recording in the initial check pulse phase and arrival hospital and analyze to outcome.

We determined that QRS width (or RR interval) become shortened as QRS (RR) shortened group and we determined that QRS width (or RR interval) become prolonged or become asystole waveform as QRS (RR) prolonged group.

The primary outcome was survival admission and the secondary outcome was good neurologic outcome defined as cerebral performance score (CPC) of 1, 2.

Results: 122 patients were analyzed and the average age was 78.2 years old. There were 50 cases (41%) with survival admission (ROSC cases) and 7 (6%) with CPC 1-2.

In ROSC cases, QRS width shortened group is larger than non-ROSC cases (32cases (64%) vs 19 cases (26%) $P < 0.001$).

In ROSC cases, RR interval shortened group is also larger than non-ROSC cases (29cases (58%) vs 19 cases (26%) $P = 0.002$)

Comparing CPC1-2 cases and CPC3-5 cases, QRS width shortened group is significantly larger in CPC1-2 cases (6cases (86%) vs 45 cases (39%) $P = 0.013$). But there were no significant differences in RR interval shortened group (2cases (29%) vs 46 cases (40%) $P = 0.581$).

Conclusion: Those findings suggested that analyzing change of QRS width and change of RR intervals during prehospital resuscitation predict survival admission in PEA cases. Especially QRS width shortened group may predict not only ROSC rate but also neurological outcome.

Trial Registration / Funding Information (only) :

Ryozo Yoshioka is supported by Shizuoka General Hospital Encouragement Research Grant. The other authors report no conflicts of interest.

#18642 : Cut-off values of serum potassium and core temperature at hospital admission for extracorporeal rewarming of avalanche victims in cardiac arrest: a retrospective multi-centre study**Authors:**

Hermann Brugger (1), Pierre Bouzat (2), Mathieu Pasquier (3), Peter Mair (4), Julia Fieler (5), Tomasz Darocha (6), Marc Blancher (7), Matthieu de Riedmatten (8), Markus Falk (1), Peter Paal (9), Giacomo Strapazzon (1), Ken Zafren (10), Monika Brodmann Maeder (1)

1. Institute of mountain emergency medicine, EURAC research, Bolzano, ITALY
2. Department of Anaesthesiology and Critical Care, University Hospital of Grenoble, Grenoble, FRANCE
3. Emergency Service, Lausanne University Hospital Center, Lausanne, SWITZERLAND
4. Department of Anaesthesiology and Critical Care Medicine, Medical University Innsbruck, Innsbruck, AUSTRIA
5. Division of Surgical Medicine and Intensive Care, University hospital of North Norway, Tromsø, NORWAY
6. Department of Anaesthesiology and Intensive Care, Medical University of Silesia, Katowice, POLAND
7. Department of Emergency Medicine, University Hospital of Grenoble, Grenoble, FRANCE
8. Department of Emergency Medicine, Sion Hospital, Sion, SWITZERLAND
9. Department of Anaesthesiology and Intensive Care, Hospitallers Brothers Hospital, Salzburg, AUSTRIA
10. Department of Emergency Medicine, Stanford University School of Medicine, Stanford, USA

Keywords: Avalanche, cardiac arrest, core temperature, hypothermia, potassium, triage

Abstract :

Aim: About 165 avalanche deaths are recorded per year in Europe and in North-America. Survival analyses suggest that most completely buried avalanche victims die by asphyxiation between 15 and 35 minutes after burial. Unlike asphyxia, hypothermia develops after long burial if the completely buried avalanche victim is able to breathe. These avalanche victims may recover without neurological sequelae. Recommendations for the pre-hospital triage of avalanche victims were based on expert consensus and case series with, admittedly, low levels of evidence and have not previously been validated using a large dataset. This study attempted to find reliable cut-off values for the identification of hypothermic avalanche victims with reversible out-of-hospital cardiac arrest (OHCA) at hospital admission. This may enable hospitals to allocate extracorporeal life support (ECLS) resources more appropriately while increasing the proportion of survivors among rewarmed victims.

Methods: This was a retrospective multi-centre study. Seven European hospitals that are capable of ECLS and have admitted avalanche victims with OHCA participated in the study: Bern (Switzerland), Grenoble (France), Innsbruck (Austria), Krakow (Poland), Tromsø (Norway), Lausanne and Sion (Switzerland). Approval by local institutional review boards was provided by the participating hospitals. All admitted avalanche victims with OHCA from 1995 to 2016 were included. To identify parameters that contribute independently to survival we performed a stepwise logistic regression on survival with respect to sex, age, duration of burial, core temperature, serum potassium and pH. Optimal cut-off values, for the parameters identified by logistic regression, were determined by means of bootstrapping and exact binomial distribution and served to calculate sensitivity, rate of overtriage, positive and negative predictive values, and receiver operating curve (ROC) analysis.

Results: In total, 103 avalanche victims with OHCA were included. Of the 103 patients 61 (58%) were rewarmed by ECLS. Six (10%) of the rewarmed patients survived whilst 55 (90%) died. The observed maximum value for core temperature in survivors was 27.8 ° C. For serum potassium the observed maximum value in survivors was 4.8 mmol/L. In multivariate analysis logistic regression the parameters core temperature ($p=0.02$) and serum potassium ($p=0.03$) were statistically, significantly related to survival. Using cut-offs of 7 mmol/L and 30° C resulted in an overtriage rate of 47% (95% CI 35%-60%), negative predictive value of 100% (95% CI 92%-100%) and positive predictive value of 19% (95% CI 8%-35%). We obtained optimal cut-off values of 7 mmol/L for serum potassium and 30° C for core temperature.

Conclusion: For in-hospital triage of avalanche victims admitted with OHCA, serum potassium accurately predicts survival. The combination of the cut-offs 7 mmol/L for serum potassium and 30° C for core temperature achieved the lowest overtriage rate and the highest positive predictive value, with a sensitivity of 100% for survivors. The presence of vital signs at extrication is strongly associated with survival. For further optimisation of in-hospital triage, larger datasets are needed to include additional parameters.

Trial Registration / Funding Information (only) :

No funding. Original publication: Brugger H, Bouzat P, Pasquier M, Mair P, Fieler J, Darocha T, Blancher M, de Riedmatten M, Falk M, Paal P, Strapazzon G, Zafren K, Brodmann Maeder M. Cut-off values of serum potassium and core temperature at hospital admission for extracorporeal rewarming of avalanche victims in cardiac arrest: A retrospective multi-centre study. *Resuscitation* 2019;139:222-229. DOI: 10.1016/j.resuscitation.2019.04.025

#18645 : Observational study on epidemiology and survival in road traffic – pedestrian collisions in the City of Madrid.

Authors:

Dana Roxana Ionica (1), Laura Martos Torrecila (1)

1. , Samur PC (voluntaria), Madrid, SPAIN

Keywords: run-over, trauma, survival, pre-hospital

Abstract :

Introduction:

Every year about 11 000 road traffic–pedestrian collisions occur in Spain. Of these, more than 10 000 occur in urban areas, where travelling by foot is common, and incidence of pedestrians is high. This makes pedestrians the most vulnerable in respect of road accidents.

Methodology:

Retrospective transversal descriptive design through review of SAMUR-Protección Civil road traffic- pedestrian collisions care reports in 2018. Variables: age, gender, geographical and time placement, lesions, survival rate after 6- hour, 24- hour and 7- day time period through the analysis of hospital notice procedure and follow-up . Data processing: Excel 2010, SPSS 17.0

Results:

The sample was 1598 road traffic- pedestrian collisions, of which 54.7% were women and 45.3% were men. The mean age was 44.9 years (SD 23.2) with a minimum range of 1 and a maximum of 98 years old. If we divide this sample by age ranges, range 1 (1-17), range 2 (18-35), range 3 (36-50), range 4 (51-65), range 5 (66-80) and range 6 (81-98), 13.4% of these events were range 1, 24.5% were range 2, 20.6% were range 3, 19.3% were range 4, 14.4% were range 5 and 7.8% were range 6. The type of lesions were: minor contusions 51.8%, poly contusions 15.4%, orthopaedic trauma 14.3%, cranioencephalic trauma 9.1%, major trauma 2.5%, facial trauma 2.3%, pelvic trauma 2.3%, thoracic trauma 1.8% and exitus 0.5%. Higher incidence was during the months of January and November (10.4%), with a decrease during the month of August (3.9%). The highest incidence was on Tuesdays (17.9%), being Sundays of lowest incidence (7.6%). Time range of highest accidentability was 12-18 hours (34.2%). 104 patients required hospital notice on grounds of severity, with a mean age of 46.28 (SD 23.67), being 59.6% male and survival rate after 6 hours (h) at 96.2%, after 24h 91.3% and after 7 days 87.5%. Age- range- 2 patients had 100% survival rate after 7 days, while range- 4 patients had the lowest survival rate at 73.3% ($p > 0,05$). The patients with the worst survival rate after 7 days were patients who suffered a cardiorespiratory arrest with 0% survival, abdominal trauma with 66.7% survival and major trauma with 82.4% survival ($p < 0,05$). Men had an 85.5% survival rate and 90.5% for females after 7 days.

Conclusions:

Based on these results, we can affirm that the common tipology of a run-over victim in urban environment is of a woman with an age between 18 and 35 years old who suffered the collision during working days and presenting minor contusions. The patients who required hospital notice due to severity were men of with the mean age of 46 years old and presenting no survival if their injuries would provoke them an out of hospital cardiac arrest (OHCA). Future prevention and awareness campaigns are necessary in order to prevent this urban accidentability. This should be addressed both to drivers and pedestrians for a correct use of the roads.

Trial Registration / Funding Information (only) :

This study did not received any funding

#18647 : Methoxyflurane versus standard analgesic treatment for acute trauma-related pain in the emergency setting: results of a randomised, controlled study in Italy (MEDITA)**Authors:**

Antonio Voza (1), Sossio Serra (2), Germana Ruggiano (3), Andrea Fabbri (4), Giuseppe Carpinteri (5), Gianfilippo Gangitano (6), Elisabetta Bonafede (7), Antonella Sblendido (8), Alberto Farina (8), Amedeo Soldi (8)

1. Emergency Department, IRCCS Humanitas Research Teaching Hospital, Milan, ITALY
2. Emergency Department, Maurizio Bufalini Hospital, Cesena, ITALY
3. Emergency Medicine Department, Santa Maria Annunziata Hospital, Florence, ITALY
4. Department of Emergency Medicine, Morgagni-Pierantoni Hospital, Forli, ITALY
5. Department of Emergency Medicine, Vittorio Emanuele University Hospital, Catania, ITALY
6. Emergency Department, Infermi Hospital, Rimini, ITALY
7. CRO YGHEA Division , Bioikòs Ambiente S.r.l., Bologna, ITALY
8. Medical Affairs, Mundipharma Pharmaceuticals srl, Milan, ITALY

Keywords: Pain, trauma, emergency, analgesia, methoxyflurane

Abstract :**Background**

Undertreatment of acute trauma pain is common in the emergency department (ED). Low-dose methoxyflurane, administered via a hand-held inhaler, has been used for short-term pain relief in emergency medicine in Australia since the 1970s, and was recently approved in Europe for moderate-to-severe trauma-related pain in adults; however, there is a paucity of data for methoxyflurane versus active comparators. The MEDITA (Methoxyflurane in Emergency Department in Italy) trial investigated the efficacy and safety of inhaled methoxyflurane versus standard analgesic treatment (SAT) for acute trauma-related pain.

Methods

MEDITA was a Phase IIIb, randomised, active-controlled, open-label trial conducted in 15 Italian pre-hospital units and EDs from February 2018 to February 2019 (EudraCT: 2017-001565-25; NCT03585374). The study was approved by each site's independent ethics committee. At triage, adults with moderate-to-severe pain (score ≥ 4 on the Numerical Rating Scale [NRS]) due to limb trauma were randomised 1:1 to receive 3mL methoxyflurane (self-administered by the patient via inhalation under supervision of a trained person) or SAT in Italy (intravenous [IV] morphine 0.1mg/kg for severe pain [NRS ≥ 7]; IV paracetamol 1g or ketoprofen 100mg for moderate pain [NRS 4-6]). Primary endpoint was change in visual analogue scale (VAS) pain intensity from baseline to 3, 5 and 10min. Secondary efficacy endpoints were time to onset of pain relief, rescue medication use, patient rating of efficacy and healthcare professional (HCP) rating of practicality of treatment. Adverse events (AEs) were recorded from enrolment until discharge and at Day 14 \pm 2. The primary analysis was the overall treatment effect at 3, 5 and 10min, analysed using a linear mixed-effect model for repeated measures adjusted for baseline VAS and time by treatment interaction. Non-inferiority and superiority of methoxyflurane versus SAT was concluded if the upper 95% confidence interval (CI) for the comparison was below 1 and 0, respectively.

Results

270 patients (mean age 51 years [range: 18-95]; 49% male; 95% Caucasian; 34% with severe pain) were analysed (intent-to-treat population). Mean VAS scores at baseline, 3, 5 and 10 min were 67, 60, 52 and 44mm for methoxyflurane and 67, 64, 59 and 51mm for SAT. The primary analysis demonstrated superiority of methoxyflurane versus SAT (adjusted mean treatment difference: -5.94mm; 95% CI: -8.83, -3.06mm). Similar results were obtained for patients with moderate pain (-5.97mm; 95% CI: -9.55, -2.39mm) and severe pain (-5.54mm; 95% CI: -10.49, -0.59mm). 2.2% of methoxyflurane-treated patients and 3.7% of SAT-treated patients received rescue medication. Median onset of pain relief was 9min (95% CI: 7.72, 10.28) for methoxyflurane and 15min (95% CI: 14.17, 15.83) for SAT. Treatment efficacy/practicality was rated 'Excellent', 'Very Good' or 'Good' by 72.7% patients/90.3% HCPs for methoxyflurane and 60.9% patients/64.4% HCPs for SAT. AEs (all non-serious) were reported for 17% of methoxyflurane-treated patients and 3.0% of SAT-treated patients.

Conclusions

Low-dose methoxyflurane analgesia provided superior pain relief to SAT in patients with moderate-to-severe trauma pain and may offer a simple, fast and effective non-opioid treatment option in the ED.

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Trial Registration / Funding Information (only) :

EudraCT: 2017-001565-25; NCT03585374 / Study sponsored by Mundipharma Pharmaceuticals srl.

#18650 : Surveying the stress and anxiety of emergency medical personnel in East Azerbaijan province in 2018

Authors:

Hamid Reza Morteza Bagi (1), Rouzbeh Rajaei Ghafouri (1), Sajjad Ahmadi (2), Seyed Hesam Rahmani (3)

1. Assistant Professor of Emergency Medicine, Department of Emergency Medicine, Imam Reza Hospital, Tabriz University of Medical Sciences, TABRIZ, IRAN, ISLAMIC REPUBLIC
2. Assistant Professor of Emergency Medicine, Department of Emergency Medicine, Sina Hospital, Tabriz University of Medical Sciences, TABRIZ, IRAN, ISLAMIC REPUBLIC
3. Emergency Medicine Consultant, Department of Emergency Medicine, Ostad Alinasab Hospital, Iranian Social Security, TABRIZ, IRAN, ISLAMIC REPUBLIC

Keywords: Stress, anxiety, depression, emergency unit staff

Abstract :

Background: Growth and development of a society is necessary to promote psychological health which is a backbone of health of that society. Due to the importance of psychological health in emergency personnel and lack of evidence in this context, The present study has been conducted to evaluate the degree of Stress and anxiety among the emergency personnel (ER115) in East Azerbaijan province.

Methods: This descriptive-analytical-cross-sectional study includes all the members of medical emergency technicians who meet inclusion criteria and were employed in emergency prehospital outposts all over East Azerbaijan province. data were collected through questionnaire which had two parts(1.demographic data 2.DASS21). Descriptive and analytical analysis of data was done with SPSS software, version 24.

Results: In present study average amount of stress, anxiety and depression was $9/38 (\pm 9/26)$, $11/18 (\pm 9/32)$ and $10/31 (\pm 9/20)$ respectively. After eliminating effect of confounding factors Stress showed a partial correlation with work experience ($r=-0/19 P=0.008$). Anxiety had correlation with marital status ($r=-0.14 P=0.042$) and level of education ($r=-0.17 P=0.018$), after eliminating effect of confounding factors work experience also showed a significant partial correlation. ($r=-0/18 P=0.013$). Depression had a significant correlation with work experience ($r=-0.15 P=0/038$) after eliminating effect of confounding factors age and contract status showed significant partial correlation. ($r=0.15 P=0.033$ and $r=-0.16 P=0.029$, respectively) II

Conclusion: although Present study has identified some factors that influence Stress and anxiety in east Azerbaijan province, much is yet to be investigated in future researches to help governors to act in order. Also it is suggested to find early criteria for ER personnel to take in time and adequate treatment.

Trial Registration / Funding Information (only) :

NO FUNDING

#18654 : A structured response for the patient admitted to the intensive care unit from accident and emergency: a service evaluation**Authors:**

Christopher Dale (1), Monica Wallace (1), Paul McConnell (1)

1. RAH, Glasgow, Glasgow, UK

Keywords: Intensive care unit, critical care, organ support, structured response

Abstract :**Background**

The Structured Response for the Deteriorating Patient is a patient centred national improvement programme for providing standardised care for the acutely unwell patient by the Scottish Patient Safety Programme. It comprises 7 components; correct recording and frequency of observations using the National Early Warning System, timely medical review in line with triage category, documentation of an appropriate medical plan with involvement of a senior clinician and documentation of a patient's functional status and communication with the patient or family. We aim to assess whether we are providing standardised, person centred care for those admitted to ICU from A+E.

Methods

This project took place at a district general hospital in Greater Glasgow and Clyde serving approximately 200,000 people. We performed a retrospective analysis of scanned medical and nursing notes assessing compliance with the structured response bundle in consecutive patients admitted to ICU from A+E over a 15 month period (Aug 17-Nov 18). Time taken from A+E attendance to ICU referral, and time from referral to ICU admission was reported.

Results

130 patients were included in this study. Overall mean compliance with the structured response was 76%. Observations were correctly recorded 67% of the time with no aggregate score and missing physiological parameters being the commonest reason for incorrect recording. Medical review within triage target was achieved in 72% of cases. Involvement of senior clinicians, appropriate medical plans and documented functional status was achieved in 89-95% patients. Documented discussion with patients or their families was achieved in 38% of cases. Median time to ICU referral from time of attendance to A+E was 80 minutes. Median time from A+E referral to ICU admission was 107 minutes. 15% of patients were referred to ICU more than 4 hours following A+E attendance. 18% of patients were admitted to ICU more than 3 hours after referral.

Discussion

We report a low rate of documentation of discussions with patients (or families) around the time of referral to ICU. This is a key finding of this study. We feel this is a reflection of incomplete documentation rather than clinical practice. Nevertheless, this should not underestimate the significance this has on subsequent care, communication 'downstream' and medico-legal repercussions.

28% of patients admitted to ICU were not seen within target times as set by triage. This is a reflection of the broad clinical spectrum of patients that require medical review within 20 minutes at this hospital i.e. all patients with chest pain.

Patients being referred to ICU after being in the department for over 4 hours may reflect clinical deterioration but bed and staffing shortages may also play a part. Almost 1 in 5 patients accepted by ICU took more than 3 hours to be admitted. This may be due to commencement of organ support in A+E or in cases where results of investigations still pending may warrant transfer to other centres e.g. for neurosurgical input. However, we are aware of the possible negative effect that delayed ICU admission can have on patient outcomes.

Trial Registration / Funding Information (only) :

This project did not receive any specific funding and ethical approval was not needed due to local legislation

#18655 : A retrospective, descriptive study of the demographic characteristics of sex and age of patients whose clinical diagnosis is an arrhythmia in the extrahospital setting in the Community of Madrid.

Authors:

pilar varela garcia (1), yolanda gonzalez moreno (1), sonia castro fernandez (1), javier de andres sanchez (1), elba garcia diez (1), jesus valeriano martinez (1), pilar medina diaz (1), miriam uzuriaga martin (1)

1. , summa 112, madrid, SPAIN

Keywords: Demography #Arrhythmias #Summa112 #Emergency

Abstract :

The Emergency Medical Service of Madrid (SUMMA 112) is the outpatient medical emergency service of the Regional Ministry of Health of the Community of Madrid. Its scope of competences includes homes and work emergencies in the city of Madrid and all emergencies in the rest of the Community.

Taking into account all of the above, it was decided to conduct a retrospective descriptive study in the specific period of the first semester of 2017 based on the clinical records of SUMMA 112. There were 3752 clinical records with ICD 9 corresponding to some diagnosis of some type of arrhythmia. It was decided to exploit a sample of 20%, which corresponded to a figure of 750-800 medical records. Finally, data from 827 clinical histories were collected, of which 787 were considered valid, a figure that represented the final N of our analysis. This analysis is intended to describe, in a representative way by the sample size, the characteristics demographic of sex and age presented by patients whose clinical diagnosis is an arrhythmia in the Community of Madrid. For this, we requested, first, authorization to the Management of the SUMMA 112 and, second, accreditation to the Departments of Clinical Documentation and Information Technology, for the revision of histories and the exploitation of the obtained data.

Data were collected from a total of 787 clinical records with ICD 9 MC corresponding to some type of arrhythmia.

The distribution by sex was 54.76% of women (449 cases) and 45.24% of men (338 cases).

The median (value of the central position variable in a set of ordered data) of general age was 77 years, with a range (difference between extreme results) between 10 and 101 years and an interquartile range (P75-P25: distance between first and third quartile that includes 50% of the population and avoids the distortion of the result by extreme values) of 19 (65-84 years).

or males, the median age was 73 years with a range between 10 and 97 years and an interquartile range of 17 (66-83 years). For women, the median was 79 years, the range between 14 and 101 years and the interquartile range 22 (64-86 years).

The cases were segmented by age groups (<20, 20-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90 and > 90) to determine in which groups of ages there were more cases of arrhythmias. The groups with the highest incidence of arrhythmias corresponded to the population over 60 years of age for both sexes (15.24% for 61-70 years, 24.77% for 71-80 years, 31.89% for 81-90 years and 9.40% for > 90 years) with an accumulated incidence of 84.30% overall, 78.14% for men and 83.72% for women.

It is striking that at younger ages (less than 60 years old) the incidence of arrhythmias is slightly higher in men, although with practically negligible differences, it is equal between 61 and 70 years and it is much higher in women from 71 years of age.

#18659 : Methoxyflurane, an efficient and well tolerated analgesic for elderly patients, compared with standard analgesic treatment: subgroup analysis of a phase IIIb randomised, controlled trial (InMEDIATE)**Authors:**

Rosa Capilla Pueyo (1), Cesareo Fernández Alonso (2), Sergio García Collado (3), César Carballo Cardona (4), Ignacio Pérez Torres (5), Pere Llorens Soriano (6), José Ramón Casal Codesido (7), María Arranz Betegón (8), Luis Amador Barciela (9), Aitor Odiaga (10), Anselma Fernández Testa (11), Jorge Trigo Colina (12), Antonio Cid Dorribo (13), Isabel López Isidro (14), Susana Traseira Lugilde (15), Alberto M. Borobia Pérez (16)

1. Emergency Department, Hospital Universitario Puerta de Hierro-Majadahonda, Madrid, SPAIN
2. Emergency Department, Hospital Universitario Clínico San Carlos, Madrid, SPAIN
3. Emergency Department, Hospital Campo Grande, Valladolid, SPAIN
4. Emergency Department, Hospital Universitario La Paz, Madrid, SPAIN
5. Emergency Department, Hospital Universitario Virgen del Rocío, Sevilla, SPAIN
6. Emergency Department, Hospital General Universitario de Alicante, Alicante, SPAIN
7. Emergency Department, Hospital El Bierzo, Ponferrada, SPAIN
8. Emergency Department, Hospital de Viladecans, Viladecans, SPAIN
9. Emergency Department, Hospital Álvaro Cunqueiro, Vigo, SPAIN
10. Emergency Department, Hospital Gernika-Lumo, Gernika-Lumo, SPAIN
11. Emergency Department, Complejo Asistencial de Zamora, Zamora, SPAIN
12. Emergency Department, Hospital Asepeyo Coslada, Coslada, SPAIN
13. Medical Emergency Service of Madrid (SUMMA), Extra-hospital Emergency Center El Molar, Madrid, SPAIN
14. Emergency Department, Hospital Universitario de La Princesa, Madrid, SPAIN
15. Medical Department, Mundipharma Pharmaceuticals S.L., Madrid, SPAIN
16. Clinical Pharmacology Service, Hospital Universitario La Paz, Madrid, SPAIN

Keywords: Analgesia, elderly, emergency, methoxyflurane, pain, trauma

Abstract :**Background**

Undertreatment of acute pain in the emergency setting remains a widespread problem, and elderly patients receive even worse pain treatments than others. The probability that these patients receive analgesic treatment is up to 20% lower than that of younger patients.

Low-dose methoxyflurane is an inhaled, rapid-acting, non-narcotic analgesic now approved in Europe that may overcome some barriers to effective pain management. There is, however, a lack of data from large, randomised, active-controlled trials.

Methods

InMEDIATE (EudraCT: 2017-000338-70; NCT03256903) was a Phase IIIb, open-label, randomised controlled trial conducted by the Pain Group of the Spanish Society of Emergency Medicine/Spanish Clinical Research Network in 14 Spanish emergency units from July 2017 to April 2018. We present a post hoc analysis in the subgroup of patients aged ≥ 65 years. At triage, adults with acute moderate-to-severe trauma pain (score ≥ 4 on the 11-point Numeric Rating Scale [NRS]) secondary to trauma were randomised 1:1 to receive inhaled methoxyflurane (up to 2 \times 3mL vials) or SAT (standard analgesic treatment per each site's own analgesic protocol) while in the unit. Exclusion criteria included use of analgesic for the acute traumatic pain before randomisation, and contraindications to analgesics to be used in the trial. Efficacy endpoints included change in NRS pain intensity (primary endpoint), and time to onset of pain relief (co-primary endpoint) for 20 min after start of treatment, and patient/clinician-reported outcomes, which were analysed in an exploratory manner for the elderly subgroup using 2-tailed t-tests.

Results

The elderly subgroup included 33 methoxyflurane-treated patients and 26 SAT-treated patients, (19.34% of the patients included in the whole trial) 30.5% males, mean \pm SD age 73.6 ± 6.0 years with mostly fractures and/or contusions. 22 of 26 (85%) patients in the SAT group received non-steroidal anti-inflammatory drugs (mainly intravenously) and 4 received opioid analgesics. Mean (\pm SD) baseline NRS pain intensity was 8.10 ± 1.62 in the methoxyflurane group and 7.28 ± 1.97 in the SAT group. Mean decreases from baseline in NRS pain intensity at 3, 5, 10, 15 and 20 were 1.61, 2.37, 3.43, 4.04 and 4.78 for methoxyflurane and 0.60, 1.00, 1.81, 2.53 and 3.19 for SAT. The treatment difference was statistically significant in favour of methoxyflurane at all time points. Time to first pain relief was significantly shorter for methoxyflurane than SAT (5.55 vs. 12.38 min; difference: -6.43min; 95%CI: -10.27, -2.58, $p < 0.001$), as was time to first meaningful pain relief (12.57 vs. 25.07 min; difference: -12.10min; 95%CI: -18.06, -6.14; $p < 0.001$). Both treatments scored highly for patient and clinician satisfaction with the efficacy, comfort and safety of treatment (from 7.64 ± 2.35 to 8.71 ± 1.87). Clinicians rated methoxyflurane significantly better for comfort; difference 1.17 95%CI 0.52, 1.83; $p < 0.001$. Methoxyflurane exceeded patient/clinician expectations of treatment in 70%/64% of cases versus 50%/31% for SAT. Adverse events were reported for 8 methoxyflurane-treated patients (dizziness -2-, drowsiness -2-, euphoria, oral itching, pain and sickness) and 3 SAT-treated patients (hospitalisation, nausea and pain)

Conclusions

These results support consideration of methoxyflurane as a non-narcotic, easy-to-use, rapid-acting, first-line alternative to currently available analgesic treatments for elderly patients with trauma pain.

Trial Registration / Funding Information (only) :

EudraCT: 2017-000338-70; NCT03256903 / Study funded by Mundipharma Pharmaceuticals S.L.

#18660 : Low dose of inhaled Methoxyflurane: more effective and rapid-acting than standard analgesic treatment, also for severe trauma-related pain: subgroup analysis of a randomised controlled trial (InMEDIATE)

Authors:

Cesareo Fernández Alonso (1), Sergio García Collado (2), César Carballo Cardona (3), Rosa Capilla Pueyo (4), Ignacio Pérez Torres (5), Pere Llorens Soriano (6), José Ramón Casal Codesido (7), María Arranz Betegón (8), Luis Amador Barciela (9), Aitor Odiaga (10), Anselma Fernández Testa (11), Jorge Trigo Colina (12), Antonio Cid Dorribo (13), Isabel López Isidro (14), Susana Traseira Lugilde (15), Alberto M. Borobia Pérez (16)

1. Emergency Department, Hospital Universitario Clínico San Carlos, Madrid, SPAIN
2. Emergency Department, Hospital Campo Grande, Valladolid, SPAIN
3. Emergency Department, Hospital Universitario La Paz, Madrid, SPAIN
4. Emergency Department, Hospital Universitario Puerta de Hierro-Majadahonda, Madrid, SPAIN
5. Emergency Department, Hospital Universitario Virgen del Rocío, Sevilla, SPAIN
6. Emergency Department, Hospital General Universitario de Alicante, Alicante, SPAIN
7. Emergency Department, Hospital El Bierzo, Ponferrada, SPAIN
8. Emergency Department, Hospital de Viladecans, Viladecans, SPAIN
9. Emergency Department, Hospital Álvaro Cunqueiro, Vigo, SPAIN
10. Emergency Department, Hospital Gernika-Lumo, Gernika-Lumo, SPAIN
11. Emergency Department, Complejo Asistencial de Zamora, Zamora, SPAIN
12. Emergency Department, Hospital Asepeyo Coslada, Coslada, SPAIN
13. Medical Emergency Service of Madrid (SUMMA), Extra-hospital Emergency Center El Molar, Madrid, SPAIN
14. Emergency Department, Hospital Universitario de La Princesa, Madrid, SPAIN
15. Medical Department, Mundipharma Pharmaceuticals S.L., Madrid, SPAIN
16. Clinical Pharmacology Service, Hospital Universitario La Paz, Madrid, SPAIN

Keywords: Analgesia, emergency, methoxyflurane, opioids, pain, trauma

Abstract :

Background

Currently available analgesic options for severe pain in the emergency setting have limitations such as the challenging safety profile of opioids and limited efficacy of weaker analgesics. Inhaled methoxyflurane is an easy-to-administer, rapid-acting, non-narcotic analgesic that has been used in emergency settings in Australia and New Zealand since the 1970s and is now approved in Europe. InMEDIATE was a pragmatic trial in Spanish emergency units (including one pre-hospital unit) that compared the pain relief achieved with methoxyflurane versus standard analgesic treatment (SAT, administered according to each site's own analgesic protocol).; we report results of a subgroup analysis in patients with severe pain (NRS ≥ 7).

Methods

InMEDIATE (EudraCT: 2017-000338-70; NCT03256903) was a Phase IIIb, open-label, randomised controlled trial conducted from July 2017 to April 2018 by the Pain Group of the Spanish Society of Emergency Medicine/Spanish Clinical Research Network. At triage, eligible patients with moderate-to-severe trauma pain (score ≥ 4 on the Numeric Rating Scale [NRS]) were randomised 1:1 to receive inhaled methoxyflurane (up to 2 \times 3mL) or SAT whilst in the unit. Exclusion criteria included use of analgesic for the acute traumatic pain before randomisation, and contraindications to analgesics to be used in the trial. Primary efficacy endpoint was change in NRS pain intensity, co-primary endpoint was time to onset of pain relief and patient/clinician-reported outcomes were secondary endpoints. The treatments were compared for the severe pain subgroup (NRS ≥ 7 ; N=165) in an exploratory manner using 2-tailed t-tests.

Results

The methoxyflurane group included 89 patients, mean age 47.8 ± 19.8 years, 55% male. The SAT group included 76 patients, mean age 45.6 ± 17.9 years, 47% male; 86% received non-opioid analgesia (mostly intravenous NSAIDs) and 13% received opioids. Main injury types were contusion (N=96), fracture (N=43) and swelling (N=27). Mean NRS pain intensity at baseline, 3, 5, 10, 15 and 20min was 8.57 ± 0.82 , 6.73 ± 1.70 , 5.73 ± 1.91 , 4.59 ± 2.19 , 4.02 ± 2.32 and 3.32 ± 2.23 for the methoxyflurane group and 8.68 ± 0.78 , 8.08 ± 1.38 , 7.56 ± 1.70 , 6.70 ± 1.91 , 5.87 ± 2.30 and 5.20 ± 2.47 for the SAT group. The decrease from baseline was significantly larger for methoxyflurane than SAT at all time points ($p < 0.001$), with the largest treatment difference at 10min (-2.11; 95% CI: -2.75, -1.47; $p < 0.001$). Methoxyflurane-treated patients first reported pain relief at a mean of 6.13min compared with 11.58min for SAT (difference: -5.45min; 95% CI: -8.27, -3.02min; $p < 0.001$). Mean time to first meaningful pain relief was 13.34min for methoxyflurane and 27.38min for SAT (difference: -14.03min; 95% CI: -19.01, -9.06min; $p < 0.001$). Patient satisfaction (scored out of 10) was significantly greater for methoxyflurane than SAT for efficacy (difference: 1.19; 95% CI: 0.59, 1.80; $p < 0.001$) and comfort (difference: 0.77; 95% CI: 0.00, 1.54; $p = 0.05$), and similar for safety. Methoxyflurane exceeded patient/clinician expectations of treatment in 73%/67% of cases compared with 45%/28% for SAT. Adverse events were reported for 31 (35%) methoxyflurane-treated patients (mainly dizziness) and 5 (7%) SAT-treated patients.

Conclusions

Methoxyflurane may be considered as an easy-to-use, rapid-acting, first-line alternative to opioid and other analgesic treatments for patients experiencing severe trauma pain.

Trial Registration / Funding Information (only) :

EudraCT: 2017-000338-70; NCT03256903 / Study funded by Mundipharma Pharmaceuticals S.L.

#18661 : Low dose of inhaled methoxyflurane is more effective with higher patient and clinician satisfaction than first-step intravenous analgesic treatment for acute trauma-related pain: subgroup analysis of a phase IIIb randomised controlled trial (InMEDIATE)

Authors:

César Carballo Cardona (1), Rosa Capilla Pueyo (2), Cesareo Fernández Alonso (3), Sergio García Collado (4), Ignacio Pérez Torres (5), Pere Llorens Soriano (6), José Ramón Casal Codesido (7), María Arranz Betegón (8), Luis Amador Barciela (9), Aitor Odiaga (10), Anselma Fernández Testa (11), Jorge Trigo Colina (12), Antonio Cid Dorribo (13), Isabel López Isidro (14), Susana Traseira Lugilde (15), Alberto M. Borobia Pérez (16)

1. Emergency Department, Hospital Universitario La Paz, Madrid, SPAIN
2. Emergency Department, Hospital Universitario Puerta de Hierro-Majadahonda, Madrid, SPAIN
3. Emergency Department, Hospital Universitario Clínico San Carlos, Madrid, SPAIN
4. Emergency Department, Hospital Campo Grande, Valladolid, SPAIN
5. Emergency Department, Hospital Universitario Virgen del Rocío, Sevilla, SPAIN
6. Emergency Department, Hospital General Universitario de Alicante, Alicante, SPAIN
7. Emergency Department, Hospital El Bierzo, Ponferrada, SPAIN
8. Emergency Department, Hospital de Viladecans, Viladecans, SPAIN
9. Emergency Department, Hospital Álvaro Cunqueiro, Vigo, SPAIN
10. Emergency Department, Hospital Gernika-Lumo, Gernika-Lumo, SPAIN
11. Emergency Department, Complejo Asistencial de Zamora, Zamora, SPAIN
12. Emergency Department, Hospital Asepeyo Coslada, Coslada, SPAIN
13. Medical Emergency Service of Madrid (SUMMA), Extra-hospital Emergency Center El Molar, Madrid, SPAIN
14. Emergency Department, Hospital Universitario de La Princesa, Madrid, SPAIN
15. Medical Department, Mundipharma Pharmaceuticals S.L., Madrid, SPAIN
16. Clinical Pharmacology Service, Hospital Universitario La Paz, Madrid, SPAIN

Keywords: Analgesia, emergency, methoxyflurane, non-opioids, non-steroidal anti-inflammatory drugs, pain, trauma

Abstract :

Background

The use of opioids for treating pain in the emergency settings is a pillar of current options, however some health professionals are reluctant to prescribe opioids, which contributes to the problem of poor pain management. Therefore, there is an unmet need for a non-narcotic, rapid-acting, safe and effective analgesic. Inhaled methoxyflurane has recently been approved in Europe for the emergency relief of moderate-to-severe pain in conscious adults with trauma and associated pain. The InMEDIATE trial compared the pain relief achieved with methoxyflurane versus standard analgesic treatment (SAT), comprising any opioid or non-opioid analgesia by any route as defined per the pre-registered local analgesic protocol used in each site. The results of the trial shown that although patients included suffered a severe mean baseline pain, more than three quarters of the group (77.85%) were treated with intravenous non-opioids. Results of a post hoc subgroup analysis of methoxyflurane vs. intravenous non-opioid analgesia (IV-NOP) are reported here.

Methods

InMEDIATE (EudraCT: 2017-000338-70; NCT03256903) was a phase IIIb, open-label, randomised controlled trial conducted in 14 Spanish emergency units from July/2017 to April/2018. At triage, adults with acute trauma pain, NRS₀₋₁₀ score ≥ 4 , secondary to trauma were randomized 1:1 to receive inhaled methoxyflurane or SAT. Exclusion criteria included use of analgesic for the acute traumatic pain before randomisation, and contraindications to analgesics to be used in the trial. Efficacy endpoints included change in pain intensity (primary endpoint), and time to onset of pain relief (co-primary endpoint) for 20 min after start of treatment, and patient/clinician-reported outcomes. The treatments were compared in an exploratory manner using 2-tailed t-tests.

Results

156 patients received methoxyflurane and 104 IV-NOP, mean age 45.3 ± 18.7 vs 45.5 ± 18.2 years; 51% vs 43% male, and mean baseline pain scores 7.63 ± 1.39 vs 7.48 ± 1.55 , respectively. In the IV-NOP group almost all patients (92.3%) received non-steroidal anti-inflammatory drugs [NSAIDs], \pm other non-opioids \pm diazepam). Other drugs were metamizole and paracetamol. Mean pain relief was significantly greater ($p < 0.001$) for methoxyflurane than IV-NOP at all-time points, with the largest treatment difference at 10min (1.81; 95% CI: 1.31, 2.31). Mean changes from baseline to 3, 5, 10, 15 and 20min were 1.80, 2.73, 3.66, 4.20 and 4.73 for methoxyflurane and 0.56, 1.11, 1.84, 2.58 and 3.30 for IV-NOP. Time to onset of pain relief was significantly shorter for methoxyflurane than IV-NOP (mean 5.52 vs. 12.19min; difference: -6.26min; 95% CI: -8.28, -4.25min; $p < 0.001$) as was time to first meaningful pain relief (mean 12.39 vs. 24.37min; difference: -11.58min; 95% CI: -15.22, -8.33min; $p < 0.001$). Investigators and clinicians scored significantly better effectiveness and comfort with methoxyflurane vs IV-NOP ($p < 0.001$) using a NRS₀₋₁₀ scale. Methoxyflurane exceeded patient/clinician expectations of treatment in 75%/71% of cases vs. 40%/21% for IV-NOP. 24% methoxyflurane-

treated patients and 4% of IV-NOP patients experienced adverse events. The most frequent event was dizziness (13,4%), mainly mild and transient.

Conclusions

Methoxyflurane provided superior pain relief to IV non-opioid analgesics in patients with acute trauma pain, with higher patient and clinician satisfaction with methoxyflurane treatment.

Trial Registration / Funding Information (only) :

EudraCT: 2017-000338-70; NCT03256903 /Study funded by Mundipharma Pharmaceuticals S.L.

#18663 : ED impact of a mass gathering pre-hospital support system: the Rouen 2013 Armada event

Authors:

Julie Dumouchel (1), Melanie Roussel (2), Mehdi Taalba (2), Virginie Eve Lvovschi (2), Antoine Lefevre (2), Luc Marie Joly (2)

1. ED / SAMU / SMUR, CHRU Tours, Tours, FRANCE

2. ED / SAMU / SMUR, CHRU Rouen, Rouen, FRANCE

Keywords: Mass gathering ; emergency medical service ; disaster medicine

Abstract :**ABSTRACT****Objective(s)**

There is no data about the intra-hospital crowding effect of pre-hospital mass-gathering support systems. Our objective was to evaluate the impact on emergency departments (EDs) of the Rouen Armada event 2013 (RAE2013), a major French happening.

Methods

We performed a multicenter, observational study based on the prospective collection of data on-site (8 first aid stations) and from 5 EDs in the Rouen area.

The main study endpoint was the total number of patients presenting to EDs for an Armada-related reason (ARR). Secondary endpoints were: demographics, care pathways, final diagnosis, care characteristics and outcomes. Then, we performed a focussed analysis on two subgroups (with vs without pre-hospital examination).

Results

Among 1,261 patients examined on-site, 246 presented to ED with an ARR (63 % with accidental injury, 85% discharged home). Only 6 patients had severe injuries. 88% of patients required some technical support in the ED. In the subgroup without pre-hospital examination (49%), we found significantly higher rates of young and local patients, which mainly presented to a private hospital. In the other subgroup, we found a higher significant rate of discomfort and more use of ED technical support (biology, EKG).

Conclusions

RAE2013 pre-hospital support system efficiently protected EDs from overcrowding. Most of the ED visits were appropriate. This study highlights the importance of sufficient on-site resources for the most common presentations, and the relevance of intra-hospital registers.

#18664 : Self-inhaled methoxyflurane for analgesia in trauma patients: a case series

Authors:

Marko Zlicar (1), Anita Mrvar Brecko (1)

1. Department of anesthesiology and surgical intensive therapy, University medical centre Ljubljana, Ljubljana, SLOVENIA

Keywords: methoxyflurane, analgesia, trauma, pain

Abstract :

Background

Methoxyflurane has been used for analgesia in Australia and New Zealand for decades and was recently introduced in clinical practice in Europe. According to literature, it is fast acting, has good analgesic properties and a favourable safety profile. However, as a halogenated anaesthetic it is not without risk, can trigger malignant hyperthermia and has been associated with both mild and severe adverse reactions (AR). Our aim was to record our clinical experience with methoxyflurane (Pentrox® hand-held inhaler) in a tertiary trauma centre in Slovenia in a case series of patients.

Methods

Normal use of Pentrox®, indicated by the attending physician for intermediate to severe pain associated with trauma was monitored using a questionnaire in a tertiary trauma emergency centre. Pain was recorded as VAS (Visual Analogue Scale, 0=no pain, 10=worst pain imaginable) before analgesia and thereafter in 5min intervals for 20 minutes. Number of methoxyflurane inhalations to first pain relief, patient and provider satisfaction were also recorded. Data was gathered and analysed using descriptive statistical methods with MS Excel.

Results

20 adult patients (8 male, 12 female; aged 18-90, mean 53) with single-system trauma (fractures and dislocations) were included in the observation. The mean VAS before analgesia (VAS0) was 6.25 (95% CI 4.99-7.51) and at other intervals as follows: VAS5=4.65 (95% CI 3.50-5.80), VAS10=3.85 (95%CI 2.46-5.24), VAS15=3.1 (95%CI 2.01-4.19), VAS20=2.85 (95%CI 1.69-4.01). The maximum reduction in pain was achieved during the first interval (reduction in VAS for 1.6, p=0.065), and it continued to reduce for the remainder of recording time, reaching minimum values at 20min. The median number of inhalations for the initial pain relief was 5 (IQR 3-6). Satisfaction was rated on the scale from 1 to 10, the average score in both patients and providers was 8. No deterioration in vital signs or consciousness was recorded (data available upon request). There was one case of mild dizziness and one case of mild cough recorded at 5min interval and both subsided spontaneously. Rescue analgesia was provided in 4 cases.

Discussion and Conclusions

Our observation shows a similar pain reduction profile as in previous reports. Acceptable pain levels (VAS≤3) were mostly achieved within 15 minutes, but the maximum reduction of pain in any given 5-minute interval was achieved during the first five minutes. Although this result lacks statistical significance (p=0.065), it still indicates a fast mode of action. First pain relief was felt after 3-6 (mostly 5) breaths, quite similar to previously reported. Only two self-limiting ARs were recorded.

A limitation of this report is that it was a case series of normal treatment with limited number of patients included and not compared to a standard of care. However, we confirmed previously reported analgesic properties and safety profile.

In conclusion, self-inhaled methoxyflurane is a well-tolerated, effective and fast acting analgesic agent in trauma patients and as such a useful addition to the arsenal of pain relief methods.

Ethical approval

Because this was normal on-label use of registered drug, ethical approval was not needed.

Trial Registration / Funding Information (only) :

none

#18665 : Radiograph-negative ankle injuries in bicycle-spoke accidents: a retrospective cohort study**Authors:**

Susanne Laumer (1), Lottie van Kooten (1), Anita Lekx (1)

1. Department of Emergency Medicine, VieCuri Medical Centre, Venlo, THE NETHERLANDS

Keywords: bicycle spoke injury, ankle injury, Salter Harris type 1

Abstract :**Background**

Bicycle spoke injuries (BSIs) are frequently assessed in the Emergency Department (ED). Because of the risk of occult growth plate fractures, also known as Salter Harris type 1 (SH1) fractures, most patients are treated with cast immobilisation. Previous studies paid far too little attention to patients with radiograph-negative ankle injuries and possible clinical predictors which might be useful for adequate risk assessment. Is cast immobilization always justified?

Methods

A retrospective cohort study was performed, including all children ≤ 12 years visiting our ED with a BSI from January 2010 to December 2017. Patients without radiographic evidence of a fracture were classified as low or high index of suspicion of SH1, based on ED assessment and prolonged cast immobilization. Multivariate logistic regression analysis was used to identify independent predictors of SH1.

Results

323 patients with a mean age of five years were included. Ninety-three patients (29%) had a proven fracture; 230 patients were radiograph-negative at first presentation. Of these, 166 patients (72%) were treated with cast immobilization. Only 32 patients (10%) were classified as high index of suspicion of SH1. No clinical variables were found to be predictive for SH1. Local tenderness at the lateral malleolus was associated with SH1, however this clinical predictor was not statistically significant (OR 5.65, p-value 0.057).

Conclusion

Although BSIs with radiograph-negative ankle injuries are generally treated with cast immobilization, the actual prevalence of SH1 is low. In this study no clinical variables could significantly predict SH1. However, lateral malleolus tenderness was associated with SH1 injury. Future studies are warranted to further improve risk assessment and treatment in BSI.

Trial Registration / Funding Information (only) :

Trial Registration: not registered, retrospective cohort study Funding: this study did not receive any specific funding Ethical approval: approved by our institutional review board

#18666 : Retrospective descriptive study of the clinical presentation form with which debutan patients whose clinical diagnosis is an arrhythmia in the out-of-hospital setting in the Community of Madrid

Authors:

HERNÁNDEZ MARTÍNEZ SARA (1), UZURIAGA MARTÍN MIRIAM (2), MARTÍN OLALLA OLGA (1), HIDALGO GONZÁLEZ EVA (2), GONZÁLEZ BAREA MYRIAM (1), GONZÁLEZ MORENO YOLANDA (1), CLAUDIO ROMO ENRIQUE (1)

1. NURSERY, SUMMA 112, Madrid, SPAIN
2. MEDICINE, SUMMA 112, Madrid, SPAIN

Keywords: #Symptoms #Arrhythmias #Summa112 #Emergency

Abstract :

The Emergency Medical Service of Madrid (SUMMA 112) is the outpatient medical emergency service of the Regional Ministry of Health of the Community of Madrid. Its scope of competences includes homes and work emergencies in the city of Madrid and all emergencies in the rest of the Community.

Taking into account all of the above, it was decided to conduct a retrospective descriptive study in the specific period of the first semester of 2017 based on the clinical records of SUMMA 112. There were 3752 clinical records with ICD 9 corresponding to some diagnosis of some type of arrhythmia. It was decided to exploit a sample of 20%, which corresponded to a figure of 750-800 medical records. Finally, data from 827 clinical histories were collected, of which 787 were considered valid, a figure that represented the final N of our analysis. This analysis is intended to describe, in a representative way by the sample size, the form of clinical presentation with which patients who are finally diagnosed with an arrhythmia in the Community of Madrid. For this, we requested, first, authorization to the Management and to the Management of the SUMMA 112 and, second, accreditation to the Departments of Clinical Documentation and Information Technology, for the revision of histories and the exploitation of the obtained data. Data were collected from a total of 787 clinical records with ICD 9 MC corresponding to some type of arrhythmia.

A fundamental aspect of our analysis was to determine the clinical manifestation of the episode of arrhythmia that was the reason for assistance by SUMMA 112, which is important, given that it defines the criteria for hemodynamic instability. These affect the patient in one way or another (cardioversion electric Vs pharmacotherapy)

We remember the criteria of instability or poor hemodynamic tolerance of arrhythmias:

- Hypotension. Systolic blood pressure <90 mmHg or decrease of 30 or more mmHg of SBP compared to baseline.
- Shock. Paleness, sweating, cold and wet extremities
- Decreased level of consciousness.
- Syncope not clearly neuromediated.
- Heart failure. Pulmonary edema (left ventricular failure) and / or increased jugular venous pressure and hepatomegaly (right ventricular failure).
- Myocardial ischemia. It can present with chest pain (angina) or it can occur without pain, as an isolated finding in the 12-lead ECG (silent ischemia)

Especially important if there is coronary artery disease or underlying structural heart disease because it can produce complications including cardiac arrest

Leaving apart episodes of asymptomatic arrhythmia, which obviously do not generate notice, the reasons for requesting medical assistance from our patients were in 276 cases (35.06%) the sensation of palpitations, in 186 (23.63%) the chest pain, in 223 (28.33%) the feeling of dizziness, in 171 (21.72%) dyspnea, in 94 (11.94%) the episode of arrhythmias was manifested as a syncope and in 11 cases (1 , 39%) the episode of arrhythmia manifested as a stroke.

#18668 : Tachyarrhythmias and bradyarrhythmias in emergency department**Authors:**

Răzvan-Marius Dobre (1), Ana Daniela Țăran (1), Maria-Ioana Oana-Albu (1), Diana Ionela Checiu (1), Roxana Andreea Dobre (1), Cristian Ichim (1)

1. Emergency, UPU-SMURD Sibiu, Sibiu, ROMANIA

Keywords: Bradyarrhythmias, tachyarrhythmias, Atrial Fibrillation, bundle branch block, atrioventricular block, paroxysmal supraventricular tachycardia, flutter

Abstract :**Background:**

Cardiac arrhythmias are accelerated, slowed, or irregular heart rates caused by abnormalities in the electrical impulses of the myocardium. Both tachyarrhythmias and bradyarrhythmias are frequently symptomatic and often result in patients seeking care at their general practitioner or the emergency department.

Materials and Methods:

This study was performed through a retrospective, observational method on a total number of 69 895 patients presented between 31.12.2017-31.12.2018 at UPU-SMURD in the Sibiu County Emergency Clinical Hospital, from which 3572 suffered from cardiac arrhythmias, the cardiopulmonary arrest cases being excluded. The aim of the study was to highlight the most common cardiac arrhythmias that were reported in the Emergency Department.

Results & Discussion

During the period of time taken into consideration for this study, out of the total of 3572 patients that presented with cardiac arrhythmias, 2394 (67,02%) were coming from the urban area and 1178 (32,98 %) were from the rural area. The distribution by age was: between 18-35 years 179 patients (5,01%), between 36-50 years 214 patients (5,99%), between 51-65 years 607 patients (16,99%), between 66-80 years 1500 patients (41,99%) and over 81 years 1072 patients (30,01%).

Out of the total number of cardiac arrhythmias, 620 cases (17,36%) were bradyarrhythmias and 2952 cases (82,64%) were tachyarrhythmias.

From all bradyarrhythmias cases there were 250 cases of right bundle branch block (40,32%), 193 cases of left bundle branch block (31,13%), 87 cases of sinus bradycardia (14,03%), 85 cases of atrioventricular block (AV block) (13,71%), from which third-degree AV block had the highest incidence, and 5 cases of sinus node dysfunction (0,81%).

From all tachyarrhythmias cases there were 1702 cases of atrial fibrillation (57,66%), 791 cases of extrasystolic arrhythmia (26,80%), 242 cases of sinus tachycardia (8,20%), 160 cases of paroxysmal supraventricular tachycardia (5,42%), 46 cases of flutter (1,55%) and 11 cases of ventricular tachycardia with pulse (0,37%). Regarding atrial fibrillation, out of 1702 cases 836 were with high ventricular response (VR) (49,11%), 630 cases were with medium VR (37,02%), 236 cases with low VR (13,87%) and the distribution by age revealed the highest incidence in the age group of 76-90 years old, summing a total of 834 cases (48,52%) out of 1702 total number and the youngest patient with atrial fibrillation was 29 years old, while the oldest was 99 years old.

Conclusions:

Regarding the distribution between tachyarrhythmias and bradyarrhythmias, tachyarrhythmias had a higher incidence, atrial fibrillation remaining the most common arrhythmia encountered in Emergency Department, followed by extrasystolic arrhythmia while from all the cases of bradyarrhythmias right bundle branch block had the highest incidence, followed by left bundle branch block.

Based on the ventricular response in atrial fibrillation, we established that the majority of atrial fibrillation cases were paroxysmal, this fact had high importance being known that cardioversion is usually done in this phase.

Most cases of cardiac arrhythmias were reported in the age group between 66 and 80 years old, because of that we recommended the implementation of an annual EKG screening program for patients over 60 years old.

#18670 : Efficacy of methoxyflurane in analgesia for acute trauma related pain

Authors:

IVANA SRZIC (1), VISNJA NESEK ADAM (1)

1. , CLINICAL HOSPITAL SVETI DUH, ZAGREB, CROATIA

Keywords: methoxyflurane, pain, emergency department

Abstract :

Efficacy of methoxyflurane in analgesia for acute trauma related pain

IVANA SRZIC, dr.med., prof.prim.dr.sc. VIŠNJA NESEK ADAM, dr.med.

Clinical Hospital Sveti Duh, Department of Emergency Medicine, Clinical Hospital Sveti Duh 64, 10 000 Zagreb, Croatia

Key words: methoxyflurane, pain, emergency department

Abstract:

Aim:

The inhalational analgesic low-dose methoxyflurane has been widely used by Australian ambulance services since 1975 and is now approved in Europe for emergency relief of moderate-to-severe trauma-related pain in conscious adult patients. This study investigated the efficacy and safety of use of inhaled methoxyflurane in patients with moderate to severe trauma related pain.

Methods:

Study was made in December 2018, included 13 patients age range from 24 to 72 years, who presented to the ED of a Clinical Hospital Sveti Duh in Zagreb with moderate to severe trauma related pain. Patients received 3 mL methoxyflurane, self-administered by the patient by inhalation under medical supervision. Pain intensity was measured using a 100-mm visual analogue scale (VAS) at baseline , 10, and 20 min after the start of methoxyflurane inhalation.

Results:

Mean VAS pain score at baseline was 78,1 mm. Adjusted mean change in VAS pain score intensity from baseline to 10 and 20 minutes was -41,7 and -55 mm. 23 % of all 13 patient reported adverse reactions such as mild transient dizziness.

Conclusion:

The undertreatment of acute pain presents a significant challenge in the Emergency Department. Results suggest that low dose inhaled methoxyflurane is an efficacious, safe, and rapidly acting analgesic in adolescent patients presenting with moderate-to-severe trauma pain.

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#18671 : PROtein S (in) Emergency Room (of) Patients (with) Head Injury on Anticoagulants: the PROSERPHINA STUDY**Authors:**

Vincenzo G Menditto (1), Mattia Sampaolesi (1), Francesca Riccomi (1), Sirio Lombardi (1), Marta Buzzo (1), Alessandro Mor (1), Francesca Fulgenzi (2), Alessia Raponi (1), Lara Montillo (1), Giovanni Pomponio (3)

1. Emergency Department, Ospedali Riuniti di Ancona, Ancona, ITALY
2. Emergency department, Ospedali Riuniti di Ancona, Ancona, ITALY
3. Department of Internal Medicine, Ospedali Riuniti di Ancona, Ancona, ITALY

Keywords: minor head trauma; protein S100B; anticoagulant therapy; head CT scan

Abstract :**Background**

It remains unclear whether patients with minor traumatic brain injury (TBI) and concomitant anticoagulant therapy who obtain a first head CT scan negative for intracranial hemorrhage (ICH), should be hospitalized for observation or undergo a second CT scan.

Recently, protein S100B, a 21-kDa calcium-binding glial-specific protein mainly expressed by astrocytes, has received a special attention as a possible biomarker for brain damage after minor TBI.

The objective of our study is to evaluate the reliability of protein S100B as a negative predictive factor for ICH at the second CT scan in patients with minor TBI in treatment with oral anticoagulants.

Methods

We conducted a prospective, observation trial involving patients who presented at our Emergency Department within 6 hours from a minor TBI (GCS 14-15). Qualifying patients must have been taking oral anticoagulants and had a basal CT head scan negative for ICH. Patients were consecutively included from May 2018 to January 2019. From each patient giving informed consent a venous blood sample was obtained within 6 hours after injury to determine the serum S100B levels. Qualifying patients were admitted to our ED observation unit, where they received neurologic examination every 4 to 6 hours for 24 hours and a second CT scan before discharge.

Results

In an interim analysis we enrolled 58 of 100 predicted (58%) patients: 46.5% male, median age 82.0 years (range 33-96). 29 patients (50%) were on VKA treatment and 29 (50%) were on NOACs: 12 (20.7%) apixaban, 12 (20.7%) rivaroxaban and 5 (8.6%) dabigatran. On admission we analyzed 53 (91.4%) blood samples for S100B protein. Of these patients 2 (3.8%) had second CT head scan positive for mild ICH and 51 (96.2%) had a second CT head scan negative. With a cutoff of 0.200 $\mu\text{g/l}$, protein S100B at admission was able to identify an ICH on second CT scan with a sensitivity of 100%, a specificity of 62.7%, a positive predictive value of 10% and a positive likelihood ratio of 2.68. The negative predictive value was 100% and the negative likelihood ratio was 0.00.

Discussion and conclusions

In an interim analysis, measurement of plasma protein S100-B within 6 hours from minor TBI on admission in patients on oral anticoagulants appears a predicting factor to support the clinician's decision not to perform second CT head imaging.

Trial Registration / Funding Information (only) :

None

#18672 : Risk actors of patients whose clinical diagnosis is an arrhythmia in the extrahospital area in the Community of Madrid

Authors:

ANA MARIA MARTIN QUINTANA (1), MIRIAM UZURIAGA MARTÍN (2), MIGUEL SANTIUSTE GARCÍA (3), PILAR VARELA GARCÍA (3), ANA MORENO SERRANO (3), SARA HERNÁNDEZ MARTÍNEZ (3), JUAN JOSÉ FERNÁNDEZ DOMINGUEZ (2), PILAR MEDINA DÍAZ (4)

1. TECHNICAL, SUMMA112, MADRID, SPAIN
2. MEDICINE, SUMMA112, MADRID, SPAIN
3. NURSERY, SUMMA112, MADRID, SPAIN
4. SUMMA112, SUMMA112, MADRID, SPAIN

Keywords: Risk factor's, Arrhythmias, Summa112, Emergency

Abstract :

Estudio del corazón de Framingham introdujo el concepto de factores de riesgo cardiovascular. Este término se usó por primera vez en una publicación de Framingham Heart Study tiene unos 30 años y se usó para describir una asociación de riesgo con enfermedades cardiovasculares. El análisis exhaustivo del mismo, desde el punto de vista epidemiológico, ha permitido conocer varios factores que pueden influir en la aparición y en el mejor pronóstico del paciente con enfermedad cardiovascular, entre el que se incluye la hipertensión arterial, hipercolesterolemia, obesidad, estilo de vida sedentario, diabetes, edad, alcoholismo y tabaquismo.

El Servicio de Emergencias Médicas de Madrid (SUMMA112) es el servicio de urgencias médicas ambulatorias del Ministerio de Salud de la Comunidad de Madrid. Su ámbito de competencias incluye hogares y emergencias laborales en la ciudad de Madrid y todas las emergencias en el resto de la Comunidad.

Teniendo en cuenta todo lo anterior, se decidió realizar un estudio descriptivo retrospectivo en el período específico del primer semestre de 2017 sobre la base de los registros clínicos de SUMMA112. Hubo 3752 registros clínicos con CDI 9 correspondientes a algún diagnóstico de algún tipo de arritmia. Se decidió explotar una muestra del 20%, que correspondía a una cifra de 750-800 registros médicos. Finalmente, se recopilaron datos de 827 historias clínicas, de las cuales 787 se consideraron válidas, una cifra que representa la N final de nuestro análisis. Este análisis pretende describir, de manera representativa, el tamaño de la muestra, los factores de los pacientes con riesgo cardiovascular cuyo diagnóstico clínico es una arritmia en la Comunidad de Madrid. Para ello, solicitamos, primero, autorización a la Administración del SUMMA112 y, segundo, Acreditación a los Departamentos de Documentación Clínica y Tecnología de la Información, para la revisión de historias y la explotación de los datos obtenidos. Los datos se recopilaron de un total de 787 registros clínicos con ICD 9 MC correspondiente a un cierto tipo de arritmia.

Entre los factores de riesgo para presentar el tipo de arritmias, la hipertensión arterial fue la más frecuente, 448 casos (56,92%), 326 casos (41,42%) tenían antecedentes de episodios de arritmia previos, 194 pacientes (24, 65%) eran diabéticos y 266 (33,79%) fueron dislipidémicos. Hubo 159 casos (20,2%) con cardiopatía estructural (valvular, congestiva, dilatada o hipertrófica) y la cardiopatía fue isquémica en 122 casos (15,5%). La baja prevalencia del historial de tabaquismo con 44 casos (5,59%) es sorprendente, posiblemente porque no se refleja en los informes clínicos. Y 85 casos (10,8%). Otros antecedentes relacionados con arritmias (hipertiroidismo, anemia, consumo de sustancias...)

#18673 : Comatose patients in pre-hospital. Endotracheal intubation, a chance to life**Authors:**

Maria-Ioana Oana-Albu (1), Ana Daniela Țăran (1), Ștefania Noemi Opreș (1), Alexandra Maria Ionescu (1)

1. Emergency , UPU-SMURD Sibiu, Sibiu, ROMANIA

Keywords: intubation, cardiopulmonary arrest, factors, thrombolysis

Abstract :**Introduction:**

In pre-hospital, endotracheal intubation is a common medical procedure that can make the difference between life and death.

Materials and Methods:

The study was performed through a retrospective observational method on a total number of 2140 cases that occurred to SMURD Mobile Care Intensive Unit (TIM) Sibiu between January 2017 and January 2019, out of which 327 cases of intubated patients. The aim of the study was to stand out the causes that led to endotracheal intubation (EI) in pre-hospital.

Results & discussion:

During the period of time taken into consideration for this study, out of the total of 327 intubated patients: 230 (70,34%) were males and 97 (29,66%) were females.

The distribution by age was: under 18 years 13 patients (3,98%), between 19-40 years 26 patients (7,95%), between 41-55 years 60 patients (18,35%), between 56-70 years 116 patients (35,47%), above 71 years 112 patients (34,25%).

After being classified into: with induction and without induction, it was obtained a number of 91 patients with rapid sequence induction (RSI) and 236 patients intubated without induction. The medication predominantly used for RSI was Midazolam and Lysthenon.

From the total of 327 patients, a number of 233 patients (71,25%) suffered from cardiopulmonary arrest, from which 213 (91,42%) were per se and 20 (8,58%) were in special circumstances, such as: hypothermia, drowning, intoxication, electrocution, anaphylactic shock, hyperglycemic coma. Another cause of EI was trauma, that affected 31 patients (9,48%) wherefrom car accidents had the highest incidence. A high rate of endotracheal maneuvers were performed on patients who were neurologically affected- 22 patients (44%), respiratory affected- 14 patients (28%) and cardiovascularly affected- 14 patients (28%), representing a total percentage of 15,29%. Inter-clinical transfers represent a percentage of 3,98%.

A number of 57 patients (17,43%) needed mechanical ventilation: for 20 of them (35,09%) was necessary Synchronized Intermittent-Mandatory Ventilation (SIMV), for 31 patients (54,39%) Intermittent Positive Pressure Ventilation (IPPV) and for 6 patients (10,52%) Continuous Positive Airway Pressure (CPAP).

Thrombolytic therapy is available on SMURD Romanian Emergency Medical Service (EMS) and the direct beneficiaries are the individuals who suffer from ischemic cardiac dysfunction, which in our study is represented by 8 patients (2,45%).

Conclusions:

SMURD TIM C1 is available for interventions 24 h/24h being qualified for using anaesthetic treatment for comatose patients.

Endotracheal intubation was performed especially in cardiopulmonary arrest cases, which distanced themselves from other causes by a higher percentage.

The most affected patients were males and those between 56 and 70 years old.

A special category is represented by thrombolysed patients in Sibiu, thrombolysis being the treatment applied both in pre-hospital and hospital, with the difference that in the cardiac catheterization laboratory it is not available 24h/24h as in for SMURD TIM.

#18676 : The incidence of traffic accidents in the prehospital setting in Sibiu county, Romania**Authors:**

Stefania Noemi Opris (1), Cristian Ichim (1), Maria-Ioana Oana-Albu (1), Aurel Sbarcea (1)

1. Emergency Medicine, UPU-SMURD SIBIU, Sibiu, ROMANIA

Keywords: gravity, incidence

Abstract :**INTRODUCTION:**

Traffic accidents represent a daily issue encountered especially in urban areas, that requires rapid medical intervention, which in prehospital, in Sibiu and surroundings is assured by SMURD Romanian Mobile Intensive Care Unit (TIM). The aim of the study was to emphasize the severity and incidence of car accidents.

MATERIALS AND METHODS:

The paper presents a retrospective observational study on a number of 284 patients between 01.01.2018 – 01.02.2019. All these cases were encountered on the TIM SMURD Sibiu ambulance.

RESULTS AND DISCUSSION:

During the period of time taken into consideration for this study, there were a total of 179 cases. Based on the number and frequency of emergencies, correlating them with daytime period and months, the highest incidence was in the afternoon 54 cases (31%), in the following months: July 19 cases (12%), August 19 cases (12%), December 18 (11%). Considering the place of accidents, the highest number is registered in urban area with a total of 101 cases (56,42%).

The gender distribution was the following: 170 males (60%) and 114 females (40%). The age group was divided into 4 categories: below 18 years were 39 patients (16%), between 19-35 years 93 patients (37%), between 36-55 years 70 patients (28%) and above 56 years 47 patients (19%). Depending on the suffered injuries the distribution was: with no injury and refusing hospitalization 96 patients (50.52%), minor contused 64 patients (33.68%), polycontused 26 patients (13.68%) and polytraumatized 4 patients (2.12%). The lesions were classified into: cerebral cranial trauma summing 83 patients (47.97%), craniofacial trauma 18 patients (10.40%), thoracoabdominal trauma 49 patients (28.32%) and upper and lower limbs trauma 23 patients (13.29%). Rapidly deadly trauma account for up to 4.08% registering 2 cases of hemopneumothorax. Assessing the state of consciousness, based on Coma Glasgow Score (CGS) the distribution was: suffering minor injuries (CGS= 15-13) 161 patients (95%), moderate injuries (CGS=12-9) 7 patients (1%) and severe injuries (CGS=<8) 17 patients (4%). The necessity of endotracheal intubation was encountered in 16 cases (9.19%) revealing that for 13 patients (81.25%) Crush Induction Intubation was used. Regarding the evolution of patients during the transportation from the place of accident to the Emergency Room (ER) the distribution was: stationary 149 patients (94%), improved 4 patients (2%), worse 5 patients (3%) and deceased 1 patient (1%).

CONCLUSION AND PERSPECTIVES:

Traffic accidents is a medical emergency that affect all patients of all age groups with a predisposition to men of middle age. The highest rate of accidents is registered during the summer and winter months, especially in the afternoon. Fortunately, the gravity of cases is not high and the polytraumatized patients representing a low percentage of the total.

#18677 : Description of a mentoring program on onboarding emergency department physicians**Authors:**

Eduardo Segalla de Mello (1), Fernando Ramos de Mattos (1), Tarso Augusto Duenhas Accorsi (1), Nam Jim Kim (1), Adriana Vada (1), Mauricio de Oliveira de Avelar Alchorne (1), Davi Bellan (1), Helio Minoru Samano (1), Davi Wen Wei Kang (1), Joao Ricardo Cordeiro Fernandes (1), Marly Pires Goncalvez (1), Paulo Marcelo Zimmer (1), Jose Leao Souza Junior (1), Sidney Klajner (1)

1. Emergency Department, Hospital Israelita Albert Einstein, Sao Paulo, BRAZIL

Keywords: Emergency Medical Services, Education, Mentors

Abstract :

Introduction: There is a multifactorial delay in the engagement of onboarding emergency department (ED) physicians in the quality and safety patient care culture. The impact of a mentoring program (MP) on improving these issues and self-development is not known in a long-term. We report the initial experience of a MP in an ED. Methods: A MP was developed in the Hospital Israelita Albert Einstein (Sao Paulo , Brazil) ED in 2017. This ED is composed by four outhospital units and one inhospital unit. A median of 330.000 patients per year are assisted. The ED team is composed by non-emergency physicians (2 manager, 17 senior and 260 juniors). The first step of the program was to educate the mentor board, composed by 12 senior physicians selected by an expert committee. The education of the mentors was done by a specialized consultant. The consultant and the senior co-designed a mindmap guide for the mentees, called Einstein mentoring book, which was composed by topics that facilitate learning: challenge, expand perspectives, expose mentee to some previous agreeable situation, sponsor, provide guidance or even help to solve problems. Another task of the mentor was to teach by giving example, so they invite the mentee to participate of daily activities with them. We analyzed the first two years of the program that is still ongoing. The program results are evaluated using qualitative satisfaction survey and the employee Net Promoter Score (eNPS) with mentees each 90 days since the admission. We also analyzed eNPS changes during the years. Results: The mentoring sessions occurred from January 2017 to December 2018. In this period, a totally of 62 mentees were included, 38 have already concluded the program. In 2017, 67 physicians were admitted and 37 (55%) were included in the program and in 2018, 25 were admitted and included (100%). A median of eight (8) *per mentee*:1 meeting between mentors and mentee happened. After the program, the Net Promoter Score of the ER had a significant increase when compared to the years 2011-16 (52 vs 67%). The eNPS of the mentees was a media of 90%. Discuss: Mentoring is an effective approach to engage just hired ED physicians. In the point of view of the mentee the experience develops knowledge, practical skills that are essential for integration and acculturation in the organization; also allows to share emotions, concerns, success and failures. The program is an opportunity to develop they self-leadership, request and offer feedback, construct and plan his/her medical career, to network and expand the contact network. Mentors also have benefit as they develop their leadership skills and are able to share learning, which can improve joy in work. Further analysis have to be done to evaluate the role of the NPS changes and the mentoring program, as other changes were done in the ED could be associated to the NPS changes.

#18678 : Elderly patients outcomes in a tunisian emergency department: university medical emergency department of farhat hached sousse

Authors:

Hajer SANDID (1), mariem khrouf (1), ahmad Mahmoudi (1), ensaf Missaoui (1), Amal Selmi (1), Zied Mezgar (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: elderly outcome emergency department

Abstract :**Introduction:**

elderly patients consulting the Tunisian EDs is in constant increase , it is becoming more challenging for the emergency provider Staff to meet this population's needs due to their disease complexity, comorbidities, and severity. Thus, the first step toward addressing this issue is a better understanding of the nature of ED's visits particularly of those older than 65 years.

Methods:

A prospective observational study was conducted in a University Medical ED of FarhatHached in Sousse, including ED visitors aged more than 65 years during 6 months from 01/03/2018 to 01/09/2018.

Results:

We studied the data of 600 patients that have visited the ED during the study's period; data of 120 patients were incomplete and inadequate for the study.

The median age of the elderly patients was 73 years with a maximum age of 95 years, 317of them were women.61% of the studied patients had a preserved autonomy. Regarding patient's outcomes, 69.2% were discharged from ED while 10.5% died during their ED stay. Only 17% were admitted to the hospital, among which 12% were admitted to a medical ward. 20 patients were discharged against medical advice.

Conclusion:

Complete geriatric assessments are time consuming and beyond the scope of most EDs because of atypical clinical presentation of illness, a high prevalence of cognitive disorders, and the presence of multiple comorbidities complicate their evaluation and management.That's why, more attention andand data analysis should be considered in order to provide high-quality care to this increasing population.

#18679 : Sepsis among the elderly over 65 in the emergency department :ed of farhat hached**Authors:**

Hajer SANDID (1), mariem khrouf (1), ahmad Mahmoudi (1), khoulood hamdi (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: sepsis elderly emergency department

Abstract :**Introduction:**

The population over 65 years represents a significant percentage of emergency room visits, most often the

clinical symptoms are not specific and especially tables of sepsis making prompt diagnosis and treatment

initiation challenging. The prognosis is often unfortunate in view of the multiple medical co morbidities and the delay of consultation.

Our objective was to determine the epidemiological profile of older adults aged 65 years with infection admitted in the emergency department.

Methods:

We conducted a descriptive prospective study in FarhatHached Emergency Department of Sousse over a period of 6 months. We included patients over 65 years old who were admitted to the emergency department for suspected or confirmed infectious disease.

Results:

184 patients were included in our study.

The mean age was 72.3 ± 5.1 years with a female predominance. 65% of the patients had medical antecedents such as hypertension (48%) and diabetes (38%).

Fever was reported by only 17% of patients and was only fully quantified among 3% of cases.

The infectious sources of sepsis was identified in 92% of cases: mainly respiratory tract infections (46%) but

also urinary tract infections (18%) and neuro-meningeal (9%).

we found a tachypnea ≥ 22 cycles / min in 62% of cases, systemic blood pressure at 100 mmHg in 18% of patients and neurological symptoms in 12% of cases.

In our study, 34 patients died. The use of mechanical ventilation was required for 4% of patients and only 2.7% (out of 31% of patients who needed a transfer to the ICU) were admitted into the intensive care unit.

Conclusion:

The prognosis of the infectious pathology requiring the hospitalization of the elderly is severe. One out of two patients would have an organ failure.

We noticed a high rate of mortality and very few are transferred to

intensive care unit

#18682 : Time management of acute abdominal pain in the emergency department experience of farhat hached emergency department**Authors:**

mariem khrouf (1), Hajer SANDID (1), ahmad Mahmoudi (1), mariem khaldi (1), arij bakir (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: abdominal pain time emergency

Abstract :**Introduction:**

Abdominal pain is a common reason for consultation in emergency departments. A quick management can in many cases determine the patient's progress and prognosis.

The aim of this study was To evaluate the different delays in the management of acute abdominal pain in our emergencies.

Methods:

This prospective observational study enrolled 200 patients who presented with acute abdominal pain in the ED of FARHAT Hached's hospital in sousse.

Results:

The average time to triage was 15 minutes with extremes ranging from 2 to 53 minutes. In 65% of cases this time does not exceed 15 minutes. The average time between registration and the first physical examination was 35 minutes + - 42 with extremes ranging from 3 minutes to 6.5 hours.

In 60% of cases the physical examination was carried out in the first 30 minutes. The average time to treatment was 50 minutes + -31 min with extremes ranging from 20 minutes to 3 hours. In 79%

of cases the treatment was done within 60 minutes. The average recovery time of additional examinations is 114 minutes + - 44 min for lab results; and 67 minutes for radiological examinations with extremes ranging from 20 minutes to 2.5 hours. The average time to confirm the final diagnosis was 80 minutes + - 66 min; extremes ranging from 8 minutes to 6.5 hours. ; This time was less than 60 minutes in 49.5% of cases. 21% of patients required hospitalization and the average time between referral and hospitalization was 102 minutes + -40 min with extremes ranging from 5 minutes to 8 hours and 20 minutes.

Conclusion:

The management of acute abdominal pain remains a challenge in emergency departments. The Appropriate

diagnostic evaluation and decision for or against hospitalization within appropriate delays is crucial for better outcomes. Establishing standardized protocols of management of acute abdominal pain can help shorten these delays.

#18684 : Patients requiring niv in emergency department: study of sociodemographic characteristics and clinical presentation**Authors:**

mariem khaldi (1), mariem khrouf (1), ahmad Mahmoudi (1), Hajer SANDID (1), hayfa snoussi (1), asma saada (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: non invasive ventilation emergency department

Abstract :**Introduction:**

Non invasive ventilation (NIV) has been of great use as an alternative to intubation for patient consulting for acute respiratory failure (ARF) in Tunisian emergency departments. It improves survival and reduces complications in selected patients.

Methods:

This is a 6-months prospective observational study in the Emergency Department of the University Hospital FarhatHached, Sousse-Tunisia. We included patients consulting for non traumatic ARF requiring NIV. We analysed patients' characteristics, clinical presentation and evaluated indications for NIV.

Study of sociodemographic characteristics and clinical presentation of patient requiring NIV in a Tunisian Emergency Department.

Results:

63 patients were included during the study's period with a median age (\pm DS) $65,4 \pm 11,5$ years and a sex ratio of 2,5. 55 patients (87,3%) had an obstructive respiratory pathology. 39,7% of the studied population had severe dyspnea graded ≥ 3 according to mMRC dyspnea scale.

Median ED visit delay was 72 hours [48-168 h]. In the first clinical evaluation, the mean RR (\pm DS) $30,68 \pm 6,8$ breaths/min and the mean HR $106,05 \pm 22,13$ beats/min. Only 13 patients had a GCS between 12-14. The primary indication for NIV was hypercapnic respiratory failure (85,7%) with a mean pH value of $7,27 \pm 0,08$, $PCO_2 =$

$69,3 \pm 17,93$ mmHg. For patients with hypoxic respiratory failure, the mean PaO_2/FiO_2 value was 274 ± 132 .

Main underlying ARF etiologies in the studied population were infectious pulmonary diseases, cardiogenic pulmonaryoedema and associated cardiopulmonary decompensation in successively 41, 14 and 6 patients.

Conclusion:

Non invasive ventilation operated by well trained teams is effective and safe. Nevertheless, NIV shouldn't be used as a substitute for endotracheal intubation when the latter is clearly more appropriate.

#18685 : Epidemiological profil of patient with acute abdominal pain in the emergency department**Authors:**

mariem khrouf (1), ahmad Mahmoudi (1), Hajer SANDID (1), ensaf Missaoui (1), rafika ben ftima (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: abdominal pain epidemiology emergency

Abstract :**Introduction:**

Abdominal pain is the most common reason for a visit to the emergency department (ED), accounting for 8 million (7%) of the 119 million ED visits in 2006

Methods:

The aim of our study is to determine the epidemiological and clinical feature of patients consulting the emergency department for abdominal pain .

Results:

we proceeded to a descriptive study that showed that 39% of patients were male and 62% of them were female with a sex ratio of 0,62. The average age of patients was 34 years old and ranged between 15 and 90 years old. We found that 59 patients of our population had medical background, dominated by diabetes in 12 cases, high blood pressure in 8 cases and asthma in 6 cases. The results also showed that 29,5% of patients had a history of abdominal surgery while 13% of them had history of other types of surgery. The patients were oriented according to their severity level as following: 21% care unit of emergency department , 1,5% close monitoring room . The VASPI score was ranged between 1 and 10 with an average of 4+-2. It was higher than 5 in 32,5% of cases. The results of physical examination found an isolated pain in 67,5% of cases, a reactionnal pain syndrom in 15% of cases , a peritoneal syndrome in 12% of cases and an occlusive syndrome in 7% of cases. The final diagnosis

was mostly represented by the following causes: 45,5% of gastroenteritis 11,5% of constipation and 9% of ulcer disease. The final orientation of patients according to the diagnosis led to hospitalization in 21% of cases and to outpatient clinic in 13% of cases while 66% of them did not need any more care.

Conclusion:

Appropriate diagnostic evaluation and decision for or against hospitalization is a challenge in the patient who comes to the emergency department with acute abdominal pain it need an adequate evaluation and management .

#18686 : Clinical and epidemiological profile of elderly patients with acute dyspnea experience of a university emergency department tunisia**Authors:**

Hajer SANDID (1), mariem khrouf (1), ahmad Mahmoudi (1), mariem khaldi (1), Amal Selmi (1), asma saada (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., soussse, TUNISIA

Keywords: dyspnea elderly patient emergency department

Abstract :**Introduction:**

dyspnea is a common reason for consultation in the emergency room .It poses diagnostic difficulties in the elderly patients due to the multiplicity of etiologies, and the difficulties of interpretation of complementary exams .

Methods:

the aim of our study is to identify the epidemiological profile of the elderly patients consulting for dyspnea inER , to define the different complementary exams to practice in first intention and to study the main causes . In this retrospective study, we included all patients over the age of 65 who presented to the EmergencydepartmentFarhatHached in Sousse with Acute Respiratory Failure from March 1, 2018 to June 1, 2018.

Results:

The average age is 78.5 with a female predominance. The medical history of patients in question is mainly cardiac (61%), pulmonary (53%). Dyspnea is isolated in 53% of the cases. Clinical examination reveals signs of severity in 33% of cases, right ventricular failure in 23% and shock signs in 3% of cases. Etiologies are mostly the decompensation of a chronic respiratory insufficiency, APO (Acute Pulmonary Oedema) (28%), heart failure (21%) and pulmonary diseases (10%). 75% of patients are admitted in pneumology department (47%) and cardiology (41%). Death occurs among 0.5% of patients.

Conclusion:

Acute dyspnea is a medical emergency. Thus, it has multiple causes. It's one of the master signs of a cardiac or pulmonary acute disorder that may be life-threatening in short term.

#18687 : Emergency departments' outcomes in patients sent by primary care physicians: the experience of a tunisian emergency department**Authors:**

mariem khrouf (1), Hajer SANDID (1), ahmad Mahmoudi (1), mariem khaldi (1), Amal Selmi (1), imen Ketata (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: primary care physician letter emergency

Abstract :**Introduction:**

Many of the patients who encounter the emergency departments(ED) are sent by primary care physicians.

Although their number is constantly increasing, only a few of them are admitted to an in-hospital department or stay in the emergency department.

Methods:

In this study we aim to reveal the outcomes in patients who were sent to the emergency department of the

University Medical center of FarhatHached,in Sousse by primary care physicians.

An observational prospective study was conducted in the ED of the University Medical Center of FarhatHached, in Sousse including 100 patients

Results:

We analysed the data of 100 patients who visited our ED by the means of a referral letter. 78% of these patients came to the ED on their own. 68% of the studied population were seen in the outpatient care with a triage acuity scale of 4 whereas 11% of them were judged to be critically ill and so needed to be taken care of in the emergency room. As for their destination, 18% of these patients were admitted to an in-hospital ward, 14% were discharged to be further seen in another daily care setting and only one patient died in the ED.

Conclusion:

According to the results of our study, most of the patients who were sent by primary care physicians the ED

needed to be admitted to an in-hospital ward and taken care of by physicians from other specialties. However, the lack of beds in other medical wards prolongs the ED length of stay of these patients and as a result increases the ED crowding. Thus, direct communication means between primary care physicians and fellow doctors from other specialties should be provided in order to improve patients' care in the ED.

#18688 : Risk factors for hypertensive emergency development**Authors:**

Juraj Jug (1), Višnja Neseck Adam (2), Damir Važanić (3), Ingrid Prkačin (4)

1. -, School of Medicine Zagreb, Zagreb, CROATIA
2. PhD, Clinical Hospital Sveti Duh Zagreb, Zagreb, CROATIA
3. mag.med.techn., HZHM, Zagreb, CROATIA
4. PhD, Clinical Hospital Merkur Zagreb, Zagreb, CROATIA

Keywords: hypertension, hypertensive emergency, end-organ damage, tachycardia, atrial fibrillation, diabetes mellitus

Abstract :

Hypertensive emergency as a part of hypertensive crisis entity is defined as a condition with blood pressure above 180/100mmHg combined with progressive end-organ damage. This includes cardiovascular organ damage such as acute pulmonary edema, myocardial infarction, acute left ventricular dysfunction or aortic dissection. Neurologic damage includes stroke, hypertensive encephalopathy and hemorrhage (subarachnoid or intracranial). A kidney may also be affected, which may lead to acute kidney failure. In such a condition blood pressure should be reduced aggressively over a few minutes to hours. Our aim was to discover and highlight the main risk factors for such a condition.

We included 87 patients (44 male, 43 female) which came in our emergency department on Clinical Hospital Merkur from January to April 2019 due to a hypertensive crisis (range of systolic blood pressure 182 to 214 mmHg). Criteria for a hypertensive emergency was met in 16 cases. Seven patients had symptoms of the acute coronary syndrome, 6 had dyspnea, 1 of acute kidney failure and 2 of neurologic genesis. One patient died of acute myocardial infarction. The majority of hypertensive emergencies were caused due to subdosed or discontinued use of antihypertensive medication. Patients were divided into five decades from 40 to 90 years and stratified by sex. An incidence of hypertensive emergency increased with each decade (6.7%-12.5%-14.3%-50.0%-66.7%) but not with each point of BMI ($p = 0.18$) or a number of years from the first hypertensive episode. Also, differences between sexes were statistically insignificant with an important notice that men had 2.5 times more hypertensive emergency episodes than women ($p = 0.11$). The most important risk factor was the heart rate. A chance for developing hypertensive emergency was 6.88 times higher with the heart rate above 90 per minute ($p < 0.01$, CI 2.06–22.95), furthermore 13.2 times higher if the heart rate was above 100 per minute ($p < 0.001$, CI 3.46–50.24). The second one is having atrial fibrillation with blood pressure above 180/100 mmHg which increases the risk of hypertensive emergency by 8 times ($p < 0.01$, CI 1.87–34.74). Other important factors were increased blood sugar levels (OR = 9.5 for blood sugar > 7 mmol/L and OR = 10.2 for blood sugar > 10 mmol/L, $p < 0.001$ respectively) and increased creatinine levels (> 110 mmol/L; OR 4.4, $p < 0.001$, CI 14.1–66.4).

Conclusion: High heart rate, presence of atrial fibrillation, increased blood sugar and creatinine levels and age are independent risk factors for hypertensive emergency development. Sex and obesity didn't show as important factors for this entity.

#18689 : Debriefing after Multidisciplinary Simulation**Authors:**

Catherine Holmes (1), Andrew Davies (1)

1. Emergency Department, Leeds General Infirmary, Leeds, UK

Keywords: Simulation, in-situ simulation, debrief, multidisciplinary, education

Abstract :**Background**

Simulation based education is a modern and increasingly utilised method of medical education with ongoing foci in multidisciplinary team (MDT) and in-situ simulation. Debriefing after simulation is well recognised to be a critical part of the learning process. Debriefing after multidisciplinary simulation presents its own challenges. We carried out a literature search aiming to find if there is any research done in this area which we can compare and augment with our own experiences in debriefing in-situ MDT simulation in the Emergency Department.

Methods

A search using “simulation’ AND ‘debriefing’ AND (multidisciplinary OR interdisciplinary OR inter-professional)’ was carried out on the PubMed database in November 2018. This found 187 results. All abstracts were read and 11 papers read in full by one author to decide if relevant for study. 8 relevant studies were found and recurrent themes were assessed for.

Results

Common themes in these studies include: the number of debriefers (no consensus found between 0-3); written prompts (appear to be valuable, particularly for novice debriefers); and the methods of debriefing (structured debriefing being favoured with ‘debriefing with good judgement’ framework used most frequently).

Discussion and Conclusion

Comparing and contrasting the results with our current practice found that further research is required on the optimal number of debriefers in MDT simulation. While there is no consensus found on the optimal number of debriefers for MDT simulation, on a local level we have found that having a debriefer from each involved specialty and discipline helps increase ‘buy in’ from participants. The downside of this is there can be an increase in debrief duration, which can be detrimental for our model of in-situ simulation as participants are staff working clinically on the day. Further discussion and research around this would be beneficial. We have multiple members of staff doing the debriefing with varying methods – from the research found, this potentially could be augmented with standardised use of a written debriefing framework. Use of something incorporating the ‘debriefing with good judgement’ framework would appear to have the most evidence to support it. Other important considerations of MDT debriefing identified from local practice is to find an appropriate environment and ensuring all team members of all professions and grades participating in the simulation are present and actively involved in the debrief. Empowering the most junior members early in the debrief can be quite powerful.

We recognise that the search was limited as only used one database and done by one person only. Current gaps in evidence include that there are no UK studies, only one in-situ study and most studies from a learner’s rather than the debriefer perspective.

There appears to be only a small volume of literature found in this literature search so further research and discussion is required on this topic. There is significant amount of UK ED in-situ MDT simulation and gathering evidence around maximally effective debriefing would seem to be a beneficial next step.

#18690 : Reason for consultation and emergency treatment of patients referred by a doctor of the first line: an experience of emergency department farhat hached tunisia

Authors:

mariem khrouf (1), mariem khaldi (1), ahmad Mahmoudi (1), Hajer SANDID (1), Amal Selmi (1), oussema acheche (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: patient referred emergency department

Abstract :**Introduction:**

Over time, emergency departments have seen their activity increasing with a growing number of consultations. There are no previous studies related to the number of users of emergency department oriented by a primary care physician.

The objective of this study is to identify the reasons for sending these patients and to analyze the adequacy of the requests as a function of the care given in the emergency department.

Methods:

This is a prospective descriptive study including hundred patients oriented by a primary care physician with a letter to the emergency department of FarhatHached hospital.

Results:

The mean age of patients was 48.34 +/- 20.68 with extremes of 15 to 95 years and with a female predominance. 48% of patients had no antecedent, for the rest: Diabetes and hypertension predominated with 26% and 18%, respectively.

In 51% of cases, it was a doctor practicing in a regional hospital, 28% were specialists. The most common reasons for consultation were fever, headache, and deterioration of the general health, note

that for surgical emergencies often the set of symptoms described by the patient does not correspond to what was pointed out on the letter. 18% of patients were admitted to a hospital ward.

Conclusion:

Analysis of this study's results revealed the lack of communication between emergency physicians and other primary care physicians which may adversely affect patient care .thus, more procedures such as discharge

summaries should be provided to fellow doctors by emergency staff in order to improve communication quality and as a result patients' follow-up care.

#18691 : Clinical and epidemiological aspects of the elderly affections in a tunisian emergency department: Farhat hached

Authors:

Hajer SANDID (1), mariem khrouf (1), ahmad Mahmoudi (1), Amal Selmi (1), imen Ketata (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: elderly patient emergency department

Abstract :**Introduction:**

Most developing countries are going through an epidemiological or health 'transition' similar to, and associated with, the demographic one. As a result, knowing emerging health problems and illnesses of an ageing population is crucial in order to optimize health strategies that can meet the needs of elderly patients.

Methods:

Describing clinical and epidemiological aspects of the elderly affections in the emergency department of a

Tunisian University Medical Center.

It's a prospective monocentric study conducted in the Emergency Department of the University Medical Center of Farhat Hached in Sousse during 6 months between 01 Mars 2018 and 31 august 2018.

Results:

We collected the data of 600 patients with a prevalence of 15.7%. Median age of the studied population was 73.81[65-95]. Sex ratio was 0.89. 2% of the patients had hypertension, 40.7% were diabetic, 10.3% had chronic heart failure, 15.8% had respiratory chronic failure. The most frequent clinical presentation were general symptoms(47.7%), dyspnea (19.5%), chest pain (12.5%), abdominal pain (18.5%) and neurological emergencies (1.8%). Mostly, ED elderly consultants were diagnosed with infectious diseases (49.8%), neurologic disorders(1.7%), metabolic disorders (20.3%), cardiovascular disorders (15.9 %), pulmonary affections (9,6%) and abdominal emergencies (2,7%). 0.5% of the patients studied died whereas 3.3 % (20 patients) were discharged against medical advice.

Conclusion:

In order to maintain optimal health in an ageing society such as ours, it has become crucial to create geriatric

wards to meet the increasing needs of elderly patients in which specialist geriatric teams would be capable of providing the appropriate care for them.

#18692 : Management of geriatric heart failure in the emergency department : a tunisian emergency department's experience**Authors:**

Hajer SANDID (1), mariem khrouf (1), ahmad Mahmoudi (1), Amal Selmi (1), imen Ketata (1), rafika ben ftima (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: heart failure geriatric emergency department

Abstract :**Introduction:**

Acute heart failure (AHF) is a very common cause of emergency department admissions especially for those over the age of 65. Because heart failure is a syndrome and not a disease, an underlying etiology must be sought and determined in order to guide therapy.

Methods:

We retrospectively reviewed data for 37 patients over the age of 65 who were admitted to the ED of Farhat Hached in Tunisia between March 2018 and May 2018 and who were diagnosed with acute heart failure.

The aim of this study was to determine the factors mostly related to acute heart failure in elderly patients, their management in the ED and their discharge destination.

Results:

During a 3-month follow up, 11.56% of Emergency department consultants were aged more than 65 years old with a maximum age of 95 years old. 48% of patients received non invasive ventilation, 18% received diuretics, 26% were treated with vasodilators (isosorbide dinitrate), 47% had echocardiography, 13.5% of patients were admitted to a cardiology ward while 66.5% of them were medically fit for discharge after a minimum ED length of stay of 4h30min and a maximum of 3 days. 20% of all patients died.

Conclusion:

Acute heart failure management is complicated by ageing, co-morbid conditions and cognitive impairment.

Therefore, in addition to hemodynamic and respiratory stabilization in the emergency department, an intrahospital multidisciplinary management is needed to improve elderly patients' adherence with complex heart failure medications and self-care regimens.

#18693 : Use of non invasive ventilation: experience of a tunisian emergency department**Authors:**

mariem khaldi (1), mariem khrouf (1), ahmad Mahmoudi (1), Hajer SANDID (1), hayfa snoussi (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: non invasive ventilation emergency department

Abstract :**Introduction:**

Non Invasive Ventilation (NIV) use in acute respiratory failure (ARF) is mostly initiated in Emergency

Department (ED) before patient transfer to Intensive Care Unit (ICU) or Respiratory Ward (RW). In Tunisia, because of the limited ICU beds' number and the absence of NIV in RW, patient requiring NIV are admitted in ED.

Aim: To describe our experience with non-invasive ventilation in emergency department (ED).

Methods:

A prospective observational monocentric study conducted for a six months period in the Emergency Department of the University Hospital FarhatHached, Sousse-Tunisia. We included patients consulting for non traumatic ARF requiring NIV.

We analyzed the NIV characteristics in the first 24 hours and evaluated patients 'outcomes. NIV success was defined as no need for endotracheal intubation (ETI).

Results:

During the study's period, we included 63 patients. During the first 24 hours of the studied population's ED

stay, 142 sessions were delivered with a mean duration of $9,47 \pm 3,38$ h. The median value of NIV initiating delay (defined by the time from the patients' registration until NIV initiation) was one hour [0-3h]. The first-line ventilating mode used was BiPAP in 55 patients (87.3%) with a mean IPAP $11,8 \pm 1,2$ cmH₂O , a mean EPAP of $4,49 \pm 1,07$ cmH₂O and a mean FiO₂ = $39,38 \pm 11,26$ %.

NIV failed in 8 patients (12.7%) with a median value of intubation delay about 4 h [0-14].

After a median ED length of stay of 40 h [24-53 h] and total NIV duration of 15 h [8-31 h], 26 patients (41,3%) were transferred to ICU, 21 to medical ward and 13 patients (20,6%) were discharged at home. The global mortality in our studied population was 4.8% (3 patients).

Conclusion:

Our results confirm the global efficacy of NIV in an ED setting. Therefore, young emergency physicians should be provided with protocols and guidelines for NIV practice.

#18694 : Benefits of simulation as a teaching tool in postgraduate education in emergency medicine "cardiac arrest scenario"

Authors:

mariem khrouf (1), Hajer SANDID (1), ahmad Mahmoudi (1), ensaf Missaoui (1), khouloud hamdi (1), Zied Mezgar (1), Mehdi Methamem (1)

1. emergency department farhat hached , Dr., sousse, TUNISIA

Keywords: simulation emergency teaching tool

Abstract :**Introduction:**

Simulation is a tool for improving the quality and safety of care, and its recognized as an essential method of evidence-based education. Emergency Medicine is a discipline in which there is a constant concern for the safety of patients. The emergency physician is often called upon to take charge of critical situations that use knowledge, know-how and knowledge as skills that must be mastered and whose theoretical learning alone is insufficient.

Methods:

It ' s a prospective study including residents in emergency medicine performing their specialty courses in emergency services and emergency medical assistance in the region of Sousse from January to June 2018. They were randomized into two groups: the one benefiting from a traditional education and the other from an education based on simulation sessions. The chosen scenario was the management of a cardiac arrest. A pretest and a post-test were performed in both groups.

Results:

We included 30 emergency residents who did not receive specialized training in the management of cardiac arrest, there was a female predominance with an average age of 27, there was no significant difference regarding the pretest between the two groups with 10.08 There was no significant difference with respect to the pre-test score between the two groups $10.08 \pm 2.7 / 20$ for the control group versus $10.34 \pm 3.3 / 20$ for the simulation group. There was a significant progression after the course with an average post-test score of 13.87 ± 1.8 in the simulation group while this score was 11.94 ± 2.3 in the control group with a statistically significant difference ($p < 0.001$).

Conclusion:

Simulation learning has led to a better acquisition of cognitive knowledge by learners. The simulation is not intended to replace bed-based teaching, nor theoretical or faculty teaching, but it is an essential complement . In Tunisia, the simulation must continue its current integration in the initial and continuous training of doctors.

#18695 : HOW TO AVOID THE OVERCROWDING IN EMERGENCY DEPARTMENTS

Authors:

Petrova Mariya (1), Tarraso Maria Luisa (2), Garcia Pedro (3), Manclus Luis (3), Cuenca Maria (4), Ruiz Jose Luis (3)

1. , Universidad Católica de Valencia, Valencia, SPAIN
2. Hospitalización a Domicilio- Unidad del Dolor, Hospital de La Ribera, Valencia, SPAIN
3. Emergency, Hospital de La Ribera, Valencia, SPAIN
4. Departamento de Investigación, Hospital de La Ribera, Valencia, SPAIN

Keywords: overcrowding. Emergency. Home Health Care

Abstract :

Objective: Analyze if hospitalization at home is a good alternative to traditional hospitalization models, to reduce the pressure of care and overcrowding in the emergency room.

Methods: This study consists of a systematic review, carried out between January and April 2019, which included systematic reviews, clinical trials and meta-analysis from 2010 to 2018, including referrals to the Home Hospitalization Unit (HHU). Seven articles were collected after meeting the inclusion criteria. The variables analyzed were the types of patients that could be subsidiary of admission to the HHU, the pathologies of admission from the Emergency Department in the HHU and assessment of the use made of said unit by the Hospital Emergency Services.

Results: On the one hand, 624 studies were identified in the Pubmed database, 482 were excluded, because they did not meet the inclusion criteria, of the 142 that remained, filters were applied and finally 4 Pubmed studies were chosen. On the other hand, 9 studies were identified in the SciELO database, of which 3 were excluded, the other 6 were filtered, and of these only 1 study was chosen for this study. In the last search process of Dialnet, 52 studies were identified, of these 16 were excluded and the other 36 were filtered and 2 studies were obtained that met the inclusion criteria. Finally, the 7 articles were compared with each other and with others to analyze the main objective of our study.

Conclusion:

- The elderly population with orthopedic pathology must be taken into account for admission in HHU
- The administration of intravenous medication in the necessary case is also a population which should be beneficial from the income in HHU
- There is a growing personal satisfaction and well-being of home admission compared to hospital admission

#18696 : HOW TO AVOID THE OVERCROWDING IN EMERGENCY DEPARTMENTS

Authors:

Garcia Pedro (1), Prieto Antonio (1), Ruiz Jose Luis (1), Tarraso Maria Luisa (2), Cuenca Maria (3), Manclus Luis (1)

1. Emergency, Hospital de La Ribera, Valencia, SPAIN
2. Hospitalización a Domicilio- Unidad del Dolor, Hospital de La Ribera, Valencia, SPAIN
3. Departamento de Investigación, Hospital de La Ribera, Valencia, SPAIN

Keywords: Emergency Department. Antibiotic. Treatment Change

Abstract :**INTRODUCTION**

The initiation of empirical antibiotic therapy in the emergency department can sometimes lead to change depending on several factors. Know characteristics of the patients and the pathology they present, can improve the use and therefore the pathology that presents

AIM

With our study, we evaluate whether antibiotics prescribed from the emergency room have a good indication or if they are not useful and should be replaced during hospitalization.

METODOGHY

We value all the income between January and February of 2019 to which an antibiotic was prescribed and it had been collected in the clinical history

RESULTS

We reviewed 200 stories of a total of 2613 income. In our sample there are no statistical differences between men and women, the average age was $69.42 \pm$ years. The most used antibiotics were levofloxacin, ceftriaxone and amoxicillin clavulanic with 22 %, 23% and 14%, respectively. The most frequent pathologies were respiratory, urological and abdominal with 46%,17% and 12%. At 48% some type of cultures was requested. In 41% the antibiotic was changed and at 6% the change was made twice. The percentage of changes more frequent was in respiratory , abdominal and urological pathology. On the other hand, those who have been changed for the second time have been respiratory and urological pathology, never changing in abdominal pathology. The antibiotics that were most frequently changed were levofloxaciono and ceftriaxone with 31 and 24% respectively, whereas when they are used in association. the change is not made at any time. By pathologies it is the respiratory and the urological ones that suffer the most with these changes. Finally, 58% of the patients who underwent the culture changed the antibiotic

CONCLUSIONS

- There are no differences between men and women when changing antibiotherapy
- The respiratory pathology is the one that most frequently involves a change of antibiotic therapy
- The association of antibiotics leads fewer changes of antibiotics
- More specific studies are needed to evaluate the empirical antibiotic according to the pathology.

#18697 : Island disaster burn victims – Physicians' confidence assessment in the first hours' treatment/management**Authors:**

Madalena Rosa (1), Irene Pereira (2)

1. General Surgery Department, Hospital da Horta, Horta, Azores, PORTUGAL
2. ReGEDiM, ReGEDiM, Brussels, BELGIUM

Keywords: Azores, burns, burn victims' management, disaster medicine, first hours management, islands, non-burn practitioners, physicians' confidence, remote region, self-assessment

Abstract :

Background: Mass casualties burn disasters are challenging anywhere in the world, but even more challenging if it occurs in isolated and disperse regions like in archipelagos. No study was found on physicians' confidence on the burn management in the first hours of a disaster event in remote islands, where transfer to a burn unit can take hours to even days. This study aimed to assess the Azorean physicians' confidence in the treatment/management of burn victims in the first hours after a disaster event, until transfer from the islands to a burn unit in mainland is possible.

Methods: This is a cross-sectional survey study, based on a questionnaire, conducted in the Azores between July 27th and August 12th, 2018. The questionnaire content validity and reliability were previously evaluated and a pre pilot test was conducted with 20 participations of the study population. Finally, an online questionnaire of 41 questions (SurveyMonkey[®]) was addressed to all the Azores physicians working in the emergency departments/rooms of the public health facilities of the archipelago, with exclusion of the plastic surgeons.

The data were analyzed on SPSS Version 25.0 (IBM Corp[®] Armonk NY, USA).

Results: About 260 physicians work in the emergency departments/rooms in the Azores. Hundred and fifty-three participants (58.8%) answered the questionnaire. The Azores Health Units lacks protocols on burn victims' treatment and transfer, and fail to adopt the National General Health Department Burn Clinical Orientation as reported by more than 70% of the participants. Forty-five and a half percent of the participants have never participated in any simulation exercises. The overall confidence of the Azores physicians on the treatment/management of burn victims in the first hours after an event is low. Of all participants, 67.6% are not confident on the treatment/management of such victims. Work place (hospital and primary health care unit), medical specialty, number of burn victims treated in the last two years and advanced life support course attendance influences positively the physicians' confidence. On the other hand, age and years of autonomous practice have no statistically significant influence in the physicians' confidence.

Conclusion: The absence of protocols associated with physicians' lack of confidence in the management of burn victims in the first hours of an event, is a major concern. Burn disaster preparedness, continuous medical education programs, simulation exercises should be held in every Health Unit of the Azorean islands, building physicians' confidence and minimizing island discrepancies in burn victims' outcomes.

This study was approved by the Hospital da Horta's Ethics Committee.

This study is part of a thesis submitted in partial fulfilment of the requirements for the degree of Master of Science in Disaster Medicine (European Master in Disaster Medicine).

Trial Registration / Funding Information (only) :

This study did not receive any funding.

#18699 : MMR immunisation status in a population of children attending paediatric emergency department**Authors:**

Marie-Claire Zammit (1), Marthese Galea (1), David Pace (2), Ruth Farrugia (1)

1. Department of Child and Adolescent Health, Mater Dei Hospital, Msida, MALTA

2. Department of Child and Adolescent Health, Malta, Msida, MALTA

Keywords: measles, MMR, immunisation

Abstract :**Background**

Measles is increasing, partly due to drops in immunisation levels. The immunisation rates for MMR vaccine in Malta have reached the recommended 95% threshold for both doses in 2018. However, rates may be lower in the older paediatric age groups.

The primary aim of this study was to provide a snapshot of measles immunisation rates across the paediatric age groups, possibly identifying the role of paediatric emergency department (PED) physicians regarding catch-up immunisations. The secondary aims were to check for rates of documentation of MMR vaccination in PED records and to assess reliability of parental recall for immunisations.

Methods

This was a retrospective observational study involving all children from 13 months up to 16 years of age who attended the PED at Mater Dei Hospital in Malta during a 1 week period in May 2019. Exclusion criteria were: age less than 13 months, failure to attend when called to PED, missing PED records, not seen by PED staff, repeat attendances and absent online immunisation records.

Demographic data, documentation of MMR immunisation doses and any chronic medical problems were obtained from the PED sheet. The MMR immunisation status for all patients was then checked with the online national immunisation database. The proportion of children who needed catch-up immunisation for MMR was analysed by age. The 2-sample z-test for sample proportion was used to test for any significant difference in immunisation rates.

For study purposes, full immunisation with MMR was based on the national immunisation schedule and defined as 1 or 2 doses in children from 13 months and up to 4 years old and 2 doses in children from 4 years of age onwards.

Results

There were 351 attendances to PED during the study period, with 142 exclusions as per criteria above. The majority of those with missing online records (25/33) were foreign patients. Of the remaining 209 patients, 59% were males and median age was 5.08 years (interquartile range 2.55, 9.88).

MMR immunisation was complete in 81% of patients (170/209). There was no significant difference when comparing patients aged between 13 months up to 4 years (median age 2.19 years, immunisation rate 74/85) to those aged 4 to 15 years (median age 9.08 years, immunisation rate 96/124), with $p = 0.07$, and when comparing immunisation rates in patients with chronic medical problems (39/47) to the remaining patients (131/162), with $p = 0.76$.

MMR immunisation status was documented in the patient's notes in 47.8% of cases ($n = 100$), with 65% ($n = 65$) verified with the child's immunisation book, 29% ($n = 29$) arising from parental recall and unspecified source for 6 patients. Accuracy of parental recall and immunisation books was similar, matching online records in 86.2% and 90.7% of cases respectively.

Discussion & Conclusions

The overall MMR immunisation rate in this patient cohort was 81%, well below the national rate of 95%. Therefore, emergency doctors may have a role to play in identifying children in need for catch-up immunisation for measles.

#18700 : Type of resolution that was necessary in patients whose clinical diagnosis is an arrhythmia in the estrahospital area in the Community of Madrid

Authors:

JUAN JOSÉ FERNÁNDEZ DOMINGUEZ (1), EVA HIDALGO GÓMEZ (1), MIRIAM UZURIAGA MARTÍN (1), LUCIA GONZÁLEZ TORRALBA (2), MARIA JESÚS DE MARCOS UBERO (2), OLGA MARTÍN OLALLA (2), MYRIAM GONZÁLEZ BAREA (2), JESÚS VALERIANO MARTÍNEZ (2)

1. MEDICINE, SUMMA112, MADRID, SPAIN
2. NURSERY, SUMMA112, MADRID, SPAIN

Keywords: Resolution, Arrhythmias, Summa112, Emergency

Abstract :

El Servicio de Emergencias Médicas de Madrid (SUMMA112) es el servicio de urgencias médicas ambulatorias del Ministerio de Salud de la Comunidad de Madrid. Su ámbito de competencias incluye hogares y emergencias laborales en la ciudad de Madrid y todas las emergencias en el resto de la Comunidad.

Teniendo en cuenta todo lo anterior, se decidió realizar un estudio descriptivo retrospectivo en el periodo específico del primer semestre de 2017 sobre la base de los registros clínicos de SUMMA112. Hubo 3752 registros clínicos con DAI 9 correspondientes a algún diagnóstico de algún tipo o arritmia. Se decidió explotar una muestra del 20%, que correspondía a una cifra de 750-800 registros médicos. Finalmente, se recopilieron datos de 827 historias clínicas, de las cuales 787 se consideraron válidas, una cifra que representa la N final de nuestro análisis. Este análisis tiene la intención de describir, de manera representativa por el tamaño de la muestra, qué tipo de resolución fue necesaria en pacientes que finalmente se diagnosticaron con una arritmia en la comunidad de la SUMMA112 y, en segundo lugar, la acreditación ante el Departamento de Documentación Clínica y Tecnología de la Información. , Para la revisión de historias y la explotación de los datos obtenidos. Los datos se recopilieron de un total de 787 registros clínicos con ICD 9 MC correspondiente a algún tipo de arritmia.

Nos interesa conocer la conclusión de la asistencia por parte de los profesionales de SUMMA112 y registrar el destino final de los pacientes con arritmias atendidas. Fueron dados de alta en el mismo lugar de atención (pendiente de evolución o como resolución in situ) 75 casos (9,52%), fueron trasladados a la sala de emergencias en soporte vital básico (BLS) 304 (38,62%) y en transporte sanitario (VIR). + SVB) 106 casos (13,6%). En 271 casos (34,43%) la transferencia a un hospital fue realizada por una UEM. En 16 casos (2,03%) el paciente realizó la transferencia por sus propios medios. La muerte del paciente ocurrió en lugar de atención ambulatoria en 2 casos (0,24%) y en 13 casos (1,65%) no fue posible Para verificar lo sucedido con el paciente.

Para finalizar el análisis de los resultados, quisimos reflejar la proporción o los recursos asignados por médicos desnudos del Centro de Coordinación de Emergencias de SUMMA112 para la asistencia de pacientes con algún diagnóstico final de arritmias. UME atendió 412 casos (52.35%), 213 casos (27.06%) por VIR y en 162 casos (21%) el recurso asignado fue una UAD.

#18701 : Audit on the management of spontaneous and traumatic pneumothorax in the emergency department**Authors:**

Lucy Bishop (1), Kelly Kwok (1), Monica Wallace (2), Christopher Dale (2)

1. , Miss, Glasgow, UK

2. , Dr, Glasgow, UK

Keywords: Pneumothorax, spontaneous, traumatic, emergency, department, ED, management, BTS, guidelines

Abstract :**Introduction:**

We aimed to identify current practice in the management of both spontaneous and traumatic pneumothoraces in the Emergency Departments (EDs) of the Royal Alexandra Hospital (RAH) and Inverclyde Royal Hospital (IRH) and to compare whether current practice is in-line with available guidelines.

Methods:

Trakcare was used to identify patients diagnosed with pneumothoraces across both sites in 2018. Individual patient data was obtained retrospectively using clinical portal to ascertain the management received in ED. We compared management of spontaneous pneumothorax against BTS guidelines.

We also examined if referrals for follow up had been made and the time frame in which follow up occurred.

Results:

The results showed that in 83% of cases of spontaneous pneumothorax the BTS guidelines had been followed.

In 69% of cases follow up was arranged, either for a further x-ray, or for an appointment with the respiratory team.

There are no specific guidelines on management of traumatic pneumothoraces. In the majority of cases they were managed with a chest drain. Patients who presented with a traumatic pneumothorax were investigated with either chest x-ray, CT scan or both.

56% received prophylactic antibiotics before having a chest drain inserted.

Conclusion:

The conclusions we have drawn from these results are that there is room for improvement in the follow up of patients after spontaneous pneumothorax and in prescribing prophylactic antibiotics to patients with traumatic pneumothorax.

It may be beneficial to develop local guidelines on treating patients who present with a traumatic pneumothorax.

#18702 : Second Cycle of the audit of Emergency Department Vascular Lab referral form for query DVT**Authors:**

Miqdad Raza Lakhanie (1), Muhammad Ajaz Waheed (2), Alison Hay (2), Brian McNicholl (2)

1. , University Hospital Galway, Barna, IRELAND

2. , University Hospital Galway, Galway, IRELAND

Keywords: DVT, Audit, Vascular lab, Deep venous thrombosis

Abstract :

Background:

Referral forms that are used to request doppler scan for query DVT were audited which pointed out that 45 percent forms were available along with the scanned emergency department notes. Amongst the forms that were available, over half of them lacked vital information like the clinical reason, the site of the requested exam and Well's score or D-Dimer mentioned on them. Thus it was decided to address the problem and discuss the problems in the current form and to improve on it.

Method:

A survey was conducted amongst the doctors which aimed to identify the problems they face with the current form. The survey consisted of closed ended questions pertaining to the present form being user friendly, if there was need to add well's scoring system on it, if there was a need to have tick boxes to identify the site of the examination requested, if there was a need for a new form and an open ended question at the end to gather suggestions regarding the same. A verbal discussion was also carried out with the staff at the vascular lab and their input and suggestions were also taken into consideration. Based on this, a new form was designed with the input of the Consultants that was more user friendly and included Well's score along with boxes for D-Dimer score and a flow chart of the DVT pathway followed at the Emergency department of the University Hospital Galway. Educational session about the same is aimed to be regularly undertaken to improve the efficacy of the referral forms.

Results:

The preliminary results show improved documentation and retention of the forms in the scanned notes and we hope to improve on the results found in the first leg of the audit.

Discussion:

Emergency departments around the world see a number of patients with query DVT and Galway is no exception to it. An efficient DVT pathway would not only help to improve patient management and would be beneficial to address delays. Referral forms to the vascular lab are an integral part of the pathway and clear documentation would not only help our colleagues at the vascular lab but would also help to review the notes of any such patients at a later stage.

Trial Registration / Funding Information (only) :

This study did not receive any specific funding

#18703 : Hypoprotidemia in a medical intensive care unit patients : A friend or a foe ?**Authors:**

Ezzouine Hanane (1), imane madihi (2)

1. medical intensive care unit-university teaching hospital Ibn Rushd, Faculty of medicine and pharmacy -University Hassan II , casablanca, MOROCCO
2. MEDICAL INTENSIVE CARE UNIT, FACULTY OF MEDICINE AND PHARMACY-UNIVERSITY HASSAN II-CASABLANCA-MOROCCO, CASABLANCA, MOROCCO

Keywords: hypoprotidemia;medical intensive care; prognosis; mortality

Abstract :

Introduction

Hypoprotidemia is a common disorder in medical practice .In intensive care,it is associated to prognosis.The objective of this study is to evaluate the clinical characteristics , therapeutic modalities and the prognostic factors of patients who had hypoprotidemia during their stay in a medical intensive care unit.

Patients and methods

We conducted a retrospective study in the medical intensive care unit of the university teaching hospital Ibn Rushd of Casablanca in Morocco over one year from January 2017 to December 2017 .It included all the patients who presented hypoprotidemia during their stay in our unit.We collected data about their epidemiological and clinical characteristics and also analyzed the parameters associated to prognosis and mortality.

Results

The incidence of hypoprotidemia was 30.21%.The average age of the patients was 39+/- 17.40 years old and the sex ratio male /female was at 1.07.Neurological diseases were the main reason for hospitalization 37.95% .The mean value of the severity scores was for APACHE II 11.49+/-7.01 ; SAPS II 24.39+ /- 13.4 and SOFA 5.27+/- 4.

The average protidemia was at 56.27+/-9.78 g/ l at admission ;95.4% of patients had early hypoprotidemia before the fifth day and 100% had hypoalbuminemia.

54%of patients were intubated-ventilated ,39% received vasoactive drugs ,33% had blood transfusion and 20% received albumin.90% received antibiotics ;40% had corticosteroids and 18% had diuretics

The evolution was favorable in 28% of the cases .28% of the patients had infection, 10% developed septic shock and 11.5% developed acute renal failure .The mortality was at 46%.

The prognostic factors identified were the severity of hypoalbuminemia, the occurrence of nosocomial infection or acute renal failure.

Conclusion :

Hypoprotidemia is a prognostic factor of many chronic diseases and is associated with a high risk of complications occurring in patients hospitalized in intensive care .In our study we had mostly early hypoprotidemia before the fifth day of hospitalization and the parameters associated with excess mortality are the severity of hypoalbuminemia ,the occurrence of nosocomial infection and acute renal failure.

#18706 : Impact of implementing a basic cardiopulmonary resuscitation workshop to the nursing staff in Alexandria University Hospitals on improving the medical service.

Authors:

Asmaa Alkafafy (1), Mahmoud Abdelaziz (2), Asmaa Ramadan (3), Mostafa Yousri (2), Peter Basta (2)

1. , Emergency department, faculty of medicine Alexandria university, Alexandria, EGYPT
2. , Faculty of medicine, Alexandria University, Alexandria , EGYPT
3. , Emergency Department Faculty of medicine Alexandria University , Alexandria, EGYPT

Keywords: Nurses, resuscitation, saving lives, simulation based learning

Abstract :

Background: Nurses are cornerstone in providing efficient and timely medical service, not only in the emergency department, but everywhere in the hospital.

Methods: A project was planned by a team of physicians from Alexandria emergency medicine department to run weekly workshops to train nurses all over the university hospitals on basic life support including nurses working in clinics, operation rooms and wards. Detecting red flags for a deteriorating patient, confirming cardiac arrest, and initiating chest compressions in adults and pediatrics were the main aim of our workshop and also how to manage choking in adults and pediatrics was also included. A pre and post tests were done for each candidate. The course was one day and included 4 stations one for adult CPR, one for Pediatric CPR, one for basic airway management and one for choking. The course was totally "Hands on", simulation based, with a single short lecture to wrap up all information. All instructors volunteered their payment and the course was done totally free of any charges. Manikins were available in our Faculty skills lab.

Results: Around 300 candidates were included over a period of 6 months. 45 % only passed the pretest, around 90% passed the post test. Failure included mainly the nurses working in dermatology wards and in clinics as they rarely face unstable patients. Pediatric station was tough for all nurses except those who work in pediatric intensive care units and wards. Failures had to register once more for the course. Many nurses reported improvement in the medical service provided to their patients in different areas in the hospital after the course, as they say, they were blinded to so many issues regarding deteriorating patients that was uncovered through the course, also they noticed that saving lives can be done through simple interventions as long as they are alert to the red flags for deterioration. Moreover, they were able to save lives in hospital and out of hospital.

Conclusion: Implementing training and teaching programs for nurses is as vital as building up the learning curve for physicians. Because emergency medicine is the specialty devoted to "Saving Lives", dispersing the knowledge of how to save a life, not only to physicians but also to nurses, paramedics and even the public is a main role of all emergency physicians.

#18711 : Interactive effect of multi-tier response and advanced airway on good neurological recovery after out-of-hospital cardiac arrest**Authors:**

Hyouk Jae Lim (1), Joo Jeong (2), Kihong Kim (1), Jungeun Kim (1), Young Sun Ro (1), Sang Do Shin (1)

1. , Seoul National University Hospital, Seoul, KOREA

2. , Seoul National University Bundang Hospital, Seoul, KOREA

Keywords: out-of-hospital cardiac arrest, advanced airway, multi-tier response

Abstract :

OBJECTIVES: High-quality CPR including early defibrillation, uninterrupted chest compression and optimal airway management are primary components associated with return of spontaneous circulation (ROSC) and preventing neurological impairment. We hypothesized that the multi-tier response will provide higher quality of CPR including airway management, but the type of combination will make different interaction to the airway management for outcomes after OHCA. The aim of this study was to determine the effect of advanced airway management method on outcomes and compare the effect size across the multi-tier response type on outcomes after OHCA.

METHODS: This study was a retrospective and observational cohort study utilizing the Korea OHCA Registry (KOHCAR), which included all adult EMS-assessed OHCA patients with presumed cardiac etiology. The study period was from January 2015 to December 2017. Airway management methods were categorized into the endotracheal intubation (ETI) group and supraglottic airway (SGA) group. Tier system were divided into single-tier response and two types of multi-tier response (MTR) including an ambulance-ambulance multi-tier response (ATR) and an ambulance fire engine multi-tier response (FTR). Unadjusted and adjusted odds ratios (ORs) with 95% confidence intervals (CIs) were calculated to show the association between airway management/tier type and patients with ROSC rate, survival to discharge rate and neurological outcomes. Multivariable logistic regression analysis performed to assess the interaction effects of airway management method and tier type.

RESULTS: Among 87,551 EMS-assessed OHCA during the study period, a total of 25,888 patients were analyzed. In comparison of single-tier response and MTR type, ATR was significantly associated with higher ROSC rate, survival to discharge and neurologic outcomes than single-tier response. However, there was no significance difference between FTR and single-tier response. Interaction analysis shows that regardless of tier type, SGA was significantly lower ROSC rate than ETI.

CONCLUSION: In this nationwide observational cohort study, we observed that ATR provide good clinical outcomes than single-tier response or FTR. And regardless of tier system, SGA showed significantly lower ROSC rate than ETI. The indeterminate evidence of optimum airway management and tier type for OHCA has encouraged calls for randomized controlled trials to clarify precise circumstances, patients' conditions and characteristic of the EMS system and survival outcomes.

#18712 : Improving the management of infants with bronchiolitis: a cluster randomised controlled trial of tailored knowledge translation in paediatric acute care.**Authors:**

Libby Haskell (1), Franz E Babl (2), Emma Tavender (3), Catherine Wilson (3), Sharon O'Brien (4), Meredith L Borland (4), Elizabeth Cotterell (5), Rachel Schembri (6), Nicolette Sheridan (7), David Johnson (8), Ed Oakley (2), Stuart R Dalziel (9)

1. Children's Emergency Department, Starship Children's Hospital, Auckland District Health Board, Auckland, NEW ZEALAND
2. Emergency Department, The Royal Children's Hospital, Melbourne, AUSTRALIA
3. Emergency Research, Murdoch Children's Research Institute, Melbourne, AUSTRALIA
4. Emergency Department, Perth Children's Hospital, Perth, AUSTRALIA
5. School of Rural Medicine, University of New South Wales, Armidale, AUSTRALIA
6. Clinical Epidemiology and Biostatistics, Murdoch Children's Research Institute, Melbourne, AUSTRALIA
7. College of Health, Massey University, Auckland, NEW ZEALAND
8. Cumming School of Medicine, University of Calgary, Calgary, CANADA
9. Emergency Department, Starship Children's Hospital, Auckland District Health Board, Auckland, NEW ZEALAND

Keywords: bronchiolitis, acute care, emergency department, knowledge translation, evidence-based practice

Abstract :**Background and objectives**

Bronchiolitis is the most common reason for infants to be hospitalised following presentation to emergency departments (EDs). Management is supportive with high-level evidence of no efficacy for salbutamol, glucocorticoids, chest x-rays, antibiotics, or adrenaline. Despite all international guidelines recommending against the use of these therapies, significant practice variation exists, with the use of inappropriate therapy a worldwide problem. Knowledge translation (KT) interventions that are tailored to the factors that influence practice can improve care; however there is little high-level evidence in acute paediatrics. The primary objective was to establish whether tailored, theory informed KT interventions, compared to passive guideline dissemination, reduces the use of salbutamol, glucocorticoids, chest x-rays, antibiotics, and adrenaline, in infants <1 year of age with bronchiolitis.

Methods

Tailored KT interventions were developed, following qualitative interviews using the Theoretical Domains Framework, to target key identified factors influencing bronchiolitis management. We then compared the tailored KT interventions versus passive dissemination in a cluster randomised controlled trial of 26 hospitals in Australia and New Zealand during the 2017 Australasian bronchiolitis season. The primary outcome was compliance with the Australasian Bronchiolitis Guideline during the acute care period (first 24 hours of care) with no use of salbutamol, glucocorticoids, chest x-rays, antibiotics, or adrenaline. Secondary outcomes included compliance in ED, compliance in in-patients, compliance during total hospitalisation, compliance for individual therapies and length of stay. Analysis was by intention-to-treat using Generalised Linear Mixed Models.

Results

Baseline data was collected on 8,045 infants from all 26 sites for 3 years prior to the intervention year (2014-16 bronchiolitis seasons). There were no major differences between the intervention and control sites. Data was collected on 3,727 infants for the intervention year (2017). Compliance with the Australasian Bronchiolitis Guideline for the acute care period was 85.1% (95%CI 82.6-89.7%) in the intervention sites and 73.0% (95%CI 65.3-78.8%) in the control sites, risk difference 14.1% (95%CI 6.5-21.7%), $p < 0.001$. Compliance while in ED was 87.2% in the intervention sites and 78.8% in the control sites, risk difference 10.8% (95%CI 4.1-17.4%), $p = 0.002$. Compliance in in-patients was 90.5% in the intervention sites and 83.0% in the control sites, risk difference 8.5% (95%CI 2.7-14.3%), $p = 0.004$. Compliance during total hospitalisation was 82.2% in the intervention sites and 69.9% in the control sites, risk difference 14.4% (95%CI 6.2-22.6%), $p < 0.001$. Median length of stay was 0.5 days in the intervention sites and 0.5 days in the control sites, incident rate ratio 0.9 (95%CI 0.7-1.2), $p = 0.67$.

Conclusions

The use of tailored KT interventions substantially reduces the use of inappropriate therapies in the management of infants with bronchiolitis. As bronchiolitis is the most common reason for infants to be admitted to hospital this study has important implications for future management of bronchiolitis and worldwide for KT for paediatric presentations to EDs.

Trial Registration / Funding Information (only) :

The trial is registered in the Australian and New Zealand Clinical Trials Registry (ACTRN12616001567415). Supported by a National Health and Medical Research Council Centre of Research Excellence grant for Paediatric Emergency Medicine (GNT1058560), Australia and the Health Research

#18714 : Side effects and complications of non-invasive ventilation in patients admitted to emergency department with acute respiratory failure

Authors:

Raja Fadhel (1), Ines Chermiti (2), Emna Ennouri (1), Hanène Ghazali (1), Sana Tabib (1), Rania Zammouri (1), Monia Ngach (1), Mahboub Chkir (1), Sami Souissi (1)

1. Emergency department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA
2. Emergency department, Regional hospital of Ben Arous, Ben Arous, TUNISIA

Keywords: non-invasive ventilation, acute respiratory failure, side effects, complications

Abstract :

Background: The use of Non-Invasive Ventilation (NIV) for acute respiratory failure has increased during the past few decades in emergency department (ED) and has become widespread considering its various benefits (reducing the need for mechanical ventilation, improving survival rate). On the other hand, with the newfound beneficial treatments come complications and side effects. are reported but few studies were published.

The aim of our study was to assess the side effects and complications when using NIV in patients admitted to ED with acute respiratory failure

Methods: prospective observational study over a seven month period. Inclusion of all consecutive patients admitted to ED with acute respiratory failure requiring NIV (CPAP or Bi-PAP mode). Considered indications were acute exacerbation (AE) of chronic obstructive pulmonary disease (COPD), acute heart failure with pulmonary oedema or other indication). We didn't include patients requiring NIV as a pre-oxygenation prior to intubation. A local protocol to perform NIV was followed. Demographics and clinical data were collected. Side effects and complications appearing during the NIV procedure were reported.

Results: Inclusion of 239 patients. Mean age 68 ± 13 . Sex ratio=1,6. Comorbidities n(%) : COPD 81(34), hypertension 139(58), diabetes 113(47), chronic heart disease 54(23), coronary heart disease 68(28,5). Indication of NIV n(%) : AE COPD 59(25), acute pulmonary oedema 167(70).

CPAP was used in 172 patients (72%). CPAP complications and side effects (%): mouth dryness (34),tearing (18), face erythema (30), face pain and headache (26), skin erosion(9), nausea (7), vomiting (3), hypotension (2), rhinorrhea (2), abdominal pain(1). Success was obtained in 154 patients (89%). Bi-PAP NIV was required in 13 patients after CPAP failure. Invasive ventilation was performed in only four patients.

First line Bi-PAP ventilation was used in 67 (28). Bi-PAP complications and side effects (%): mouth dryness (28), face erythema (21), skin erosion (17), facial pain and headache (14), tearing (10), hypotension (4), rhinorrhea (4). Success was obtained in 83% of patients. Eleven patients was intubated.

Median hospital length stay was 28 hours [1-450]. Overall in-hospital mortality rate was 5,4%.

Conclusions: side effects were generally not severe but require the optimization of interfaces, use of humidifier or adequate positioning of patients. No infectious complications were reported. Severe side effects such as hypotension appear in less than 4% of patients. Trained both emergency physicians and paramedics is the key to reduce these complications.

#18715 : Blood eosinophil count : biomarker predictor of outcomes in patients admitted to emergency department with acute exacerbation of chronic obstructive pulmonary disease**Authors:**

Fatma Mejri (1), Ines Chermiti (2), Rania Zammouri (1), Sirine Keskes (1), Amel Ben Garfa (1), Mahbouba Chkir (1), Sami Souissi (1), Hanène Ghazali (1)

1. Emergency department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA
2. Emergency department, Regional hospital of Ben Arous, Ben Arous, TUNISIA

Keywords: Blood eosinophil count, chronic obstructive pulmonary disease, acute exacerbation, outcomes

Abstract :

Introduction:

Chronic obstructive pulmonary disease (COPD) results in irreversible decline in lung function which results in high rate of emergency department (ED) visits, hospitalizations and high number of readmission. So here comes the need of identification poor outcomes predictors.

The impact of high blood eosinophil count (HBEC) at admission for COPD exacerbation on posthospitalization outcomes is still unclear.

Objective: The aim of our study was to assess outcomes in HBEC patients admitted to ED with COPD acute exacerbation comparing with non HBEC patients.

Methods: A prospective observational study was conducted over five months. Inclusion of patients hospitalized in ED for COPD exacerbations at index visit. Comparison of two groups: group 1: patients with HBEC and group 2: patients without HBEC. HBEC was defined as $BEC \geq 200$ cells/ μ L and/or $\geq 2\%$ of the total white blood cells. Follow-up over one and three months.

Results: Inclusion of 135 patients. Mean age 67 +/- 11 years. Sex-ratio 3.35.

Forty one patients had HBEC (30%). Comparative analysis of outcomes [group1 n(%) vs group2 n(%) ; p]: medical history of hospitalization for COPD exacerbation [14(34) vs 50 (53); 0.315], in-hospital mortality [0 vs 2;0.14], COPD exacerbation at day seven [3(7) vs 8(8); 0.285], COPD exacerbation at one month [5(7) vs 14(12), 0.136]; COPD exacerbation at three months 11(27) vs 11(12), 0.08]; readmission after one month [0 vs (6); 0.027], readmission after three months [3(7) vs 5(5), 0.786], mortality after three months [1(2) vs 1(1); 0.65].

Conclusions: HBEC patients seem to have better outcomes after one month of index hospitalization. Other studies are needed to better evaluate the impact of HBEC in COPD exacerbation.

#18718 : Usefulness of the initial diagnostic point-of-care ultrasonography urinary stone protocol for emergency department patients with acute renal colic: a randomized controlled study**Authors:**

Seok Goo Kim (1), Ik Joon Jo (2), Hee Yoon (2)

1. Emergency Medicine, Samsung Medical Center, Seoul, KOREA
2. Emergency medicine, Samsung Medical Center, Seoul, KOREA

Keywords: ultrasonography, length of stay, emergency department, cost, ureterolithiasis

Abstract :

Background Detection of hydronephrosis by ultrasonography in patients with renal colic has good sensitivity and specificity for diagnosing ureter stones. This study investigated the effects of length of stay and total medical expense on patients with urolithiasis by applying the point-of-care ultrasonography urinary stone (POCUS-US) protocol in the emergency department (ED).

Methods We conducted a prospective randomized controlled trial for evaluating patients who visited the ED of the tertiary university hospital with acute renal colic between March and May 2019. The patients were separately enrolled according to day number of visitation in the ED. For those with odd day numbers (conventional group [CG]), we performed basic laboratory blood tests, urine analyses after history taking and physical examination, and additional tests, such as abdominal non-contrast computerized tomography (CT) based on the test results. For those with even day numbers (ultrasonography group [UG]), we performed bedside sonography simultaneously with physical examination and history taking to evaluate hydronephrosis. If hydronephrosis was detected, we proceeded to perform abdominal non-contrast CT promptly and laboratory tests, including only urine and creatinine blood level analyses. If patients in the UG did not have hydronephrosis, we examined them as we did the other patients in the CG. The patients were followed-up for acute renal failure and urinary tract infection and acutely missed or delayed high-risk diagnosis within 30 days. We investigated the ED length of stay and total medical costs as outcomes.

Results Ninety-one patients were enrolled, of which 72 were finally diagnosed as having ureter stones. The ED length of stay for the UG was 156 minutes (95% confidence interval [CI], 137–176 minutes) and was 78 minutes lesser than that for the CG (234 minutes; 95% CI, 210–259 minutes). The medical expense for the UG in the ED was approximately 30% lower than that for the CG (239 USD vs. 332 USD, respectively; $P < 0.001$). The incidence of complications within 30 days and acutely missed or delayed high-risk diagnosis were not significantly different between the two groups.

Conclusion Therefore, applying the initial diagnostic POCUS-US protocol for patients with acute renal colic in the ED can significantly reduce the ED length of stay and medical expense.

#18719 : Better output of discharged patient with head trauma. Are new guidelines needed for Sibiu hospital?

Authors:

Marius Smarandoiu (1), Alina Adriana Panga (2), Dan Mircea Stanila (2), Adriana Stanila (2), Dania Lunca (1)

1. SMURD, SMURD Sibiu, Sibiu, ROMANIA
2. Ophthalmology, Department of Ophthalmology, Emergency Clinical Hospital Sibiu, Sibiu, ROMANIA

Abstract :**BACKGROUND**

Today, the modern society is characterized by bustle and many activities that put people at trauma risk. Work, travel and leisure activities expose people to greater risk for head trauma. Sometimes they are minor but is not always like that. Early recognition of these symptoms improves decisions and patient status, as such conditions deteriorates fast.

The aim of this study is to evaluate the clinical profile of multidisciplinary head trauma complications in patients hospitalized and managed in Sibiu.

METHODS

Data for this retrospective study is Sibiu Emergency Hospital database, for a period of 4 years. A selection of all head injuries cases is done to analyze the medical issues associated and the first important maneuvers to asses this injury to prevent them. We follow the route of the case through different departments up to hospital release day.

RESULTS

Surgical, neurological, facial and visual complications occur in most of the cases with a greater degree in incidence in males. The most complicated head trauma cases are found in work accidents, road accidents, fights and other types of trauma. Pedestrians are more exposed than persons inside the cars with high degree of complication status.

CONCLUSIONS:

Head trauma is still one of the most frequent cause of complex impairment on different systems and for a life-long disability. Complications and bad output can be prevented or reduced implementing a prioritized trauma guideline for all head injury patients in the first stages of advanced medical care. Our study highlights the need and the first measures for such a protocol to be designed and implemented in Sibiu Hospital to reduce these cases.

#18721 : Risk Factors and its Contribution to Stroke Subtypes**Authors:**

Gheorghe Ciobanu (1)

1. State University of Medicine and Pharmacy , Emergency Department , Chisinau , MOLDOVA, REPUBLIC OF

Keywords: Hemorrhagic Stroke, Ischemic Stroke, Risk Factors, Modifiable Risk Factors, Hypertension, Diabetes, Family History of Stroke.

Abstract :

Background: Stroke is one of the leading causes of morbidity and mortality, accounting for 11.13% of total deaths worldwide(1) In Republic of Moldova stroke is the third leading cause of death (159,1: 100000). In 2017 were registered 8679 new cases of stroke. Prevalence of cerebrovascular diseases is 274.8:10 000 and incidence is 30.3 per 10 000 populations. The 2009 INTERSTROKE study in 22 low- and middle-income countries confirmed that hypertension, current smoking, diabetes, abdominal obesity, poor diet and physical inactivity accounted for more than 80% of the global risk of all types of stroke.

This study was conducted to investigate the prevalence of stroke risk factors and their distribution based on stroke subtypes in population of the Republic of Moldova.

Materials and Methods: A retrospective hospital-based study was conducted at EMI in Chişinău. All medical records with a diagnosis of stroke were identified based on the ICD,R10, from November 20,2017 to November 20,2018. Out of 426 admitted stroke patients were analyzed retrospectively for incidence of modifiable risk factors in our population.

Results: Out of 426 patients 232 (54.4%) were male and 194(45.6%) were female, the mean age of the patients was 59.8 ± 17.4 years and the mean age at the time of stroke was 58.4 ± 15.9 years. Analysis of demographic attributes over this dataset showed that the incidence of different risk factors in ischemic stroke (IS) were as follows: 42.6% hypertension, 32.7% smoking, 32.2% alcohol intake, 24.8% diabetes mellitus, 22.6% coronary artery disease, 18.6% dyslipidemia, 16.6 % dysrhythmia, 13.4% previous stroke, 10% inactivity ,8.8% transient ischemic stroke in the past. Major risk factors in hemorrhagic stroke (HS) were: 57.0% hypertension, 39.3% smoking, 36 alcohol intake, 26.8% coronary artery disease, 26.3% dyslipidemia, 21,2% obesity, 26.3% dysrhythmia, 20% diabetes mellitus, 19.8 % inactivity.

Conclusion: This study showed that all most common risk factors leading to stroke are modifiable risk factors. Hypertension, smoking, alcohol intake, diabetes mellitus, coronary artery disease, dyslipidemia, was amongst leading risk factors for both HS and IS in stroke population of the Republic of Moldova. Thus, identifying risk factors of stroke can help healthcare providers to establish prevention strategies.

#18722 : The course of the illness as an essential factor to consider in predicting sepsis-associated mortality using biomarkers and symptoms for patients visiting the emergency departments: a hospital-based cohort study**Authors:**

Kuan-Fu Chen (1), Chia-Yu Chao (2)

1. Assistant Professor, Chang Gung University, Taoyuan, TAIWAN

2. , Chang Gung Memorial Hospital, Taoyuan, TAIWAN

Keywords: sepsis, biomarker, mortality, predict, angipoietin-2, pentraxin 3, sTREM-1, ICAM-1, VCAM-1, sCD14 and sCD163, E-selectin, P-selectin, TNF-alpha, INF-gamma, CD64, IL-6, IL-8, IL-10

Abstract :

Background:

Sepsis is a disorder that commonly encountered in the emergency department (ED) with high morbidity and mortality worldwide. Conventional investigations of biomarkers for sepsis were limited to the time patients diagnosed with sepsis. However, sepsis is a dynamic illness that could manifest differently from time to time. Previously, researchers either focused on specific biomarkers for the longitudinal change, or comparison of different biomarkers at a single time point.

Methods:

We conducted a prospective hospital-based cohort study in two EDs in the tertiary hospitals in Northern Taiwan with patients with documented infectious diseases during the initial 24 hours between 2012 and 2018. We evaluated the performance of 15 novel biomarkers along with some conventional biomarkers and the symptoms and signs in prognosticating outcome for patients with suspected sepsis in ED. We applied the multiplex platform of Bio-Plex Pro™ Assays to evaluate 15 novel biomarkers: angipoietin-2, pentraxin 3, sTREM-1, ICAM-1, VCAM-1, sCD14 and 163, E- and P-selectin, TNF-alpha, INF-gamma, CD64, IL-6, 8, and 10. Besides, we assessed several conventional markers including albumin, lactate, D-dimer, C-reactive protein, procalcitonin, liver function, renal function, electrolytes, and coagulation profile. Time of symptom onset and other symptoms and signs were collected prospectively by dedicated research coordinators. Sepsis-associated mortality was defined by chart review to include cases developed inpatient mortality developed related to the initial infectious insult. Logistic regression and odds ratios were used to evaluate the association between the standardized level of biomarkers and mortality. Trend-tests were performed to evaluate the temporal trend of these biomarkers.

Results:

A total of 1478 patients were enrolled, among them 882 were male (59.68%), 675 were older than 65 years of age (45.67%), 1155 had SIRS (78.15%), 912 had severe sepsis (or Sepsis 3.0, 61.71%), and 466 had septic shock (31.53%) with a mortality rate of 9.2%. The median day after symptoms onset was 2 (IQR: 1 – 4). We found the trend that an early elevated level of VCAM-1, INF-gamma and CD64 and the late elevated level of lactate, uric acid, RBC count and AST were associated with mortality. We also found a decreased level of albumin, calcium, C3, and protein C, red blood cell, platelet, and eosinophil count were constantly associated with mortality. Furthermore, symptoms of chills and fever were constantly associated with survivorship. The most important biomarkers identified were day-4-5 p-selectin (OR: 3.25, 95% C.I. 1.04-10.2, p=0.043) and albumin (OR: 0.26, 95% C.I. 0.14-0.49, p<0.001)

Conclusion:

In this prospective hospital-based cohort study, we found that the course of illness could be an important factor while evaluating the associations between some biomarkers and outcome of patients with suspected sepsis.

Trial Registration / Funding Information (only) :

The study was supported by the Ministry of Science and Technology and Chang Gung Memorial Hospital in Taiwan Chang Gung Memorial Hospital (107-2314-B-182-052-MY2, 106-2314-B-182-028, CMRPG2H0311, CMRPG2H0321). The funder has no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

#18723 : Is being “competent” enough? Emergency department registered nurses’ disaster preparedness as assessed using Benner’s model of clinical competence.

Authors:

Jason Murphy (1), Sofia Magnusson (2), Tove Ringqvist (3), Monica Rådestad (4), Lisa Kurland (5), Anders Rüter (6)

1. PhD Student, Department of clinical research and education. Karolinska Institutet; Sophiahemmet University, Stockholm, SWEDEN
2. , Södersjukhuset, Stockholm, SWEDEN
3. , Södersjukhuset, Stockholm, SWEDEN
4. PhD , Department of clinical research and education. Karolinska Institutet., Stockholm, SWEDEN
5. Professor, Örebro University, Örebro, SWEDEN
6. Associate Professor, Department of clinical research and education. Karolinska Institutet; Sophiahemmet University, Stockholm, SWEDEN

Keywords: Disaster nursing, competency, emergency department, disaster preparedness

Abstract :**BACKGROUND**

Major incidents (MI) occur with little or no warning. During an MI emergency department (ED) registered nurses (RN) are among the first to receive, assess and treat patients. Emergency department RNs’ emergency operating plan (EOP) competencies are crucial in effectively mitigating somatic and psychological afflictions that patients may present to the ED. While previous research has indicated the ED nurses’ disaster competencies are low, little is known about the current state of emergency department registered nurses’ EOP competencies in Sweden.

AIM

To assess emergency department registered nurses’ EOP competencies.

METHOD

Study design: A cross sectional online survey was conducted during a six-week period between January and February 2019. Purposive criterion sampling method was utilized in recruiting participants.

Participants: All registered nurses’ ($n \approx 370$) employed at six participating emergency departments in the region of Stockholm, Sweden were included.

A total of 100 questionnaires were completed (response rate = 28%). Competencies were rated utilizing a five-point Likert scale based on Benner’s competence model of clinical competence.

The primary outcome variables are five competencies concerning ED EOPs. 1. Content of the EOP 2. Areas of responsibilities. 3. Differences between decision making processes in the Incident Command System for a major incident vs. non-emergency situations. 4. Hospital levels of preparedness and its significance. 5. Decontamination procedures according to the EOP. Predictor variables included ED experience, education levels and frequency of training.

Data was analyzed using descriptive statistics generating means, standard deviations, frequency counts, and percentages. Kendall’s tau b assessed correlation. A p value of <0.05 was considered significant.

RESULTS

The majority of nurses (77%) had at least 3-5 years of nursing experience. The overall mean of five combined competencies was 2.95 or just below “competent” on Benner’s model. The primary outcome variables (1-5) means ranged from 2.77- 3.27. (1. “contents of the EOP” (mean 2.77 SD 1.25), 2: “Areas of responsibilities” (mean 2.8 SD 1.23), 3. “decision making processes in the Incident Command System” (mean 2.88 SD 1.21), 4. “Hospital levels of preparedness and its significance.” (mean 3.27 SD 1.18) and 5. “Decontamination procedures according to the EOP” (mean 3.03 SD 1.29). The strongest positive correlation ($r=0,502$ $p= 0.01$) was between clinical experience and self-assessed levels of competency (range

mean 1.2 to 3.80 (< 1 year and > 20 years respectively).

CONCLUSION

Nurses' overall competency concerning disaster preparedness is slightly lower than "competent" according to Benner's competence estimation model. The majority of nurses lack clinical major incident experience. Accruing actual MI experience may be elusive due to the rarity of MI. The results of this study however indicate that nurses' disaster competencies may be inadequate. However, results indicate that ED RNs may increase their disaster medicine competencies through clinical experience, training and education. Due to the relatively small sample size, the results may be generalized in similar settings with caution.

#18724 : First Seizure Due to a Ruptured Brain Dermoid Cyst**Authors:**

Sayed Majid sadrzadeh (1), Vafadar moradi Elnaz (1), Seyed Mohammad mousavi (1), behrang Rezvani Kakhki (1), shaghayegh rahmani (1)

1. , Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC

Keywords: Seizure

Abstract :

Introduction: first seizure is an unpleasant experience, the underlying cause and probability of recurrence is critical for the patient.

Case: A 72 years old female was brought to our emergency department with a complaint of first seizure. Her daughter stated that she had had a tonic clonic generalized seizure that lasted about 10 seconds. She was complaining of a headache at the time of arrival in the ED, and the seizure had ended. The physical examination was normal and she had no past medical history. Spiral axial brain CT scanning demonstrated a sharp, round lesion with peripheral calcification near the pineal gland which compressed the third ventricle. Multiple nodules with fat density were seen in the subarachnoid space. Phenytoin was started for seizure prophylaxis and a neurosurgery consultation was requested. Tumor was completely resected.

Conclusion: This is a rare case of dermoid cyst near the pineal which compressed the third ventricle and caused midline shift and hydrocephaly. The cause of seizure may be the cyst rupturing. Complete cyst resection is the preferred treatment.

Trial Registration / Funding Information (only) :

Mashhad University of Medical Sciences, Mashhad, Iran

#18725 : A Rare Manifestation of a Common Disease

Authors:

Vafadar moradi Elnaz (1), Sayyed Majid Sadrzadeh (1), behrang Rezvani Kakhki (1), Seyed Mohammad mousavi (1), shaghayegh rahmani (1)

1. , Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC

Keywords: ectopic pregnancy

Abstract :

Introduction: Ectopic pregnancy (EP) is considered a common disease worldwide. This study is intended to present a case report of ectopic pregnancy presented with syncope, a rare symptom.

Case: A 31 years old woman presented in emergency department of an academic trauma center with the chief complaint of head trauma. She was suffering of severe headache following falling down because of syncope. In prices exam she had unstable vital signs and was complaining of abdominal pain and tenderness. Routine laboratory tests including β -hCG, head CT scan, complete abdominal and abdominopelvic sonography were ordered for the patient. Results showed positive β -hCG and abundant free fluid in the abdominal cavity in sonography. After approval of ruptured ectopic pregnancy diagnosis, patient underwent laparotomy, salpingectomy and cystectomy

Trial Registration / Funding Information (only) :

Mashhad University of Medical Sciences, Mashhad, Iran

#18727 : Trauma in Pregnancy: A Case Series and Literature Review

Authors:

Seyed Mohammad mousavi (1), Sayyed Majid Sadrzadeh (1), Vafadar moradi Elnaz (1), behrang Rezvani Kakhki (1), shaghayegh rahmani (1)

1. , Mashhad University of Medical Sciences, Mashhad, IRAN, ISLAMIC REPUBLIC

Keywords: Trauma

Abstract :

Introduction: Trauma in pregnancy is a major cause of hospital admission and maternal and fetal mortality. Some of the main complications of trauma in pregnant women are intrauterine death, shock, placental abruption, intraperitoneal hemorrhage, and direct fetal injury. The present study aimed to report some of the cases of trauma in pregnancy and review the previous studies in this regard.

Case Presentation: In this case series, we presented the case of four pregnant women with trauma, who referred to various teaching hospitals in Mashhad, Iran. The subjects had blunt abdominal trauma, burn injuries, multiple trauma, and traumatic brain injury.

Conclusion: Stabilizing the mother is the primary goal in the management of traumatized, pregnant patients. In many cases, fetal outcome is directly correlated with the rapid, thorough maternal resuscitation. In viable fetuses, fetal monitoring is crucial. On the other hand, due to the high rate of complications during pregnancy, educational interventions should be considered for pregnant women and their families. Furthermore, pregnant women must be aware of risky conditions, such as motorcycle riding and not using seatbelts.

Trial Registration / Funding Information (only) :

Mashhad University of Medical Sciences, Mashhad, Iran

#18729 : Khat chewing a newly identified risk factor for developing acute coronary syndrome.

Authors:

Esmée Smits (1), Femke Gresnigt (1)

1. , none, Amsterdam, THE NETHERLANDS

Keywords: Acute coronary syndrome, Toxicology, Drugs of abuse

Abstract :

Background: Although it is well known that cocaine increases the risk of acute coronary syndrome (ACS), it is only briefly mentioned in ACS guidelines and currently has no role in risk stratification scores, like GRACE, TIMI or the HEART score. Since this increased risk is partly due to the sympaticomimetic effect, our aim was to identify other sympaticomimetic recreational drugs (SRD) that could increase the risk of developing ACS. To date there is no systematic review that answers this question.

Methods: We performed a data search from the PubMed and Embase databases, the Cochrane CENTRAL library, PsycINFO and Web of Science. All articles in English or Dutch on adult patients with ACS after the use of SRD were included. The main outcome was prevalence of ACS after use of SRD. This protocol is published in the PROSPERO database. These data were collected and reported following the PRISMA guidelines.

Results: We found 6030 articles, of which only 46 met our inclusion criteria. A total of 61 patients presented with ACS after 9 different types of SRDs (Amphetamine, methamphetamine, MDMA, a-PVP, fenethylamine, caffeinated drinks, mephedron, 4-FA and khat). 39 of these articles are case-reports or series. Of these ACS patients, 41 presented with a STEMI and 18 with a NSTEMI. In 54% of patients a coronary angiogram was performed, which showed a significant stenosis in 52% of patients. None of these studies reported a risk stratification score and other risk factors for ACS were infrequently reported. Additionally, one of the SRDs that frequently was associated with ACS included the chewing of khat, a plant based drug. The prospective studies of 4008 patients in total show that the chewing of khat, a plant-based drug, is a risk factor for ACS.

Conclusion: Khat chewing increased the risk for ACS. Therefore we suggest to include this as a risk factor for ACS in the ACS guidelines. Aside from cocaine en khat there is little and poor quality literature on the association of other SRDs with ACS. Therefore, more research should be conducted on this topic.

#18732 : Nurses' experience with using two different track and trigger systems to recognize patient deterioration – a qualitative study.**Authors:**

Caroline S. Langkjaer (1), Pernille B. Nielsen (2), Morten H. Bestle (3), Kasper K. Iversen (2), Dorthe G. Bove (1), Gitte Bunkenborg (4)

1. Emergency Department, Nordsjaellands Hospital, Hilleroed, DENMARK
2. Department of Cardiology, Herlev and Gentofte Hospital, University of Copenhagen, Copenhagen, DENMARK
3. Department of Anaesthesiology, Nordsjaellands Hospital, University of Copenhagen, Hilleroed, DENMARK
4. Department of Clinical Research, Holbaek Sygehus, Holbaek, DENMARK

Keywords: Early Warning Score, Rapid Response Systems, Clinical deterioration patient, vital signs, Risk assessment, Nursing, Qualitative, Focus Groups

Abstract :**Background:**

Hospitalized patients can experience deterioration leading to serious adverse events (SAE), such as intensive care admission and cardiac arrest. The National Early Warning Score (NEWS) system has been implemented in many settings to identify early signs of clinical deterioration and thereby prevent SAE. Nurses are the primary users of the NEWS system because an essential part of nursing is to recognize patient deterioration. However, the NEWS system has been criticized for being a "one-size-fits-all" system and inferior compliance with the NEWS system has been identified. This might occur when nurses' intuitive judgment or knowledge conflicts with the NEWS system. Individual Early Warning Score (I-EWS) is a development of NEWS and is a patient-centered tool where clinical assessment is systematically involved in the detection of patient deterioration. Based on knowledge emerging from clinical assessments such as patient's clinical presentation and patients' vital signs, supplemented with knowing the patients and their medical history and involving relatives, nurses can adjust the score by adding up to 6 points or by subtracting up to 4 points to the initial score. I-EWS could potentially meet some of the current challenges because with this tool nurses can include their observations or concerns systematically leading to an appropriate response. Gaining knowledge about nurses' experience with I-EWS and NEWS might help to identify promoting or hindering aspects of recognizing patient deterioration. This is important to developing better education, support, and tools that can lead to improved patient outcomes. Therefore, the aim of this study is to examine nurses' experience with the use of I-EWS and EWS as tools to recognize patient deterioration.

Methods:

This is a substudy to a Danish prospective cluster-randomized crossover multicenter study called Individual Early Warning Score. This substudy has a qualitative design. Data is collected through focus groups (n=6) with nurses from different wards and hospitals participating in the main study. Data will be collected from October 2018 until November 2019. Data will be transcribed verbatim, organized and analyzed in QSR NVivo 12© using a content analysis approach. Findings will be reported in compliance with the Consolidated criteria for Reporting Qualitative research (COREQ).

Results:

Data processing and analysis is in progress and currently, we have held three out of six focus groups. The last three will be held in June and August. Aspects that have emerged from the analysis will be presented at the European Emergency Medicine Congress in October 2019.

Trial Registration / Funding Information (only) :

Funding: Research Grant from Nordsjaellands Hospital. Ethical approval and informed consent: In Denmark, formal ethical approvals are not required for studies not involving biomedical issues, but the Helsinki Declaration will be followed, and participants will be included after oral and written informed consent has been completed.

#18734 : Quality Improvement Project: Pain Management of children in an ED

Authors:

fiona scullion (1), fiona scullion (1)

1. , none, belfast, UK

Abstract :

Introduction: The Craigavon Area Hospital Emergency Department demonstrated a poor performance in the recent RCEM audit 2017/18 for the management of pain in children with minor injuries. I conducted a quality improvement project, in the Emergency Department, with the aim of improving the pain management of our paediatric population.

Method: I formed a project team. I implemented change by re-educating staff, introducing pain passports to the department using a patient centred approach and developed a new pain passport sticker for every child's notes.

Results: Following implementation, 55% of children attending the Emergency Department with a minor injury had a pain score documented (compared to 0% in the RCEM audit), 77% had documented evidence of having received analgesia (compared to 43%) and 40% had evidence of re-evaluation of their pain control (compared to 25%). This performance unfortunately fell well below the RCEM target level but has remained significantly better than our baseline management of pain in the department.

Conclusion: Although there are still improvements to be made, the introduction of pain passports and stickers will continue to be used. The department believes these interventions will ultimately improve the quality of care given to our paediatric population. There are plans to share this pain passport with our Emergency Department colleagues in Alder Hey Children's Hospital, Liverpool and Royal Belfast Hospital for Sick Children, Belfast.

Trial Registration / Funding Information (only) :

no funding

#18736 : The 2017 freezing rain in Milan: impact on the regional ambulance services and emergency departments**Authors:**

Tommaso Scquizzato (1), Omar Saleh (1), Alessia La Bruna (1), Luis Eduardo Mendoza Vasquez (1), Kim Jun Hyun (1), Stefano Turi (1), Andrea Dorotei (1), Giuseppe Ponzetta (1), Giuseppe Giardina (1), Alberto Zangrillo (1), Giovanni Landoni (1)

1. Department of Anesthesia and Intensive Care, IRCSS San Raffaele Scientific Institute, Milan, ITALY

Keywords: freezing rain, ice storm, emergency department, ems, ambulance, overload, overcrowding

Abstract :

Background. Freezing rain is an and unpredictable weather phenomenon which can potentially affect the healthcare system of a large area, with an impact on millions of citizens.

Objective. To report on the extensive overload of the emergency system during a freezing rain event which occurred in Lombardy, a region in northern Italy with Milan as capital, on January 13th 2017.

Methods. Data on emergency calls and missions of emergency vehicles were obtained from the emergency service official reports (i.e. Azienda Regionale Emergenza e Urgenza, AREU). Data on emergency examinations were made available by the regional authority: overall visits, severity and diagnosis were collected. A burden index was reported to evidence the workload forced on emergency departments (ED).

Results. Of the four Lombardy Region areas covered by the AREU and encompassing 117 EDs, the Metropolitan Area around the city of Milan (MM) suffered the worst. Emergency calls and missions peaked on the day of the event, an increase unseen in the previous four years of service. ED admissions increased by 45% and they were mostly due to traumas occurring on the road or at work, of low to moderate severity. More than 70% of the 38 EDs in the MM proved to be overloaded. On January 13th 2017, more than 1400 missions were dispatched in the same area. Notably, the other peaks in the chart were registered on March 2017, in coincidence with the Pope's visit to Milan, and on July 2015, when an exceptional heat wave hit the city.

Conclusions. We presented the first European report on the impact of an ice storm on a healthcare system. Early alert of population and healthcare professionals should be considered in coincidence with freezing rain events to prevent a dangerous overload of the emergency system.

#18737 : Fibrinogen is an independent predictor of massive transfusion in patients with unstable variceal hemorrhage**Authors:**

Kim Dongseob (1)

1. , none, Gwangju, KOREA

Keywords: Fibrinogen, Emergency department, Massive transfusion, Variceal hemorrhage

Abstract :

Introduction: Unstable variceal hemorrhage (UVH) is the most common disease that can require massive transfusion in medical conditions, except trauma and surgery. Fibrinogen may be reduced due to loss from hemorrhage, increased consumption and reduced synthesis. The present study aimed to analyze the prognostic performances of fibrinogen level for massive transfusion in patients with unstable UVH.

Methods: This retrospective observational study included patients with UVH from March 2016 to February 2018. Receiver operating characteristics analysis was performed to examine the prognostic performance of platelet count, activated partial thromboplastin time (APTT), international normalized ratio of prothrombin time (PT-INR), fibrinogen level, FDP level, and D-dimer level for predicting MT. Associations between initial fibrinogen level and massive transfusion were analysed using multiple logistic regression.

Results: Of the 199 included patients with unstable UGIB, 6.0% (n=12) of patients received massive transfusion. The area under the curves (AUC) of platelet count, APTT, PT-INR, fibrinogen level, FDP level, and D-dimer level were 0.541 (95% confidence interval [CI], 0.470–0.612), 0.759 (95% CI, 0.694–0.817), 0.807 (95% CI, 0.745–0.859), 0.631 (95% CI, 0.560–0.698), 0.627 (95% CI, 0.556–0.694), and 0.837 (95% CI, 0.779–0.886), respectively. In multivariate analysis, fibrinogen level was independently associated with massive transfusion in patients with UVH (Odds ratio, 0.970; 95% CI, 0.948–0.993).

Conclusion: Fibrinogen level has good prognostic performance for massive transfusion in UVH.

Trial Registration / Funding Information (only) :

N-A

#18739 : Quality of life among acutely admitted elderly with and without homecare - A cross sectional study**Authors:**

Mette Elkjær (1), Jette Primdahl (2), Christian Backer Mogensen (3), Mikkel Brabrand (4), Bibi Gram (5)

1. PhD student, Department of Emergency Medicine, Hospital of Southern Denmark, Aabenraa, DENMARK
2. Professor, Danish Hospital for Rheumatic Diseases, Hospital of Southern Denmark, Sønderborg, DENMARK
3. Professor, Department of Emergency Medicine, Hospital of Southern Denmark, Aabenraa, DENMARK
4. Professor, Department of Emergency Medicine, Hospital of South West Jutland, Esbjerg, DENMARK
5. Associate Professor, Research Unit of Health Sciences, Hospital of South West Jutland, Esbjerg, DENMARK

Keywords: Quality of Life, acutely admitted elderly, homecare

Abstract :Introduction

In Denmark (2017) out of 600.000 yearly hospital admissions of elderly ≥ 65 year, 77.5% were acute. Acute admitted elderly who are dependent on homecare may be especially challenged. Nuanced knowledge about their quality of life (QoL) is limited. The aim of this study is to investigate the difference in ratings and definition of QoL between acutely admitted patients ≥ 65 years, with and without homecare.

Methods

A cross sectional study is in progress at three Danish emergency departments (ED). Acutely admitted cognitively well-functioning patients ≥ 65 are invited from August 2018 and interviewed during their admission. The primary outcome is QoL measured by the questionnaire Schedule for the Evaluation of Individual Quality of Life – Direct Weighting (SEIQoL-DW) (scale 0-100). In order to determine their QoL, the patients select and rate the five most important areas of their QoL. In addition, length of stay and hours of received homecare per week are collected from their medical records.

Linear regression analyses will be used to test the associations between homecare (≥ 2 hours per week) and QoL. The most important areas selected and defined by the patients will be described qualitatively. The areas will be condensed into themes to find the participants overall definition of QoL. Difference in QoL between the groups will be tested by un-paired t-test.

A sample size calculation for two-sample means test, level of significance 95%, power 80% and with 10 percent difference in QoL score between the two groups showed that 406 participants is required.

Results

At present, 297 participants are included in the study and 28% of them receive homecare. Mean age is 76 years (min 65 – max 96), 46% are male and 42% of the participants are living alone. Median length of stay is 41 hours (Interquartile range (IQR): 22 – 86) and 63% of the participants are discharged from the ED. Median QoL score is 81.9 (IQR: 70.0 - 90.3) and areas of importance for the patients QoL so far are; family, friends, neighbours, freedom, activities, and health. The time required to complete SEIQoL-DW is 30 min (IQR: 27-35). The inclusion is expected to be completed in June 2019 and analyses on the full data set will be ready in October.

Conclusion

This study is ongoing. The authors expect that a patient perspective on QoL can provide nuanced knowledge on QoL among acutely admitted patients and to be able to detect association between QoL and dependence on homecare. Aspects that define individual QoL among patients receiving homecare can be used to develop a guide about the most important priorities and adjustments in nursing care and discharge procedures regarding this fragile population.

Trial Registration / Funding Information (only) :

Trial Registration at ClinicalTrials.Gov - NCT03762941 Funding: Novo Nordisk Foundation

#18741 : High doses proton pump inhibitors in sepsis: design of a randomized trial with in vitro experiments to search specific hallmarks in monocytes from septic patients and to characterize the mechanism of action of PPI

Authors:

Giacomo Monti (1), Nicola Pasculli (1), Massimiliano Nuzzi (1), Laura Ruggeri (2), Tommaso Scquizzato (1), Giuseppe Dalessandro (1), Pierfrancesco De Domenico (1), Caterina Cecilia Lerose (1), Sonia Carta (3)

1. Department of Anesthesia and Intensive Care, IRCSS San Raffaele Scientific Institute, Milan, ITALY
2. Department of Cardiovascular Research, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan, ITALY
3. Cellular Biology Department, IRCCS San Martino Institute, Genova, ITALY

Keywords: sepsis, Proton pump inhibitors, organ failure, septic patients, emergency department, icu

Abstract :

Background. Increasing evidence indicates that mitochondrial damage associated to oxidative stress and acidosis play a relevant role in acute sepsis. Proton pump inhibitors (PPI) have been recently reported to inhibit TNF- α and IL-1 β secretion by blocking proton extrusion in activated monocytes. Moreover, a single administration of PPI protects mice from endotoxic shock with no adverse effects.

Objectives. We designed a randomized, double blind, controlled clinical trial with esomeprazole in septic patients. Primary outcome is severity of multiple organ failure measured by mean SOFA scores. We will also investigate mortality and other clinically relevant outcomes. In parallel, we will evaluate changes in redox-state and functional activation of ex-vivo monocytes from septic patients.

Methods. Inclusion criteria: adult patients; admitted to ICU or ED; sepsis or septic shock since less than 36 hours. Exclusion criteria: known allergy to esomeprazole; little chance of survival (SAPS II score > 65); concomitant AIDS; received immunosuppressants or long-term corticosteroids; severe hepatic dysfunction; receiving a life-saving drugs known to have a strong interference with esomeprazole.

Patients will be randomized to receive either a bolus of 160 mg of esomeprazole followed by IV infusion of 12 mg/hour for 72 hours, or placebo. Monocytes isolated from blood samples will be assessed for basal and post-inflammatory activation ROS, antioxidants, redox-response, ATP and cytokine secretion. Epigenetic modifications and changes in expression of miRNA targeting genes involved in sepsis will be investigated. Monocytes will be differentiated in macrophages and the effect of PPI treatment in the pro- or anti-inflammatory polarization will be evaluated.

Expected results. We expect to assess a reduction in severity of organ failure in experimental group, without safety issues. Moreover, we plan to identify a correlation between redox-stress, activation and polarization in monocytes from sepsis patient treated with esomeprazole. This study received a grant from Ministry-of-Health, Giovani-Ricercatori 2016, n. GR-2016-02363630.

Trial Registration / Funding Information (only) :

This study received a grant from Ministry-of-Health, Giovani-Ricercatori 2016, n. GR-2016-02363630.

#18742 : A clinical prediction model to identify which children attending the emergency department are at risk for returning with a serious illness after initial discharge: a prospective multicentre observational study**Authors:**

Ruud Nijman (1), Dorine Borensztajn (2), Joany Zachariasse (2), Carine Hajema (2), Paulo Freitas (3), Susanne Greber-Platzer (4), Frank Smit (5), Claudio Alves (6), Johan van der Lei (7), Ian Maconochie (8), Henriette Moll (2)

1. Imperial College of Science, Technology and Medicine, Section of Paediatrics, London, United Kingdom. , none, London, UK
2. Erasmus MC-Sophia Children's Hospital, Department of General Paediatrics, Rotterdam, the Netherlands, none, Rotterdam, THE NETHERLANDS
3. Hospital Prof. Dr. Fernando Fonseca, Intensive Care Unit, Lisbon, Portugal, none, Lisbon, PORTUGAL
4. Medical University Vienna, Department of Paediatrics and Adolescent Medicine, Vienna, Austria, none, Vienna, AUSTRIA
5. Maasstad Hospital, Department of Paediatrics, Rotterdam, the Netherlands, none, Rotterdam, THE NETHERLANDS
6. Hospital Prof. Dr. Fernando Fonseca, Department of Paediatrics, Lisbon, Portugal, none, Lisbon, PORTUGAL
7. Erasmus MC- University Medical Centre Rotterdam, Department of Medical Informatics, Rotterdam, The Netherlands, none, Rotterdam, THE NETHERLANDS
8. Department of Paediatric Emergency Medicine, St Mary's hospital-Imperial College NHS Healthcare Trust, none, London, UK

Keywords: paediatric emergency medicine, return visits, serious illness, prediction model, observational study

Abstract :

Objectives:

To study the characteristics of an initial visit of children presenting to the emergency department (ED) that are associated with a revisit with a serious illness, and to develop a clinical prediction model.

Methods:

We performed a prospective multicentre observational study in five European EDs (the TRIAGE study). Standardised data on patient characteristics, Manchester Triage System urgency classification, vital signs, clinical interventions and procedures, and outcomes were collected for consecutive children aged

Results:

109,482 children with an index visit were included, of whom 98,561 children (90%) were discharged. 1,026 children (1.0%) returned to the ED with serious illness out of a total of 7,891 representing children (13.0%). Rates of revisits with serious illness varied between the hospitals (range 0.7–2.2%).

Characteristics of the index visit associated with a revisit with serious illness included: age (children

A model predicting the risk of a revisit with serious illness based on clinical characteristics had an AUC of 0.73 (95% CI 0.71–0.75). 1,634 children had a risk of $\geq 5\%$, which was useful for ruling in a revisit with serious illness, with positive likelihood ratio 5.65 (95% CI 4.62–6.91) and specificity 0.98 (95% CI 0.98–0.98). 31,876 children had a risk $<0.5\%$, which was useful for ruling out a revisit with serious illness (negative likelihood ratio 0.25 (95% CI 0.20–0.31), sensitivity 0.92 (95% CI 0.90–0.93)). A model also including intravenous medications, clinical interventions, and laboratory investigations had improved AUC of 0.75 (95% CI 0.74–0.77; $p < 0.001$).

Conclusion:

Multiple characteristics of an index visit were associated with the risk of a revisit with serious illness. We developed a prediction model that can aid physicians identifying those children at highest and lowest risks for developing a serious illness after initial discharge from the ED, allowing for more targeted safety netting advice and follow-up.

Trial Registration / Funding Information (only) :

n/a

#18744 : Survey of doctors attitudes towards, and use of , ultrasound guidance during peripheral intravenous cannulation.

Authors:

Cahal Dignan (1), Fiona Hunter (2)

1. NHS, NHS, Glasgow , UK
2. NHS, NHS, Glasgow, UK

Keywords: Ultrasound, intravenous, cannulation, survey

Abstract :

Peripheral intravenous cannulation is a common emergency department procedure and ultrasound guidance can improve success rates and patient satisfaction with the procedure. While formal ultrasound training exists for abdominal/cardiac imaging, vascular ultrasound is largely taught ad hoc and 'on the shop floor'. This leads to a wide variation in practice in terms of staff comfort with the procedure and the technique used. This survey of emergency department staff in University Hospital Monklands aimed to assess staff attitudes and their use of peripheral ultrasound guided IV cannulation (PUIVC), as well as looking at techniques used.

This was a survey of emergency department doctors of all grades working in University Hospital Monklands, a district general hospital in Lanarkshire Scotland, seeing both adult and paediatric patients. All doctors were invited to complete a survey via an emailed link between January and March 2019, with one reminder sent halfway through.

24 doctors out of 32 doctors responded to the survey. However not all participants answered every question. 14 doctors indicated they did currently use PUIVC with 8 saying they did not. Regarding factors that stopped people from using PUIVC respondents felt they were 'not trained/did not know how' (6/12), they were 'not confident' (5/12), or that 'it was a faff' (3/12). Most respondents thought 'semi-formal training (a session at weekly teaching)' was likely to result in them using PUIVC more often (9/14), with others indicating a formal course (6/14) or informal on the shop floor teaching (5/14) would achieve this. Some thought a dedicated machine for PUIVC or a box with kit readily stocked would help (4/14). In response to 'what is your trigger for using US guidance', 16/21 indicated a certain number of attempts by themselves, 14/21 that they would use it in critically unwell patients where they had been unable to quickly identify veins, and 10/21 that a certain number of attempts by other could be their trigger. Looking at technique most respondents report cleaning the skin, not covering the probe and using the US jelly in the bottle (9/16), far less covered the probe with a tegaderm and used sterile jelly (3/16). Of those using an uncovered probe and non-sterile jelly, over half cited a lack of evidence to support other practice (6/13), almost a quarter (4/13) thought other techniques were a faff, or there was nothing wrong with their practice.

This survey shows that even in a small department there can be a wide scope of practice. More junior respondents were more likely to not use PUIVC, feel less confident or untrained, and wanted semi-formal/formal training to help develop their skills. Lack of evidence was highlighted as a factor leading to variation in sterility during this procedure. A teaching session to be delivered to junior staff has been developed to be given during weekly teaching and the authors are currently undertaking a BestBet to find evidence to guide practice within this department and others.

Trial Registration / Funding Information (only) :

n/a

#18747 : Impact of implementation of a rapid influenza Point of Care Testing (POCT) in the Emergency department (ED)**Authors:**

Christelle Hermand (1), Narjis Boukli (2), Aurélie Schnuriger (3), Nicolas Cury (1), Youri Yordanov (1)

1. Emergency department, Hôpital Saint-Antoine, PARIS, FRANCE

2. Service de virologie, Hôpital Saint-Antoine, PARIS, FRANCE

3. Service de virologie, Hôpital Trousseau, PARIS, FRANCE

Keywords: influenza, POCT, organization

Abstract :**Background:**

Seasonal Influenza is a common pathology leading to a surge in patient visits in ED. The diagnosis is usually clinical with association of fever, headache, asthenia and respiratory tract involvement symptoms. The main complications are pneumonia and can lead to acute respiratory distress syndrome and underlying chronic illness decompensation. Isolation measures and single-room admission are needed to avoid transmission. PCR for respiratory virus analysis is performed in another center and results are available 24 to 72 hours after the sample was made.

The aim of this study was to evaluate the impact of a rapid influenza POCT.

Patients and method:

It's a prospective, observational, monocentric study from 15/01/2018 to 05/02/2018. We assessed a rapid influenza POCT by immunochromatography system. One hundred kits were available. Two nasal swabs were collected; one for the POCT and the second one for PCR test. The indication was left to the physician decision, however the recommendations were: patients who needed admission to the hospital or when the rapid result could change the patient management.

Results:

During the study period, 3784 ED visits were recorded. Among the 100 available tests, 97 were interpreted. The mean and median ages were respectively 69.7 and 75 year old [22-101]. 36 patients (37%) had influenza diagnosis, 13 influenza A and 23 influenza B, confirmed with PCR test. The diagnosis with POCT failed for 21 patients: one false positive and 20 false negatives (52% of influenza cases). The sensitivity, specificity, positive predictive value and negative predictive value were respectively 44, 98, 94 and 75%. 6 patients had a respiratory syncytial virus infection. Among patients with influenza confirmed diagnosis, 3 had association of fever, sudden onset, asthenia and respiratory symptoms, 19 had fever and respiratory symptoms, 2 isolated fever. 19.4% had influenza vaccine. Leucocytes were increased ($>10\,000$ /mm³) in 39% of patients, CRP was upper than 50mg/l for 10 of 25 patients who had the test and 5/15 PCT were superior to 0.5 µg/l. Among patient with positive POCT, 37% had an antibiotic prescription versus 75% when the test was wrongly negative and 87.5% versus 0 had oseltamivir prescription. 13 patients with positive rapid test were admitted (81.25%) with a length of stay of 9.92 days and 18 patients (90%) with negative POCT and PCR secondary confirmed influenza diagnosis with a length of stay of 10 days.

Discussion:

Influenza diagnosis is usually an association of symptoms during epidemics. In elderly population, clinical presentation is uncommon with high risk of complications. Rapid diagnosis is useful to plane isolation measures. Antibiotic prescription increases in case of non-contributive test. Regarding the test assessment, due to its low sensibility, we didn't use it during the 2018-2019 season and decide to use a rapid molecular

test (isothermal nucleic acid amplification technology).

Conclusion

Rapid influenza diagnosis for admitted patients has an organizational impact. This affects the antibiotics and oseltamivir prescriptions. A test with good sensibility is required.

#18751 : Which impact would the novel management of paracetamol poisoning have in a French AE**Authors:**

Hanna Ovaska (1), Hanna Ovaska (1), Lionel Nakad (1), Kholoud Aloui (1), Christian Kassasseya (1), Jean-Florent Akou'ou (1), Mehdi Khellaf (1)

1. SAU CHU Henri Mondor, APHP, Creteil, FRANCE

Keywords: paracetamol OD, 100 line, novel NAC regime

Abstract :

2012 UK adapted new recommendations in paracetamol poisoning management with treatment decision based on the 100mg/l- line, treating all staggered/uncertain ingestions to improve the patient security, and results of novel 12 h N-Acetylcysteine (NAC) regimen of 2 bag-protocol with anti-emetic pre-treatment has been published with promising results (SNAP).

Retrospective monocentre study on paracetamol poisoning management in our AE 2014-2018 with analysis of which impact the novel management criteria would have in our patient population. French recommendations is to start the NAC if >8G ingested and decision to continue the treatment is based on the simplified Prescott nomogram with 150mg/L treatment line.

We included 137 files with paracetamol OD T39,1 as main diagnosis, median age 32,7 yrs(15-88), 79% females, paracetamol ingested 14,45g (1,5-65g) and delay presentation AE 5:46 hrs(0:10-72:00). The median length of stay(LOT) 20:53h (01:40-96:00)

NAC was started in 90 cases and continued in 43 according to the French recommendations. In 24% treatment decisions were based on S-paracetamol < 4H post ingestion.

Application of the UK recommendations identified 17 more patients, including all the late presentations and staggered ODs, which tended to be underestimated in our population and treatment decisions were incorrectly based on S-paracetamol levels.

Errors were identified in 30% of the NAC prescriptions

The NAC was prescribed 6:56 h(00:14-23:45) post ingestion and treatment with the 1st bag was established with mean delay of 00:46H (00:02-03:04) post prescription, the 2nd NAC mean delay 00:34 hrs (-1:00-03:08), and the 3rd NAC 01:13 (-5:15- 18:40hrs). 49% of the patients prescribed antiemetic. Other adverse reactions seen were 7 cases of pruritus (8%) and 1 case of bronchospasm (1%). No serious adverse reactions were recorded.

Conclusion

Implicating the novel Paracetamol management guidelines would increase the indication to treat from 31% -44% in cases studied, but would increase the safety marginal for the patients, especially for those presenting with staggered ingestion or late presentation. The 3-bag protocol is a source of confusion when prescribing and errors were identified in 30% of the prescriptions. Delays were seen with the 3 bag protocol and are often related to overcrowding at the AE. The Novel NAC regimen would decrease the treatment time from 21h to 12 h, simplify the prescription in hope to avoid errors and therefore risk of adverse events for the patients. The shortened LOT would hopefully decrease the delay for the psychiatric assessment, management and orientation of the patients, and would help to fight the overcrowding at AEs which is always deleterious for the patients. We are eagerly awaiting the results from the validating studies

#18752 : improvement of neurological outcome in out-of-hospital cardiac arrest patients through smartphone-assisted advanced life support**Authors:**

Choi Han Joo (1), Han Kyoung Hee (2), Choi Yong Hyun (1)

1. Emergency Medicine, Dankook University Hospital, Cheonan, KOREA
2. Gynecology, Wonju Severance Hospital, Wonju, KOREA

Keywords: cardiac arrest, out of hospital, treatment outcome

Abstract :**Background**

This study aimed to find what were associated with improved cerebral performance category (CPC) of out-of-hospital cardiac arrest (OHCA) patients in a pilot project called "Smartphone-Assisted Advanced Life Support" (SALS). After the trial of SALS, high quality of basic life support (BLS) has been still emphasized on cardiopulmonary resuscitation (CPR) of the emergency medical service (EMS) and direct medical oversight through a smartphone has been available on the scene. These can increase prehospital ROSC more than before the trial of SALS.

Methods

This study was conducted with a controlled trial from August 2015 to December 2016. The SALS group was composed with 7 regional committee. The primary and secondary outcomes were survival discharge and a good neurological outcome as CPC score 1 or 2, respectively.

Results

There were 2536 OHCA patients enrolled in the SALS group. Among all 7 committee, there were no significant differences on prehospital return of spontaneous circulation (ROSC) ($p=0.152$). But, there were significant differences on survival admission, survival discharge and CPC score ($p<0.001$, 0.025 and 0.020, respectively). According to the results of "time interval to back-up unit" and "total prehospital time", the SALS group was divided by 2 subgroups (A and B). Subgroup A had better outcomes in survival admission, survival discharge and good CPC score than subgroup B ($p<0.001$, 0.032 and 0.049, respectively). There were no significant differences on gender, witness, bystander CPR, shockable rhythm, Utstein style, time interval to IV access and prehospital ROSC between 2 subgroups ($p=0.074$, 0.453, 0.332, 0.576, 0.441, 0.164 and 0.989, respectively). There were significant differences on dispatcher's recognition, Scene, age of patients, time interval of response, time interval of staying at the scene, transport time, total prehospital time, time interval to back-up unit, time interval from call to first compression ($p<0.001$, all), and time interval to epinephrine injection ($p=0.005$) between 2 subgroups. These differences were clearer on OHCA occurred in the house ($p<0.001$, all)

Conclusions

In our study, the efforts of EMS to improve good neurologic outcome in OHCA patients include decreasing time interval of back-up unit to arrive at the scene, time interval of response, total prehospital time, time interval to epinephrine injection and time interval from a call to first compression.

Trial Registration / Funding Information (only) :

Funded by the Republic of Korea, Ministry of Health and Welfare, 090-091-2800-2832-309

#18754 : Procalcitonin and Presepsin for Identification of Sepsis and Risk Stratification in a Cardio-Vascular intensive Care Unit

Authors:

Eberhard Spanuth (1), Patrick Engesser (2), Boris Ivandic (3), Konstantin Mechler (3)

1. , DIAnearing - Diagnostics Engineering & Research, Heidelberg, GERMANY

2. , Mitsubishi Chemical Europe, Düsseldorf, GERMANY

3. , University Clinics Heidelberg, Heidelberg, Germany, Heidelberg, GERMANY

Keywords: Procalcitonin, Presepsin Risk stratification, Sepsis, ICU

Abstract :

Background: Sepsis is commonly associated in critical ill patients. Assessment of disease severity at the time of initial presentation could be helpful in the patient management. Procalcitonin (PCT) is commonly used in the diagnosis of sepsis. Presepsin (PSEP) has been shown to provide powerful prognostication in sepsis.

Objective: We thought to evaluate the validity of PCT and PSEP for the diagnosis of sepsis and the assessment of disease severity and outcome prediction in the setting of a cardio-vascular intensive care unit (ICU).

Methods: 71 patients admitted to a cardio-vascular ICU were included. PCT and PSEP were determined at the time of initial presentation by using Elecsys BRAHMS PCT (Roche, Switzerland) and PATHFAST Presepsin (LSIM, Japan). Samples were obtained at the day of admission to ICU. The primary study endpoint was death during hospitalization.

Results: 16 patients obtained a transfemoral implantation of a prosthetic aortic valve (TAVI), who recovered rather quickly without complication and served as control group. Of the remaining group 27, 23 and 5 patients were assigned to sepsis, resuscitation after sudden cardiac death and pneumonia requiring assisted ventilation, respectively.

The PCT values of the control group were found to be below the cutoff for bacterial infection of 0,5 pg/L (max 0.29 pg/L), whereas the corresponding PSEP values failed to comply. In 9 patients PSEP values were below the cutoff of 350 ng/L (max 346 ng/L) but in 7 patients PSEP exceeded the cutoff (min 634 ng/L). 24 patients of the sepsis group exhibited PCT values above the established cutoff of 2 pg/L but 3 patients had values < 2pg/L (max 0.645 pg/L) although these patients were assigned to septic shock. PSEP values in all patients of the sepsis group exceeded the cutoff of 350 ng/L (min 1030 ng/L).

23 (41.8%) patients died and 29 (52.7%) needed dialysis. The majority of non-survivors occurred in the sepsis group 17 (63.0%) whereas only 6 (13.6%) were belonging to patients without sepsis.

ROC analysis for sepsis revealed AUC values for PCT and PSEP of 0.806 and 0.923. AUC values for death in the sepsis group revealed AUC values of 0.706 (sens 76.5%, spec 70%, crit. 2337 ng/L) and 0.506 (sens 88.2%, spec 30%, crit. 3.06 pg/L) for PSEP and PCT, respectively. For prediction of need of dialysis for PCT and PSEP the ROC analysis revealed AUC values of 0.798 and 0.874.

These findings showed that PCT and PSEP could complement each other in the diagnosis of sepsis and risk stratification in patients admitted to a cardio-vascular ICU. PCT could be used for the identification of sepsis at admission with high diagnostic validity, whereas PSEP is superior in prognostication and prediction of outcome in sepsis.

Conclusion: Combination of PCT and PSEP provided a higher validity in identification and risk stratification

of septic patients admitted to a cardio-vascular ICU. PSEP demonstrated strong relationship with disease severity and outcome. The PATHFAST system allows early determination of PSEP from whole blood in the ICU in addition to PCT and may improve the management.

#18755 : A retrospective cohort study during the month of Ramadan on the utilization of the Pediatric Emergency Department in an Eastern Mediterranean tertiary care center.**Authors:**

Rasha Sawaya (1), Cynthia Wakil (1), Sami Shayya (1), Moustafa Al Hariri (1), Alik Dakessian (1), Adonis Wazir (1), Maha Makki (1), Karim Hajjar (1), Sarah Jamali (2), Hani Tamim (3)

1. Department of Emergency Medicine, American University of Beirut, Beirut, LEBANON
2. Faculty of Medicine, American University of Beirut, Beirut, LEBANON
3. Department of Internal Medicine, American University of Beirut, Beirut, LEBANON

Keywords: Ramadan, Pediatric Emergency Department, work efficiency measures

Abstract :

Introduction: During the month of Ramadan, Pediatric Emergency Departments (PEDs) may experience differences in patient presentations. Data on how this affects PED visits and metrics is scarce. This limits the ability to identify trends in patient presentation and organize PEDs accordingly. In a country where more than half of the population is of Islamic faith, our objective was to investigate the impact of Ramadan on ED pediatric patient characteristics, diagnoses and metrics, by comparing presentations during the months of Ramadan and non-Ramadan.

Methods: A retrospective cohort study of children 0-18 years of age presenting to the PED of a tertiary care center in Beirut, Lebanon during the 2016 and 2017 months of Ramadan (Ramadan group) and the months before and after Ramadan (non-Ramadan group). Presentations were stratified into fasting times (04:00 – 20:00) and non-fasting times (20:00 – 04:00). Collected data included demographics, illness presentation, final diagnosis, and work efficiency measures.

Results: We included 5711 patients with mean age of 6.1 years \pm 5.3 and 55.4% males. The number of visits/day was 28.3 \pm 6.5 during Ramadan compared to 31.5 \pm 7.3 during non-Ramadan ($p = 0.004$). The peak time of visits was 6-10 pm during non-Ramadan, and 10 pm-2 am during Ramadan. There was no significant difference in patient characteristics and clinical outcomes in both groups. During Ramadan, there were significantly more gastrointestinal (GI) (35.5 vs. 39.3%, $p < 0.01$) and trauma-related (1.7 vs 3.0%, $p < 0.01$) complaints and discharge diagnoses (GI, 32.8 vs. 36.1%, $p < 0.05$ and Trauma, 2.6 vs 3.5%, $p < 0.05$). During Ramadan, there was a consistent increase from week 1 to 4 in GI complaints (from 34.6 to 45.1%) and acute gastritis/gastroenteritis diagnoses (from 27.8 to 32.8%). When providing care during both fasting and non-fasting hours, Ramadan group had shorter work efficiency measures such as time to order laboratory tests (21.1 vs 24.3 minutes) and collect the samples (50.7 vs 54.8 minutes).

Conclusion: During Ramadan, there were significantly fewer PED visits and better work efficiency measures but a later peak in visits. There were also significantly more GI and trauma complaints. These findings can help EDs restructure their staffing during Ramadan while expecting more GI complaints that may require more interventions and evaluations. We recommend further studies on these specific populations, as well as fasting children and physicians.

#18756 : Retrospective analysis of complaints in emergency department: a quality indicator?**Authors:**

Ludovic Lefrancq (1), Marc Van Nuffelen (1), Siham Hbat (1), Stéphane Debaize (1), Fouzya Chihi (1), Laurent Ligy (1), Christian Melot (1)

1. Emergency Department, Erasme University Hospital, Brussels, BELGIUM

Keywords: Emergency department, complaints, quality of care, communication skill

Abstract :**Background:**

Emergency department patient complaints are often justified and may lead to apology, remedial action or compensation. The aim of the present study was to analyze emergency department patient complaints in order to identify procedures or practices that require change and to make recommendations for intervention strategies aimed at decreasing complaint rates.

Methods:

We undertook a retrospective analysis of patient complaints from a tertiary hospital emergency department from 2010 to 2018. Data were obtained from letters of response to patient's complaints. Ethics committee of the Erasme hospital approved the study and waived informed consent.

Results:

349,714 patients were seen in the emergency room from 2010 to 2018, of whom 74,944 (21.4%) were hospitalized. In addition to this number, there are 18,206 patients (5.2%) who leave the emergency department without being seen due to department overcrowding. 279 written complaints (0.08%) were sent to the medical management of the hospital, the mediation service or directly to the emergency department. The median age of patients associated with a complaint was 33 (18-53, IQR; 0 to 80, range) years, with M:F ratio = 0.47. Among the complaints 23.5 % concerned the diagnosis, 22 % invoices for hospital care, 18 % communication with the medical doctor, 16 % the length of the waiting time, 10.5 % the treatment itself, and 10 % the nurse's communication.

Discussion & conclusions:

Over the observation period, the yearly number of written complaints remained stable at less than 0.1 % of total number of the ED's patients. More than 50 % of the complaints concerned a wrong or inadequate diagnosis, invoice for hospital care, and communication with the medical doctor. As a remedial measure, meticulous patient care and communication skills workshops for emergency department doctors and nurses will improve patient's satisfaction and quality of care in the ED.

Trial Registration / Funding Information (only) :

Trial registration. The study was not registered because there was no appropriate register. Funding. This study did not receive any specific funding.

#18757 : Clinical features, management, and factors associated with mortality in pediatric patients with acute myocarditis: an analysis of a Japanese administrative database**Authors:**

Shingo Ohki (1), Koji Hosokawa (1), Masumi Matsuoka (2), Shinichi Tomioka (2), Shinya Matsuda (2), Nobuaki Shime (1)

1. Department of Emergency and Critical Care Medicine, Graduate School of Biomedical and Health Sciences, Hiroshima University, Hiroshima, JAPAN

2. Department of Preventive Medicine and Community Health, University of Occupational and Environmental Health, Kitakyushu, JAPAN

Keywords: acute myocarditis, fulminant myocarditis, hospital case volume, pediatrics

Abstract :**Background**

Pediatric acute myocarditis frequently causes severe symptoms and sudden death. Because of its low prevalence, large-sized surveys have been limited, and the factors associated with mortality have not been studied extensively.

Objectives

To describe the clinical characteristics, management, and outcomes of pediatric patients with acute myocarditis and to investigate the relationship between clinically relevant factors, including hospital case volume and mortality.

Methods

We performed a retrospective observational study in Japan using the Diagnosis Procedure Combination (DPC) database, a Japanese in-hospital patient register system, from April 2012 to March 2017. We included pediatric patients aged <18 years who were diagnosed with acute myocarditis. We defined patients with fulminant myocarditis (FM) as those who received inotropes, vasopressors, and/or mechanical circulatory support. In this subgroup, we performed multivariate logistic regression analysis to investigate the factors associated with all-cause in-hospital mortality.

Results

We included 524 pediatric patients with acute myocarditis (including 231 patients with FM) treated at 242 hospitals. All-cause in-hospital mortality in the total cohort was 10.1%. All-cause in-hospital mortality in the FM subgroup was significantly higher than that in the non-FM group (21.7% vs 1.3%, $P < 0.001$). Multivariate logistic regression analysis in the FM subgroup showed that all-cause in-hospital mortality was significantly lower in the highest age category (12–17 years; odds ratio [OR], 0.22; 95% confidence interval [CI], 0.08–0.59; $P = 0.003$; reference category: lowest age category [0 year]) and in the highest hospital case volume category (≥ 0.8 patients/hospital/year; OR, 0.32; 95% CI, 0.12–0.80; $P = 0.015$; reference category: lowest hospital case volume category [< 0.4 patients/hospital/year]). Requirement of mechanical circulatory support was associated with a significantly higher mortality (OR, 2.84; 95% CI, 1.53–5.25; $P = 0.001$). Administration of intravenous immunoglobulin or corticosteroids was not associated with mortality.

Conclusions

In-hospital mortality of pediatric patients with acute FM was as high as 22%. A lower mortality was associated with older age and treatment at high-case-volume hospitals. Further investigations are required to elucidate the reason for better outcome in high-case-volume hospitals, which may differ from low-case-volume hospitals in the management of pediatric patients with acute myocarditis.

Trial Registration / Funding Information (only) :

This study did not receive any specific funding.

#18758 : Simultaneous Assessment of qSOFA and Presepsin Improves the Prognostication of Sepsis in the Emergency Department**Authors:**

Eberhard Spanuth (1), Patrick Engesser (2), Boris Ivandic (3)

1. , DIAnearing - Diagnostics Engineering & Research, Heidelberg, GERMANY
2. , Mitsubishi Chemical Europe, Düsseldorf, GERMANY
3. , University Clinics Heidelberg, Heidelberg, Germany, Heidelberg, GERMANY

Keywords: Presepsin, qSOFA, Prognostication, Sepsis, Emergency Department

Abstract :**Background**

The SOFA score is associated with an increased probability of mortality in sepsis. Assessment at admission in the emergency department (ED) requires for the SOFA score additional laboratory variables which are time consuming. The Third International Consensus Definitions for Sepsis and Septic Shock defined the qSOFA, which does not require laboratory tests and can be assessed at first presentation of the patient already at admission without delay of time. The qSOFA score has been shown to be associated with an increased probability of mortality and can be used for prognostication.

Objective

To compare sepsis biomarkers with qSOFA to discriminate sepsis, severe sepsis or septic shock and to evaluate the association with increased risk of mortality in patients admitted to the ED with initial sepsis.

Methods

66 Patients admitted to the ED with signs of sepsis and ≥ 2 SIRS-criteria were included. Sepsis induced organ failure, severe sepsis and septic shock were defined according to current guidelines. The qSOFA score was calculated from respiratory rate, GCS score and systolic blood pressure using the recommended thresholds: respiratory rate ≥ 22 /min, altered mentation (GCS <15), systolic blood pressure ≤ 100 mmHg. Presepsin and procalcitonin were determined using the POC assay PATHFAST Presepsin (PSEP), LSI Medience, Japan and procalcitonin using the BRAHMS luminescence immune assay PCT. CRP and lactate were measured in the central lab with commonly used laboratory methods.

Results

qSOFA, differentiated significantly between patients with sepsis (n=30, mortality=6.6%) and the high-risk group with severe sepsis or septic shock (n=36, mortality=36.1%). Discrimination between the groups revealed AUC values of 0.621, 0.625, 0.627, 0.731, 0.740 and **0.781** for lactate, CRP, PCT, qSOFA, PSEP, and the combination **qSOFA+PSEP**, respectively.

15 patients died during hospitalization. AUC values of mortality prediction were 0.558, 0.570, 0.715, 0.734, 0.758 and **0.803** for, PCT, CRP, lactate, qSOFA, PSEP and **qSOFA+PSEP**, respectively.

qSOFA scores ≥ 2 should identify greater risk of death or prolonged ICU stay. Discrimination between qSOFA <2 and ≥ 2 revealed AUC values of 0.756, 0.669 and 0.606 for PSEP, lactate and PCT.

Using the threshold ≥ 2 of qSOFA and ≥ 500 ng/L of PSEP, the combination qSOFA+PSEP detected 14 non-survivors (93%) and 33 (92%) patients of the high-risk group (n=36), whereas qSOFA alone detected only 10 non-survivors (67%) and 21 patients of the high-risk group (58%).

Conclusion

The results demonstrated that the qSOFA score is not a standalone criterion for risk stratification in sepsis at admission. Simultaneous assessment by combining qSOFA and PSEP provided added value to assess the severity and mortality risk in patients admitted with sepsis to the emergency department. The POC assay PATHFAST Presepsin showed superior performance compared to lactate and PCT. Combining qSOFA and PSEP improved the validity significantly. These parameters could be determined already at admission without time delay as PSEP could be measured as POC assay in parallel in anticoagulated whole blood samples using the PATHFAST™ system within 16min.

#18759 : Utility of the national early warning score 2 and the quick sepsis related organ failure assessment in the emergency department**Authors:**

Raul Lopez Izquierdo (1), Carlos Del Pozo Vegas (2), Julio Cesar Santos Pastor (3), Jorge Garcia Criado (4), Francisco Martín Rodríguez (5), Laura Fabrique Millan (6), Virginia Carbajosa Rodriguez (7), Amaia Naveiro Flores (6), Irene Menéndez Muñoz (6), Ana Belen Lopez Tarazaga (2), Carlos Jaime Avellaneda Martinez (3), Pablo Del Brio Ibañez (6), Noelia Haro Mellado (4), Silvia Benito Bernal (6), Cristina Bolado Jimenez (2), Henandez Gajate Mario (7), Susana Sanchez Ramón (6), M^a Antonia Udaondo Cascante (8)

1. Emergency Department, Rio Hortega University Hospital, Valladolid, SPAIN
2. Emergency Department, Hospital Clínico Universitario de Valladolid., Valladolid, SPAIN
3. Emergency Department, Complejo Hospitalario Segovia. , Segovia, SPAIN
4. Emergency Department, Complejo Asistencial Universitario de Salamanca, Salamanca, SPAIN
5. Prehospital emergency medical service, Gerencias emergencias Sanitarias. Sacyl, Valladolid, SPAIN
6. Emergency Department, Hospital Universitario Rio Hortega. Valladolid, Valladolid, SPAIN
7. Emergency Department, Rio Hortega University Hospital, Valladolid, SPAIN
8. Radiology department, University Hospital of Burgos, Burgos, SPAIN

Keywords: Early warning score; Emergency department; Mortality; Prognosis

Abstract :

Introduction:

The triage systems in emergency department (ED) was an advance in the initial assessment of patients. In recent years different scores have been developed for the analysis of the severity of patients including the National Early Warning Score 2 (NEWS-2) and the quick sepsis related organ failure assessment (qSOFA). The main objective was to evaluate the ability NEWS-2 and qSOFA to predict thirty-day-mortality from the index event.

Methods:

Multicentric prospective observational longitudinal study of cohorts, November 7-20, 2018 (15:00-22:00 hours), January 21 and February 22, 2019 (8:00-22:00) in four Spain ED and had a triage level II, III according to the Spanish triage system (STS). It was considered that a patient fulfilled criteria to be included in the study if he had been attended by ED study and did not meet any exclusion criteria:

Results:

Number patients: 916. The median age was 71 years (IQR: 52-84), 40.8% of them were women, 93% of all presented a level III according to the STS and The 30M was 3.3% (30 cases). Univariate analysis: the 30M median age was 87 years (IQR 77-92) versus 70 years (IQR 51-83) in survivors ($p < 0.001$). 30M in male was 4.2% versus 2.4% in female ($p > 0.05$). 30M in III STS was: 2.9% and in II STS: 7.9% ($p < 0.05$). The 30M median score of NEWS2 was: 5 (IQR 3-9) versus: 2 (IQR 1-4) in survivors ($p < 0.001$) and the median score in 30M of qSOFA was: 1 (IQR 0-1) versus survivors: 0 (IQR 0-1) ($p < 0.001$). Global AUROC NEWS-2 was 0.72 (95% CI 0.63-0.82) ($p < 0.05$) and according STS was observed that in level II: AUCROC was: 0.64 (95% CI 0.47-0.82) ($p > 0.05$) while in level III it was: 0.71 (95% CI 0.60-0.82) ($p < 0.001$). Global AUROC qSOFA was 0.65 (95% CI 0.54-0.75) ($p < 0.05$) and according STS was observed that in level II: AUCROC was: 0.61 (95% CI 0.37-0.84) ($p > 0.05$) while in level III it was: 0.64 (95% CI 0.52-0.76) ($p < 0.001$). Global multivariate analysis: OR: age: 1.08 (95% CI 1.04-1.12) ($p < 0.001$), NEWS2: 1.17 (95% CI 1.05-1.31) ($p < 0.05$), qSOFA: 1.76 (95% CI: 1.04-2.96) ($p < 0.05$)

Conclusions:

The NEWS-2 is the best predicting 30-day mortality among the patients studied and is especially useful among patients with a III triage level. Both are independently associated with the mortality analyzed together with the age. The use of these score could complement the triage systems in the ED.

Trial Registration / Funding Information (only) :

The study was approved by the Research Ethics Committee of all participating centers. All patients (or guardians) signed informed consent, including consent for data sharing. This research has received support from the Gerencia Regional de Salud (SACYL) for research projects in Biomedicine, Healthcare Management and Healthcare Care, with registration number GRS 1711/A/18, principal investigator: Raúl Lopez Izquierdo, as part of the "Usefulness of the use of the early gravity scales and the lactic acid in the triage the hospital emergency services

#18762 : Usefulness of capillary lactic acid in the triage of ED.**Authors:**

Raul Lopez Izquierdo (1), Julio Cesar Santos Pastor (2), Francisco Martín Rodríguez (3), Carlos Del Pozo Vegas (4), Jorge Garcia Criado (5), Virginia Carbajosa Rodriguez (6), Tony Giancarlo Vasquez del Aguila (4), Noelia Otones Consuegra (2), Ana Belen Fraile Vicente (5), Beatriz Torre Diez (7), Alvaro Muñoz Galindo (5), Carlos Jaime Avellaneda Martinez (2), Silvia Benito Bernal (7), Pablo Del Brio Ibañez (7), Henandez Gajate Mario (6), Angela Maria Arevalo Pardo (7), Jesus Alvarez Manzanares (6)

1. Emergency Department, Río Hortega University Hospital, Valladolid, SPAIN
2. Emergency Department, Complejo Hospitalario Segovia. , Segovia, SPAIN
3. Prehospital emergency medical service, Gerencias emergencias Sanitarias. Sacyl, Valladolid, SPAIN
4. Emergency Department, Hospital Clínico Universitario de Valladolid., Valladolid, SPAIN
5. Emergency Department, Complejo Asistencial Universitario de Salamanca, Salamanca, SPAIN
6. Emergency Department, Río Hortega University Hospital, Valladolid, SPAIN
7. Emergency Department, Hospital Universitario Río Hortega. Valladolid, Valladolid, SPAIN

Keywords: lactic acid, triage, emergency department.

Abstract :

Introduction:

Point-of-care testing (POCT) represents an efficient, fast and cheap way to obtain reliable clinical data from patients in the shortest time possible, highlighting lactate acid as a prognostic biomarker. Main objective was to evaluate the usefulness of the determination of capillary lactic acid (CLA) in the triage of the emergency department (ED) to predict 30-day mortality (30M)

Methods:

Multicentric prospective observational longitudinal study, January 21 and February 22, 2019 (8:00-22:00) in four Spanish ED and had a triage level II or III according to the Spanish triage system (STS). It was considered that a patient fulfilled criteria to be included in the study if he had been attended by ED study and did not meet any exclusion criteria:

Resultados.

Number patients: 403; The median age was 71 years (IQR 52-84), 52.1% of them were women. 30M: 3.5%. Univariate analysis: the 30M median age was 85 years (IQR 78-90) versus 71 years (IQR 52-84) in survivors ($p > 0.05$). 30M in male was 5.2% versus 1.9% in female ($p > 0.05$). The 30M median SBP was 116 (RIQ 106-135) versus 133 (119-154) in survivors ($p < 0.05$), median DBP in 30M was 77 (RIQ 66-87) versus M30: 68 (RIQ 60-78) in survivors ($p < 0.05$); median HR 30M was 86 (RIQ 77-91) versus survivors: 83 (71-98) ($p > 0.05$); median OS 30M was 88 (RIQ 83-95) versus survivors: 97 (RIQ 94-98); median BR 30M was 24 (RIQ 15-30) versus survivors 20 (RIQ 16-24) ($p > 0.05$); GCS 30M 15 (11-15) versus 15 (15) in survivors ($p < 0.05$). CLA 30M: 3.60 (RIQ 1.70-4.62) versus 2.30 (1.60-3.10) ($p < 0.05$). multivariate: OR CLA: 30M: 1.46 (95% CI 1.007-2.117) The rest of the variables were not significant. AUCROC CLA: 0.692 (95% CI 0.532-0.853) ($p < 0.05$)

Discussion

Of all the variables analyzed at the arrival of the patient to ED, PCL is the only variable associated independently with 30-day mortality. On the other hand, it has a moderate 30-day mortality prediction capacity. Therefore, its use could be recommended for the initial assessment of a patient upon arrival at a ED.

Trial Registration / Funding Information (only) :

The study was approved by the Research Ethics Committee of all participating centers. All patients (or guardians) signed informed consent, including consent for data sharing. This research has received support from the Gerencia Regional de Salud (SACYL) for research projects in Biomedicine, Healthcare Management and Healthcare Care, with registration number GRS 1711/A/18, principal investigator: Raúl Lopez Izquierdo, as part of the "Usefulness of the use of the early gravity scales and the lactic acid in the triage the hospital emergency services"

#18764 : Descriptive study about using smartphone in emergency departments.**Authors:**

Ahmed Guesmi (1), Dorra Loghmari (2), Rabeb Mbarek (3), Sarra Chaouch (3), Anas Boukadida (4), Mounir Naija (4), Naoufel Chebili (4)

1. service d'aide médicale urgente (SAMU) 03 CHU sahloul sousse, CHU sahloul sousse, SOUSSE, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA

Keywords: emergency departments,smartphone,interns

Abstract :

Background: Smartphone is commonly used by the majority of healthcare professionals. It's a genuine handheld with multiple functionalities, which may be useful for emergency physicians.

The aim of the study was to describe and quantify the use of Smartphone by the interns of our Emergency Departments as a part of their medical practice.

Design: A questionnaire survey design

Methods : This is a descriptive , transversal and multicenter study realized during a period of one month (December 2017) using a questionnaire served hand to hand to the interns of Emergency Departments.

Results: We included 82 interns of the Emergency Departments with a response rate at 100%. In our population, 78% had smartphone, which mean a rate at 95%. The majority of the interns possessing a Smartphone used it at work.

The average age of our sample was 28 +/- 0.7 years old. We noted a predominance feminine with a sex-ratio at 0.36. Android was the most operating system used (64%).

The Smartphone functionalities mostly used by our interns were telephony 100%, calculator 90% and non medical applications (social media, communication application, games) in 85% of the cases.

Conclusion: the smartphone is an interesting tool to facilitate and to improve the quality of tasks management in emergency departments . However, its use should not be abusive to avoid the adverse effects.

Trial Registration / Funding Information (only) :

no funding

#18766 : Evolution of the knowledge of cardiopulmonary resuscitation in medical students.**Authors:**

Raul Lopez Izquierdo (1), Virginia Carbajosa Rodriguez (2), Juan Manuel Fernandez Dominguez (3), Eduardo Junquera Alonso (4), Carlos Del Pozo Vegas (5), M^a Antonia Udaondo Cascante (6), Carlos Garcia Calvo (7), Susana Sanchez Ramón (7), Isabel Gonzalez Manzano (7), Jose Ramón Olivás Ramos (2), Inmaculada Garcia Ruperez (7), Angela Maria Arevalo Pardo (7), Berta Tijero Rodriguez (7), Irene Cebrian Ruiz (2), Raquel Talegon Martin (7), Juan Carlos Sanchez Rodriguez (7), Rosa Maria Castellanos Florez (7), Francisco Martin Rodriguez (8)

1. Emergency Department, Río Hortega University Hospital, Valladolid, SPAIN
2. Emergency Department, Río Hortega University Hospital, Valladolid, SPAIN
3. traumatology department, Hospital de Torrecadenas. Almeria, Almeria, SPAIN
4. digestive department, Hospital de Aviles, Aviles, SPAIN
5. Emergency Department, Hospital Clínico Universitario de Valladolid., Valladolid, SPAIN
6. Radiology department, University Hospital of Burgos, Burgos, SPAIN
7. Emergency Department, Hospital Universitario Río Hortega. Valladolid, Valladolid, SPAIN
8. Prehospital emergency medical service, Gerencias emergencias Sanitarias. Sacyl, Valladolid, SPAIN

Keywords: Cardiopulmonary resuscitation; education;

Abstract :

Objectives: To know the level of knowledge, training and attitude about basic and advanced life support (BLS & ALS) in first, third and sixth year medicine students.

Material and methods: cross-sectional descriptive study based on a questionnaire. Inclusion criteria: 1st, 3rd and 6th year medicine students from the University of Valladolid, excluding those who study in Burgos, Soria and Palencia campus, who answered a self-administered questionnaire at the beginning of the 2016-2017 academic year. Variables: age, sex and answers about knowledge, attitude and skills related to Cardio Pulmonary Resuscitation (CPR). Comparison of qualitative variables: Chi-square. Significance value: $p < 0.05$. Statistical analysis: SPSS 20.0.

Results: N = 427. Women 67.4%. Median age 20. Range 27. 85.7% consider CRP as an important social-health problem. Training CPR was considered important in 93.2% cases. Level of satisfaction with the materials used so far: 1st 14.2%, 3rd 28.7% and 6th 35.5% ($p < 0.005$). Previous training in CPR: 1 40.8%, 3 72.1% and 6 98.8% ($p < 0.005$). Simulation mannequin was used: 1st 37.6%, 3rd 52.9% and 6th 98.8% ($p < 0.005$). Seven questions about BLS were asked: 1st 10.9%, 3rd 31.1% and 6th 72.3% ($p < 0.005$) responded correctly. Automated External Defibrillator AED was identified in 89.5% of total respondents. Two ALS questions were posted: 3rd 42.3% and 6th 74.4% ($p < 0.005$) rightly answered.

Conclusions: medical students show a high level of concern regarding CRP as a social health problem and the need to learn CPR techniques. Satisfaction with the materials used in training is lower in the undergraduate. The knowledge in SVB and SVA do not reach an acceptable level until reaching the 6th grade.

#18767 : Is trainee led research the future? Subarachnoid haemorrhage in emergency departments – a service evaluation of the UK trainee emergency research network**Authors:**

TERN Trainee Emergency Research Network (1), Tom Roberts (2), William Hulme (3)

1. , Royal College of Emergency Medicine UK, Bristol, UK
2. NHS, NHS, Bristol, UK
3. Statistician, University of Manchester, Manchester, UK

Keywords: Trainee network, subarachnoid haemorrhage

Abstract :**Introduction**

The UK Trainee Emergency Research Network (TERN) was established in August 2018. To understand the potential of the network, a pilot study was designed to assess the ability of TERN to collect standardised multi-centre data on subarachnoid haemorrhage (SAH). This topic was chosen after competitive review of submitted research questions by Trainees. Extensive work by Perry showed almost perfect sensitivity of CT within 6 hours in suspected SAH, the results are yet to be adopted into UK clinical practice. It has therefore been listed in the top 20 RCEM/James-Lind Alliance research priorities and adopted as a TERN study.

Methods**Design**

Sites were invited to participate via email to Trainees registered with TERN. Sites that registered interest were assessed for data collection completion and levels of data variability.

Setting

The study was conducted in twenty-two Emergency Departments (EDs) in the UK, that included a mixture of tertiary referral centres and district general hospitals. Retrospective data was collected for patients presenting with a headache between 26/11/2018 at 0000 until 02/12/2018 at 2359. Data entry was open for two months to allow for entry of final diagnosis.

Outcomes

Primary

- Assess feasibility of TERN to collect standardised multi-centre data on SAH.

Secondary

- Identify number of patients presenting to ED with headaches in a 2-week period.
- Identify number of patients who underwent CT scan within 6-hours of symptom onset.
- Identify number of SAH.

Results

29 sites registered interest in data collection. 24 (82%) sought approval from their hospitals, 2 were denied permission, which left 22 (76%) who collected data.

Data on 403 eligible patients were collected. The average number of eligible patients per hospital was 18.3 (min=5, max=53). Median age was 42 years (Q1-Q3 = 30-56 years). Overall, 68% of eligible patients were female, varying from 43 to 100% between sites.

A CT scan was performed in 161 (40%) eligible patients, with an average of 7.3 (min=2, max=15) CT scanned patients per hospital. CT scan rates varied from 19% to 100% between sites. Abnormalities were found in 20 (13%) scanned patients, with 3 confirmed SAH (1.9%).

Onset to CT duration was calculable in 105 cases, and under 6 hours for 24 of these (23%, ranging from 0 to 100% between sites). Arrival to CT duration was calculable in 154 cases and was under 6 hours in 135 of these (88%, ranging from 0 to 100% between sites).

Discussion and Conclusion

Though data quality varied between sites, this pilot study has identified possible improvements that minimise these issues including stricter data validation rules, clearer questions, and prospective data collection. Patient case-mix and treatment practices, including SAH prevalence and CT rates, should be cautiously interpreted as this pilot was not powered to accurately estimate these quantities. A future study is being developed to validate the 6-hour CT head rule based on an improved and expanded data collection process. More generally, this pilot has demonstrated that, with careful planning and execution, TERN is able to collect multi-site data of sufficient quantity and quality to conduct large-scale studies.

Trial Registration / Funding Information (only) :

Funded by the Royal College of Emergency Medicine

#18768 : The ideal urgent and emergency care system: a qualitative study of public perspectives**Authors:**

Maxine Kuczawski (1), Suzanne Ablard (1), Suzanne Mason (1)

1. ScHARR, The University of Sheffield, Sheffield, UK

Keywords: Emergency medicine, Qualitative

Abstract :Background

It is well documented that large numbers of people seek help for their healthcare needs in secondary emergency care services, such as Emergency Departments (ED) and the ambulance service, when they could have been treated much closer to home. This is putting increased strain on already overstretched and costly urgent and emergency care (UEC) services, which is unsustainable in the long term.

There is an increasing body of literature that has focused on asking patients how they use UEC services with the intention of identifying the reasons for this behaviour. Other studies have described factors that appear to influence patient satisfaction with UEC services. Whilst informative, these studies do not take into consideration what it is that patients actually want from the UEC system. As a result, services are often implemented without consulting the people who will directly benefit from them. The aim of our study was to discuss patient experiences of accessing UEC services and then identify from the patient perspective, what an ideal UEC system would look like.

Methods

Members of the public in a large English city (population >720,000) were invited to participate in focus groups using a purposeful sampling technique, between September and December 2018. To be eligible to participate, participants must have been in contact with a UEC service (ambulance, walk-in centre, ED, Minor Injuries Unit, out-of-hours GP or NHS111) within the last 12 months and stratified into at least one of the following cohorts: (1) working age (

Results

Four workshops were undertaken with 30 members of the public. Respondents were diverse representing each of the four cohorts. The ideas generated by participants centred around three themes: (1) greater communication from health professionals; (2) linked medical records to ensure consistency of care across the UEC system; (3) a more simplified UEC system which is easier to navigate and access. These ideas were directly influenced by participants past experiences of accessing UEC services, whereby they attempted to identify solutions to the problems they commonly encounter.

Conclusion

This is the first study documenting members of the public's views of what their ideal UEC system would look like. Participants agreed that services need to work more closely together to provide a more efficient and joined up service. This requires greater communication between health professionals, particularly in relation to discharging patients back into community services. Centralised medical records accessible to all services should be seen as priority. This will ensure continuity of care for patients across the whole healthcare system. Additionally, clarity around what UEC services are available locally, what health conditions are appropriate for these and how people can refer into these services are also important.

Trial Registration / Funding Information (only) :

Funding: Northern Health Science Alliance (NHS), Health North Connected Health Cities project Ethics approval (REC) reference: 18/NS/0076 Study sponsor: Sheffield Teaching Hospitals NHS Foundation Trust

#18769 : Clinical prediction to target new biomarkers in febrile children at the ED, a European observational study**Authors:**

Nienke Hagedoorn (1), Dorine Borensztajn (2), Ian Maconochie (3), Ruud Nijman (3), Federico Martinon-Torres (4), Jethro Herberg (3), Enitan Carrol (5), Emma Lim (6), Maria Tsolia (7), Marieke Emonts (6), Ronald de Groot (8), Michiel van der Flier (8), Werner Zenz (9), Benno Kohlmaier (9), Franc Strle (10), Marko Pokorn (10), Dace Zavadska (11), Ulrich von Both (12), Clementien Vermont (13), Shunmay Yeung (14), Michael Levin (3), Henriëtte Moll (1)

1. Department of Paediatrics, Erasmus MC - Sophia children's hospital, Rotterdam, THE NETHERLANDS
2. General Paediatrics, Erasmus MC-Sophia Children's hospital, Rotterdam, THE NETHERLANDS
3. Section of Paediatrics, Imperial College of Science, Technology and Medicine, London, UK
4. Genetics, Vaccines, Infections and Pediatrics research groups (GENVIP), Hospital Clinico Universitario de Santiago de Compostela, Santiago de Compostela, SPAIN
5. Institute of infection and global health, University of Liverpool, Liverpool, UK
6. Paediatric Immunology, Infectious Diseases & Allergy, Great North Children's Hospital, Newcastle upon Tyne, UK
7. Second department of Paediatrics, National and Kapodistrian University of Athens, Athens, GREECE
8. Pediatrics, Radboudumc, Nijmegen, THE NETHERLANDS
9. General Paediatrics, Medical University of Graz, Graz, AUSTRIA
10. Infectious diseases, University Medical Centre Ljubljana, Ljubljana, SLOVENIA
11. Pediatrics, Rigas Stradina universitate, Riga, LATVIA
12. Pediatrics, Dr. von Hauner Children's Hospital, Munich, GERMANY
13. Pediatric infectious diseases & immunology, Erasmus MC-Sophia Children's hospital, Rotterdam, THE NETHERLANDS
14. Tropical and infectious disease, London School of Hygiene and Tropical Medicine, London, UK

Keywords: pediatrics, clinical prediction, biomarker, sepsis, meningitis

Abstract :

Background: Early detection and treatment of invasive bacterial infections reduces morbidity and mortality. Distinguishing between invasive bacterial and self-limiting viral infections solely based on clinical signs and symptoms is unreliable. Therefore, overtreatment with antibiotics in febrile illnesses is common. In Europe, antibiotic prescription rates for febrile illness vary from 19% to 64%.

Aim: To externally validate and update a clinical prediction model to identify invasive bacterial infections and define risk thresholds where new biomarkers could improve accurate diagnosis.

Methods: Data of febrile children <18 years attending 12 European EDs were collected between January 2017-April 2018. The main outcome measure was invasive bacterial infection (IBI) defined as bacteremia, sepsis or bacterial meningitis. For this analysis, we excluded children without C-reactive protein (CRP) measurement and children with urinary tract infection. We externally validated and updated an existing clinical prediction model (Feverkidstool which includes vital signs, clinical symptoms and CRP) and extended the model by including level of consciousness. We determined the discriminative value by the C-statistic and assessed the predictive performance (sensitivity, specificity, negative and positive likelihood ratios) at different thresholds.

Results: 16,225 patients were included (median age 2.8 years (IQR 1.4-6.0), 29% ill appearing) of whom 155 had an IBI. The discriminative ability of IBI versus no IBI was moderate for the original model (0.73 (95% CI 0.69-0.77) and improved in the updated model with consciousness (0.79 (95% CI 0.75-0.83)). The updated model for IBI performed well for the low-risk threshold of 2.5% (sensitivity 0.93 (95% CI 0.86-0.97), negative likelihood ratio 0.39 (95% CI 0.2-0.8)) and was moderate for the high-risk threshold of 30% (specificity 0.88 (95% CI 0.87-0.89), positive likelihood ratio 3.5 (95% CI 2.7-4.6)). The intermediate thresholds of 5-30% performed poorly (ranges: sensitivity 0.58-0.85, negative likelihood ratio 0.46-0.59, specificity 0.33-0.71, positive likelihood ratio 1.26-1.99).

Conclusion: The low-risk threshold of the updated clinical prediction model is useful to rule-out patients with IBI at the ED. The intermediate and high-risk thresholds are lacking excellent rule-in value for IBI to target treatment. The number of unnecessary treated patients could potentially be reduced by addition of other new sensitive biomarkers.

Trial Registration / Funding Information (only) :

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 668303. On behalf of the PERFORM consortium (Personalised Risk assessment in febrile children to optimise Real-life Management across the European Union).

#18770 : Utility of the qSOFA and qSOFA-Lactic in the analysis of the mortality of patients with infectious disease in the emergency room.

Authors:

Raul Lopez Izquierdo (1), Jorge Garcia Criado (2), Julio Cesar Santos Pastor (3), Carlos Del Pozo Vegas (4), Francisco Martin Rodriguez (5), Laura Fadrique Millan (6), Raquel Ordas Linacero (6), Virginia Carbajosa Rodriguez (6), Ana Isabel Valderrey Mielgo (4), Raquel Pedrero Alonso (7), Raquel Cristobal de la Cruz (3), Teresa Martin Marcos (6), Hilda Fernandez Ovalle (4), Alicia Martin Aires (2), Hernandez Gajate Mario (6), Ana Belen Lopez Tarazaga (4), Jesus Alvarez Manzanares (6)

1. Emergency Department, Rio Hortega University Hospital, Valladolid, SPAIN
2. Emergency Department, Complejo Asistencial Universitario de Salamanca, Salamanca, SPAIN
3. Emergency Department, Complejo Hospitalario Segovia, Segovia, SPAIN
4. Emergency Department, Hospital Clínico Universitario de Valladolid, Valladolid, SPAIN
5. Prehospital emergency medical service, Gerencias emergencias Sanitarias. Sacyl, Valladolid, SPAIN
6. Emergency Department, Rio Hortega University Hospital, Valladolid, SPAIN
7. Emergency Department, Complejo Asistencial Universitario de Salamanca, Valladolid, SPAIN

Keywords: Emergency department; infección de origen; acid lactic, mortality.

Abstract :**Introduction:**

Mortality risk of infectious diseases in Emergency Room (ER) might be estimated by quick sequential organ failure assessment (qSOFA) scale and lactate acid levels. Point-of-care testing (POCT) represents an efficient, fast and cheap way to obtain reliable clinical data from patients in the shortest time possible, highlighting lactate acid as a prognostic biomarker. Main objective was to evaluate the usefulness of the determination of qSOFA, capillary lactic acid (CLA) and qSOFA, CLA (qSOFA-L) in the triage of the emergency Room (ER) to predict 30-day mortality (30M) and hospitalization in patients with infectious diseases.

Material and methods:

Multicentric prospective observational longitudinal study, from January the 21st to February the 22nd 2019. Time slot 8:00 to 22:00 in four Spanish Hospitals. Population: patients with documented infectious diseases or suspected infectious diseases seen in ER. Exclusion criteria: <18y, no authorized by written informed consent. Demographic variables and qSOFA scale score were determined at patient's arrival. CLA values were obtained with the Accutrend Plus measuring device (Roche Diagnostics, Mannheim, Germany). Then qSOFA-L score was calculated by adding CLA value (mmol/L) to the qSOFA score. The main dependent variable was mortality from any cause before the first 30 days from the index event (30M). Secondary, Hospital admission was also considered as a prognostic variable. Mortality data were obtained by reviewing the patient's electronic history at 31 days before attention. The area under the curve (AUC) of the receiver operating characteristic (ROC) (95% CI) of CLA was calculated to both dependent variables. Univariate and multivariate Study were calculated. Software: SPSS 23.00. $p < 0.05$.

Results:

N = 135, female 57%, median age 74 (IQR 54-84). 30M: 4.4%. Hospital admission: 37.0%. qSOFA: 2-3: 9.6%. 30M median age: 81 (IQR 73-91) vs 72 (IQR 52-84) ($p > 0.05$); 30M male: 8.6% vs 1.3% female ($p < 0.05$); 30M qSOFA: 2-3: 7.1% vs 4.1% in qSOFA 0-1 ($p > 0.05$). 30M CLA: 3.90 (IQR 1.52-5.07) vs 2.2 (IQR 1.50-3.20) in survivors ($p > 0.05$); 30M median qSOFA-L: 4.60 (IQR 2.52-6.52) vs 2.90 (IQR 1.80-3.90) ($p < 0.05$). Hospital admission median age: 78 (IQR 67-88) versus 70 (48-82) in ER discharge ($p < 0.05$); Hospital admission male: 43.1% vs 32.5% female ($p > 0.05$) Hospital admission qSOFA 0-1: 32.8% vs qSOFA 2-3: 76.9% in ER discharge ($p < 0.05$). Hospital admission CLA: 2.40 (IQR 1.70-3.35) versus 2.0 (IQR 1.40-3.20) in ER discharge ($p > 0.05$); Hospital admission median qSOFA-L: 3.40 (IQR 2.57-4.60) versus 2.6 (IQR 1.70-3.45) in ER discharge ($p < 0.05$). Multivariate analysis 30M: Gender ($p > 0.05$), qSOFA-L: OR: 1.77 (1.04-3.00) ($p < 0.05$). Hospital admission: qSOFA: 2-3 ($p > 0.05$); qSOFA-L ($p > 0.05$); Age: OR: 1.025 (95% CI 1.004-1.047). AUCROC 30M: qSOFA: 0.65 (95% CI 0.45-0.85) ($p > 0.05$), CLA: 0.71 (95% CI 0.42-0.99) ($p > 0.05$), qSOFA-L: 0.74 (0.52-0.96) ($p < 0.05$). AUROC Hospital admission: qSOFA: 0.63 (95% CI 0.53-0.73) ($p < 0.05$), CLA: 0.59 (95% CI 0.49-0.69), qSOFA-L: 0.65 (95% CI 0.55-0.74) ($p < 0.05$).

Conclusions:

qSOFA-L scale is an independent risk factor with 30day mortality. Determination of the combined scale qSOFA plus CLA levels might be useful as a prognostic tool in patients with infectious diseases in ER

Trial Registration / Funding Information (only) :

The study was approved by the Research Ethics Committee of all participating centers. All patients (or guardians) signed informed consent, including consent for data sharing. This research has received support from the Gerencia Regional de Salud (SACYL) for research projects in Biomedicine, Healthcare Management and Healthcare Care, with registration number GRS 1711/A/18, principal investigator: Raúl Lopez Izquierdo, as part of the "Usefulness of the use of the early gravity scales and the lactic acid in the triage the hospital emergency services"

#18771 : The Impact of Clinical Supervision Shifts on the Resident Supervision Index in the Emergency Department of Qatar**Authors:**

Ayman Hereiz (1), Khalid Bashir (2), Saleem Farook (2), Mohamed Ahmed Seif Mohamed (1), Thomas Prof. Stephen (2)

1. Emergency Medicine, Hamad Medical Corporation, Doha, QATAR

2. , Hamad Medical Corporation, Doha, QATAR

Keywords: emergency department, clinical supervision, residents supervision index,

Abstract :

Background: Clinical supervision (CS) is an important foundational requirement to maximize education and assure patient safety. The resident supervision index (RSI) has been proposed as a validated tool in GME programs in the United States to measure the quality of CS. CS in a busy emergency department (ED) setting can be challenging due to the demands of clinical service.

Aim/Objectives: The Impact of Clinical Supervision Shifts on the RSI in the ED

Method: We implemented special four hours shifts to commit faculty time for CS and measured its impact on the RSI. The study was done in a busy academic ED in Qatar with an annual patient attendance of around 450,000 and staffed by around 240 emergency medicine (EM) physicians including 48 residents and 58 fellows.

Results: A total of 336 responses of individual CS encounters were collected over a period of 8 months of CS shifts. The CS encounters were a mix of case discussion, review of test results, supervision of clinical procedures, WBAs and Ultrasound. The faculty was fully involved in patient care in 20.8% of encounters, partially involved in 46.4% and offered advice in 25.6%. The CS contributed to the understanding of the case by the supervisee in 94.0%. The CS resulted in significant impact on all aspects of the RSI – changes were noted in history in 12.2%, examination findings in 14.4%, interpretation of diagnostic data in 23.1%, diagnosis in 13.6%, overall assessment in 21.6% and in the management plan in 35.1%.

Discussion: Unlike other instruments to assess the quality of supervision, RSI provides quantitative measures of resident supervision. Better supervision will help residents to become skilled physicians and will also help the importantly in patient care.

Conclusion:

CS shifts in a busy ED resulted in a significant overall impact on the RSI and have the potential to offer major benefits to the educational experience of learners and to patient safety.

Further studies are recommended to assess the use of RSI to assess outcomes of educational programs on patient's outcomes

#18772 : CUREd: Creating a research database to improve urgent and emergency care system research

Authors:

Maxine Kuczawski (1), Tony Stone (1), Suzanne Mason (1)

1. ScHARR, The University of Sheffield, Sheffield, UK

Keywords: Emergency medicine; Data

Abstract :Background

Urgent and emergency care (UEC) provide substantial health benefit across the world but increasing demand is leading to unsustainable pressure on services and need for health care funding. Failure of the UEC system to manage increasing demand causes substantial public concern and political impact. Delays in ambulance response or emergency department (ED) assessment can lead to worse outcomes. ED crowding is internationally recognised and may be associated with avoidable mortality. Understanding the system and how patients use it is key to developing appropriate patient-focused interventions that can lead to a sustainable, safe and cost-effective system of care. Individual provider data exists but there has been no attempt to link data across different providers in the UK to show patient flow through the whole system. This research aims to create a linked dataset which maps the use of the UEC system on a patient-level.

Methods

Approval was granted from the United Kingdom Health Research Authority and Confidential Advisory Group to obtain patient identifiable data to create a linked UEC research database. Routinely collected data was supplied from all UEC providers in one English region (population of 5.45 million people) including NHS111, ambulance service and 19 acute hospital NHS trusts (ED and inpatient admissions) for a 6 year period (2011-2017). Using patient identifiers, a data linking methodology was developed and processes established to enable researchers access to pseudonymised data extracts.

Results

Following a development period of 20 months, we successfully created CUREd, a large (>15 million patient episodes) and unique research database containing linked UEC patient-level data for the Yorkshire and Humber region. Linkage was undertaken using deterministic and probabilistic matching of patient name, address, date of birth and NHS number. CUREd allows a detailed picture of the characteristics of demand in the UEC system to be built, in order to understand how the system is used from the point of contact (such as a call to the ambulance service/NHS111) through to different parts of the system (ED and inpatient admission). This valuable resource can be accessed by researchers to support audit and research, and has already been utilised to understand UEC service use to identify avoidable use of the UEC system, of children born to Roma mothers, outcomes of care home residents, and improve outcomes for older people.

Conclusion

CUREd represents the largest resource of clinical and demographic data for the UEC system in the United Kingdom. In a healthcare system where individual services are not routinely linked, these data can be used to advance the understanding of how the UEC system is utilised by patients: the multiple contacts, re-attendances, re-admissions and the impact of these on patients and the health service. Building a basic understanding of utilisation can then help identify areas for potential improvement.

Trial Registration / Funding Information (only) :

Funding: Northern Health Science Alliance (NHS), Health North Connected Health Cities project Ethics approval (REC) reference: 18/YH/0234 Ethics approval (CAG) reference: 18/CAG/0126 Study sponsor: The University of Sheffield

#18774 : Pulmonary Embolism Probability Score (PEPS): derivation and validation of a new probability score in pulmonary embolism suspicion allowing safely reduction of imaging testing.**Authors:**

Boris Germeau (1), Emilie Friou (2), Pierre-Marie Roy (3), Jeffrey Kline (4), Andrea Penaloza (1)

1. Département de Médecine d'Urgence, Cliniques Universitaires Saint-Luc, Brussels, BELGIUM
2. Département de Médecine d'Urgence, Centre Hospitalier Universitaire d'Angers, Angers, FRANCE
3. Département de Médecine d'Urgence, CHU Angers, Institut MITOVASC (UMR CNRS 6015 - INSERM 1083), UFR santé, Angers, FRANCE
4. Department of Emergency Medicine, Indiana University School of Medicine, Indianapolis, USA

Keywords: Pulmonary embolism, probability score, diagnostic strategies, clinical probability, D-dimer, imaging tests

Abstract :**Introduction:**

For patients suspected of pulmonary embolism (PE), several strategies have been developed to limit the use of imaging tests and especially CT-Scan (PERC, YEARS, ADJUST-PE ...) and are based on clinical data and threshold values of D-dimers. Each of these strategies is based on a different method of assessing the clinical probability (CP) that limits their combination.

Objective:

Our goal is to derive and validate a single clinical probability score allowing optimization of clinical data and D-dimer measurement and safely reduction of imaging testing.

Methods:

Based on the negative likelihood ratios of D-dimers, four levels of clinical probability were previously defined in order to obtain a strategy with a false negative rate < 1.9%: [1] without D-dimer test (very low CP, false negative <1.9%), [2] with D-dimer <1000 $\mu\text{g/L}$ (low CP, false negative <15%), [3] with D-dimer <500 $\mu\text{g/L}$ or < (age x10) after 50 years (moderate CP, false negative <60%), [4] and a last level (high CP) that can not safely exclude pulmonary embolism on the basis of clinical data and D-dimers.

A derivation and an internal validation cohorts were obtained from four European and American prospective studies, including 11.066 patients suspected of PE. An external validation cohort was obtained from a fifth prospective study of 1744 patients.

Statistically significant variables associated with PE in univariate analysis were included in a multivariate logistic regression model. Points were assigned according to the regression coefficients, constituting the PEPS score. The score was validated in the internal and external validation.

Results:

The score include 13 variables : age <50 years (-2), age between 50-64 years (-1), heart rate <80beats/min (-1), chronic respiratory pathology (-1), chest pain and recent dyspnea (+1), male (+2), syncope (+2), thromboembolic history (+2), immobilization (+2), estrogen therapy (+2), SpO2 <95% (+3), calf pain (+3), and PE is the most likely diagnosis (+5).

A score <0 corresponds to a very low CP, between 0 and 4 to a low CP, between 5 and 11 to a moderate CP and ≥ 12 to a high CP.

In external validation, the prevalence of PE was 11.7% (95% CI: 10.3-13.4) and, for each category, it was respectively 1.4% (0.6-3.3), 7.2 % (5.7-9.1), 24.9% (21-29.2) and 51.1% (37-65).

The application of the PEPS strategy in the external validation cohort would have resulted in a false negative rate of 0.85% (0.5-1.5) and 21.4% (19.4-23.5) D-dimer tests reduction and 26.6% (23.5-29.9) imaging testing reductions.

We compare previous strategies applied to our external cohort and observed a reduction of imaging tests by 20.8% (18-23.9) for YEARS, 7.8% (6.1-9.9) for PERC, 6.2% (4.7-8.1) for ADJUST-PE, 4.3% (21.4-27.5) for PERC combined to YEARS, 13% (10.8-15.6) to PERC combined to ADJUST-PE.

Conclusion :

The strategy based on the PEPS score may lead to a safely substantial reduction of imaging testing comparatively to previous strategies. It should now be tested in an outcome interventional study.

#18775 : Heated humidified high-flow nasal cannula therapy for children with severe bacterial pneumonia in the emergency department**Authors:**

Ali Yurtseven (1), Caner Turan (1), Eren Erseven (2), Eylem Ulas Saz (1)

1. PEDIATRIC EMERGENCY MEDICINE , EGE UNIVERSITY SCHOOL OF MEDICINE , Izmir, TURKEY
2. Pediatric emergency medicine, Ege University School of Medicine, Izmir, TURKEY

Keywords: Emergency department, Pediatrics, High-flow nasal cannula, Pneumonia

Abstract :

Objective: The provision of appropriate respiratory support has a great role in outcome of patients presenting to the emergency department (ED) with respiratory distress associated with severe pneumonia. In recent years, heated humidified high-flow nasal cannula (HHHFNC) therapy has become one of the most popular non-invasive respiratory support modality in all pediatric settings. In this study, we aimed to assess whether the use of HHHFNC therapy is associated with reduced respiratory distress among children with severe bacterial pneumonia (SBP) presenting to the ED.

Study design: We performed a prospective observational study of patients with SBP admitted to a tertiary children's hospital pediatric ED and received HHHFNC therapy within 2 years study period. The primary outcome was admitted as treatment failure, which was defined as a clinical escalation in respiratory status. Secondary outcomes covered a decrease of respiratory rate (RR), heart rate (HR), the clinical respiratory score (CRS), rise of peripheral capillary oxygen saturation (SpO₂) and rates of weaning, intubation and intensive care unit (ICU) admission.

Results: Fifty-six patients were included in the analyses. The mean age was $45,3 \pm 21.2$ (2-168) months, and 55.4% (n=31) was male. Treatment failure was 21.5% (12/56). Among this patients, 9 (16%) were intubated and 3 (5.5%) placed on bilevel positive airway pressure. The mean initial CRS and RR values were significantly higher in non-responders group than the responder group ($p=0.039$ and $p=0.027$). Significant variation in the rate of intubation and ICU admission was not determined. At the 2nd hour, the falling down of the CRS ($p<0.001$), RR ($p<0.001$), HR ($p<0.001$), and the increase of SpO₂ ($p<0.001$) were significantly more evident when compared with the beginning.

Conclusion: HHHFNC therapy reached treatment success in majority of the patients with SBP and provided an earlier effect. Patients with more severe respiratory distress responded less to HHHFNC. Further larger studies are needed to assess the impact of HHHFNC compared with other possible therapies.

Authors:

Álvaro Martín Pérez (1), Rosario Peinado Clemens (2), Concepción de Vera Guillen (2), Juan M Fernández Núñez (3), Milagros Lucas Gutierrez (1)

1. Servicio de Urgencias. Complejo Hospitalario Universitario de Badajoz, Servicio Extremeño de Salud, Badajoz, SPAIN
2. Infanta Crisitina Hospital. Emergency Department, Servicio Extremño de Salud, Badajoz, SPAIN
3. Infanta Cristina Hospital. Emergency Department., Servicio Extremeño de Salud, BADAJOZ, SPAIN

Keywords: CARDIOPULMONARY RESUSCITATION, HEALTH STAFF, CPR TRAINING

Abstract :

Introduction

Knowledge of Basic Life Support (BLS) techniques generates an undisputed benefit by improving survival prognosis in any CPR case, provided that BLS measures are initiated within the first 4 minutes of the CPR, and the comprehensive emergency system included within the "Chain of Survival" is implemented. International experience has shown that learning the instrumental management of the airway by the "first responders" is useful for increasing survival rates. For early defibrillation to be possible, knowledge about the use of semi-automatic defibrillation needs to be widely disseminated among staff in different health units.

Objectives

To know the degree of knowledge in Cardiopulmonary Resuscitation (CPR) among the health personnel of 10 urban and rural health centers prior to the realization of a plan of formación in the form of workshops of eminently practical content.

Method

Prior to the workshop, 120 surveys were distributed among the participants consisting of 20 questions with 2 or 3 answers in Likert format referring to demographic data (profession, age and sex) and different aspects of basic resuscitation techniques with instrumental support and drugs. The surveys were analyzed with the SPSS version 20 database.

Results

The response rate was 100%. The degree of knowledge of the different techniques is shown in the tables provided, although in general terms, a knowledge deficit is detected in all the techniques analysed, which increases as the complexity of these techniques increases. This is despite the fact that 94.9% of the professionals admit to having received a course in CPR and 89.8% are aware of the ABCDE alert system.

Conclusions

The level of knowledge in cardiopulmonary resuscitation techniques demonstrated in this study by health professionals working in Primary Care is scarce, which makes it very necessary for health authorities to implement training programmes if we want to improve the response of these professionals to cardiac arrests in the hospital setting.

#18777 : Direct Oral Anticoagulants treatment and minor head injury: risk of early, delayed bleeding and severity of injuries compared to Vitamin K Antagonists**Authors:**

Gianni Turcato (1), Massimo Zannoni (2), Arian Zaboli (1), Andrea Tenci (3), Norbert Pfeifer (1), Antonio Maccagnani (4), Antonio Bonora (2), Giorgio Ricci (2)

1. Emergency Department, Ospedale Franz Tappeiner Merano, Merano, ITALY
2. Emergency and Intensive Care Department, University Hospital of Verona, Italy, Verona, ITALY
3. Emergency Department, Ospedale Girolamo Fracastoro, San Bonifacio, ITALY
4. Emergency Department, Azienda Ospedaliera Universitaria Integrata, Verona, ITALY

Keywords: Direct Oral Anticoagulants; minor head injury; delayed bleeding; Vitamin K Antagonists;

Abstract :

Background: Direct Oral Anticoagulants (DOACs) are one of the novel treatments in clinical practice in decades. These drugs been proved to have analogue efficacy in thromboembolic prevention compared to Vitamin K Antagonist (VKAs) and have set doses with no requirement of require regular international normalisation ratio blood test monitoring. Those characteristics contributed to a rapid spread of DOACs in clinical practice. considering them a valid alternative to VKAs in patients requiring anticoagulation

Objective: to evaluate the differences in the risk of developing early, delayed as well global bleeding after a minor head injury among patients treated with DOACs compared to those treated with VKAs.

Methods: We performed a retrospective observational study on patient admitted to our Emergency Department from Jun 1st, 2017 to Aug 31st, 2018 due to a MTBI. All patients with a GCS score of 13-15, regardless of the presence of loss of consciousness (LOC) or amnesia immediately after the injury, were included in the study. All patients in AOT accessing to the ED receive an immediate CT brain scan (T0) and a second CT scan after 24 hours (T1) with a clinical observation period between the two exams before discharge from the ED. All the patients were then followed for the next 30 days for late ICH (T2) after discharge.

Results: during study period we enrolled 451 patients, 268 VKAs versus 183 DOACs. We did not observe significant differences in basal characteristics between the two groups of patients (DOACs vs. VKAs). 7.7% (14/183) of patients in DOACs presented an overall intracranial bleeding against 14.9 (40/268) of those receiving VKAs ($p=0.026$), while immediate bleeding was present in 5.5% (10/183) of patients in DOACs against 11.6% (31/268) of AVK patients ($p=0.030$). No difference was found in delayed bleeding (3.8 versus 2.3, $p=0.570$). No difference was showed between DOACs and AVK groups in neurosurgical treatment. Finally, none of the patients discharged at home after with negative CT scan after 24 hours ED observation presented ICH during the following 30 days.

The univariate analysis showed to be factors associated with a risk of global intracranial bleeding: AVK treatment, a high impact trauma, post-traumatic amnesi, loss of consciousness, a GCS lower than 15, presence of cranial fracture and a trauma beyond the clavicles. When subsequent multivariate analysis was performed, the risk factors confirmed as independent predictors of risk for a global intracranial haemorrhage in patients with an anticoagulant therapy were: AVK therapy (OR 2.327, $p=0.024$), high energy trauma (OR 11.229, $p<0.001$), amnesia (OR 2.814, $p=0.017$), loss of consciousness (OR 5.286, $p=0.037$), a GCS lower than 15 (OR 4.719, $p=0.001$) and the presence of an objectively lesion above the clavicles (OR 2.742, $p=0.008$).

Conclusion: patients treated with DOACs seem to present a lower risk of post-traumatic bleeding compared to patients treated with AVKs. Delayed bleeding, although not negligible, does not appear to aggravate the outcome of patients.

#18779 : Needs Assessment for a Pediatric Emergency Medicine Application**Authors:**

Alvin Chin (1), Chris Skappak (1), Shannon Theune (1), Rahim Valani (2)

1. Resident Physician, McMaster University, Hamilton, CANADA
2. Associate Prof of Medicine, University of Toronto, Toronto, CANADA

Keywords: Digital, Mobile Application, Paediatric Emergency Medicine

Abstract :

Background: Smartphone applications (apps) have been increasingly utilized by physicians as a tool to supplement and support clinical practice. Barriers to utilization include cost of purchasing the app, user friendliness, lack of specific content, and timeliness of software / content updates. Pediatric Emergency Medicine (PEM) is a specialty that could benefit from a customized mobile app, given nuances in clinical management such as medication dosing or unique age-specific pathology. The purpose of this study was to understand the needs of post-graduate learners as it relates to PEM resources to aid in clinical practice.

Methods: This was a prospective study, and institutional Research Ethics Board approval was obtained. The survey was sent out to all current Emergency Medicine and Pediatrics residents at McMaster University, Canada. Survey questions were related to type of residency, year of training, smartphone and app utilization, and desired content for a new app. For the desired content, participants were requested to list their top 5 items and the responses were then grouped using a theme analysis.

Results: A total of 35 responses were received (33.7% response rate). 31.4% were from Pediatrics residents, with the remainder from Emergency Medicine. Eighty percent of respondents used Apple's iOS as their mobile operating system with the remainder using Google's Android. The top three most commonly used apps were UpToDate (51.4%), MDCalc (42.9%), and Spectrum (22.9%). Spectrum and MDCalc are both free applications available on both platforms, while UpToDate is only offered by paid subscription (whether individually or through an institution). From the desired topics, the top five themes were related to medication dosing (71.4%), appropriate antibiotic choices (65.7%), treatment algorithms (25.7%), electrocardiogram (ECG) references (22.9%) and vital sign reference ranges (22.9%).

Conclusion: While there is an abundance of clinical resources available to trainees, mobile apps are a great resource for just-in-time reference. This study provides a starting point to identify what trainees are looking for in an app that is specific to PEM, and can be used to either build a new app or add to an existing one. Further studies would be helpful in understanding the actual utilization of such a resource.

#18783 : Evaluation of Rehydration Effectiveness and Adverse Effects in Pediatric Emergency Room**Authors:**

Ruta Ceidaite (1), Vaidotas Gurskis (2), Algirdas Dagys (2), Gitana Bykova (2)

1. Medical Academy, Lithuanian University of Health Sciences, Kaunas, LITHUANIA

2. Pediatric Department, Hospital of Lithuanian University of Health Sciences Kauno Klinikos, Kaunas, LITHUANIA

Keywords: Dehydration, Rehydration, Fluid therapy, PED, PER, Pediatrics, Children

Abstract :

Introduction: Due to their physiology children are very prone to get dehydrated and that makes rehydration one of the most common procedures in Pediatric Emergency Room (PER). Various types of rehydration methods are available but their popularity, effectiveness, and caused adverse effects can be different.

Aim: To evaluate the effectiveness and adverse effects of rehydration (RH) in PER.

Methods: Retrospective observational study involving 50 children treated with RH therapy in PER of Lithuanian University of Health Sciences Hospital Kaunas Clinics in July of 2018 was conducted. Statistical analysis of data was performed and variables were compared between RH methods and different levels of DH.

Results: DH was documented for 23 patients, degree was assigned to 10: first degree (I°) n=1, first-second degree (I-II°) n=2, second degree (II°) n=7. Most common cause of DH was fever (58%). Oral rehydration (OR) was used for 2, intravenous rehydration (IR) for 49 patients with isotonic sodium chloride solution (ISS) as initial solution. "Standard" solution (STS) was used as supporting treatment for 25 children. ISS infusion speed was higher for patients with documented DH (3,02 and 2,12 hourly fluid requirement (HFR), p<0,05) and differed among degrees of DH: I-II° 1,62 HFR, II° 3,87 HFR, p<0,05. Infusion of STS was slower for children with fever >37,8° C compared to patients who was not feverish (1,14 and 1,41 HFR, p<0,05). There were 10 hospitalised patients (20%) with no connection to RH. Observed complications: 1 accidental removal of catheter, 1 infiltration in the site of catheter, 11 cases of facial edema. Both solutions were used 81,8% of facial edema cases, p<0,05. Facial edema was associated with more voluminous RH with STS (611 and 500 ml, p<0,05), and faster infusion (speed of ISS 3,3 and 2,34 HFR, speed of STS 1,5 and 1,28 HFR, speed of boths solutions 2,1 ir 1,65 HFR p<0,05). OR failed for one patient.

Conclusions: Most of the cases degree of DH was not assessed but II° was most frequent. Main cause of dehydration was fever. Intravenous fluid therapy with ISS was preferred over OR (2 cases of use). The RH with ISS was faster for patients with documented DH, speed of infusion increased proportionally to degree of DH; infusion of STS was slower for patients with fever. In study period 20% of patients were hospitalised; most common complication of RH was facial edema which was associated with the use of both solutions, more voluminous infusion of ISS and higher speed of infusions; OR failed for one patient.

Recommendations: Dehydration degree should be assigned to all dehydrated patients, in cases of mild dehydration oral rehydration should be used, and infusion speed should be lowered to avoid facial edema.

#18786 : Telemedical systems for acute coronary syndrome management in Republic of Moldova**Authors:**

Victoria Melnicov (1), Gheorghe Ciobanu (2)

1. Emergency Department, State University of Medicine and Pharmacy , Chisinau, MOLDOVA, REPUBLIC OF
2. State University of Medicine and Pharmacy , Emergency Department , Chisinau , MOLDOVA, REPUBLIC OF

Keywords: acute coronary syndrome, telemedicine, chest pain, ECG

Abstract :

The transmission of electrocardiogram (ECG) from ambulance to a centre for analysis is already a routine in the approach of acute coronary syndrome (ACS). Telemedical technologies provide the remote expert support and interpretation of electrocardiography recordings via telephone transmission, helping to predict ACS in patients with chest pain at home.

Republic of Moldova is a small country and the health system is distributed geographically. Emergency stations and ambulance teams, first and second level hospitals are scattered through the country, while specialized centers, third level hospitals are mostly located in the capital Chisinau. The decision to admit a patient to a coronary care center for ACS has serious medical and financial consequences.

In patients with ACS, the time interval from symptoms onset to reperfusion is a critical determinant of the clinical outcome of primary percutaneous coronary intervention (PPCI). Early diagnosis and pre-hospital care of patients with ACS is crucial in survival.

This study was conducted to investigate telemedical technologies implementation in emergency medical assistance on national level for distal consultation and monitoring in patients with ACS.

The project is a research study designed to determine the importance of new distance-applied technologies in medicine to patients with acute coronary syndrome along with current methods of laboratory and instrumental diagnosis. A retrospective analysis of patient investigation results presenting with acute retrosternal pain was conducted.

Study has shown that quality of healthcare services delivered via telemedicine is at least equal with the traditional in-person consultation.

Highlighting the favorable aspects of telemedicine consultation in establishing the diagnosis of acute coronary syndrome in the Republic of Moldova and analyzing the data generated by the use of telemedicine services identified time management facilitation, therapeutic guidance, treatment optimization through guidelines, missed diagnoses and hospitalizations reduced number. In addition, offers access to specialized care services for rural areas and coordination of visits to specialized hospitals.

Physician ECG interpretation through telemedical systems can contribute to lower rates of false-positive and false-negative ACS diagnosis and guide selection of the treatment and transportation details. Prehospital ECG transmission systems are also useful for risk stratification and triage for patients with suspected cardiovascular emergency and presenting atypical symptoms.

In addition to enabling better and more extended health services, the implementation of telemedical systems were shown to substantially reduce health care costs, travel time, number of hospital admissions and increase of clinical efficiency through better management of ACS.

#18789 : Femur neck fractures from low-energy fall injury in emergency department : Special considerations in the middle-to-oldest-old patient**Authors:**

Han Sung Choi (1), Seo Kyong Lee (2), Hoon Pyo Hong (1)

1. , Kyung Hee University Hospital, Seoul, KOREA

2. , Rogen Hospital, Dongducheon, KOREA

Keywords: femur neck fracture, low-energy fall injury, middle-to-oldest old age

Abstract :

Background: Femur neck fractures is the most common fractures associated with low-energy fall injury in the elderly. A better understanding of femur neck fractures from low-energy falls in oldest-old person is thus of increasing national and global importance. We therefore aimed to investigate the characteristic differences of femur neck fractures between middle-to-oldest-old and young-old or young adult patients who visit the emergency department (ED) due to low-energy fall injury.

Methods: This was a single-center retrospective study. The medical records of femur neck fractures patients from the ED after low-energy falls that occurred between January 2016 and December 2018 were analyzed. Patients were divided into an older adult group (aged ≥ 65 years) and a young adult group (aged 18-64 years); the older adult group was subdivided into an middle-to-oldest-old (aged ≥ 75 years) group and a young-old (aged 65-74 years) group.

Results: Of the 1486 low-energy fall injured patients, 154 (10.4%) had femur neck fracture. The underlying diseases (such as DM, HTN, dementia, osteoporosis, Parkinson disease, malignancy, cerebrovascular accident, neuropathy, vestibular dysfunction) and femur neck fractures were more in older adult group ($p < 0.005$), but alcohol ingestion was more in young adult group ($p = 0.014$). Furthermore, more cases of femur neck fractures were found in the middle-to-oldest-old group than in the young-old group ($p = 0.033$). In the middle-to-oldest-old group, femur neck fractures was significantly correlated with older age, female sex, osteoporosis, and other chronic conditions ($p = 0.031$, $p = 0.073$, $p = 0.045$, and $p = 0.044$, respectively), whereas the correlation with drinking status and other underlying conditions was not statistically significant. Similarly, a binary logistic regression analysis of the variables considered significant in the univariate analysis was conducted to examine the relationship between femur neck fractures and older age. Of these variables, only 'middle-to-oldest-old age' was found to be independently significant ($p = 0.046$).

Conclusion: The characteristics of femur neck fractures from low-energy falls in the middle-to-oldest-old patients are different from young adult patients or young-old patients. Especially, the risk of femur neck fractures from low-energy falls in the middle-to-oldest-old patients was higher than in the young-old patients. Therefore, emergency physicians need to pay particular attention to the middle-to-oldest-old aged hip joint trauma patients, even to those with low-energy fall injury.

#18793 : Patterns of acute poisoning in children: data of pediatric emergency unit**Authors:**

Goda Laucaitytė (1), Goda Laucaitytė (1), Dovydas Bartkus (2), Lina Jankauskaitė (3)

1. , Lithuanian health sciences university, Kaunas, LITHUANIA
2. student, Lithuanian health sciences university, Kaunas, LITHUANIA
3. dr, Lithuanian health sciences university, Kaunas, LITHUANIA

Keywords: pediatrics, poisoning, emergency

Abstract :

Pediatric poisoning is a common emergency worldwide and represents a frequent cause of admission to the emergency department (ED) each year. The main reasons for acute poisoning are different in countries and change in the time according to age group and gender. The knowledge of the epidemiology of the poisoning in each country can help to be aware of the extent and characteristics of the problem and to plan prevention, care, and treatment.

Our study investigated the epidemiology of poisoned children admitted to the largest pediatrics ED in Lithuania in 2018. The study was retrospective descriptive. Data were collected of all children under 18 years presenting with poisoning at the ED. While alcohol abuse is a widespread problem in Lithuania we also included cases of acute alcohol intoxication.

The study covered 148 cases of pediatric poisoning with the mean age of 10.4 ± 6.3 . The patients consisted of 84 (56.8%) boys and 64 (43.2%) girls. Children were divided into four age groups: babies and toddlers (1 month – 3 years), preschoolers (4-6 years), grade-schoolers (7-12 years) and teenagers (13 – 18 years). The majority of cases occurred in teenagers (59.5%), less in babies and toddlers (40%), and the least in preschoolers and grade-schoolers (11 and 9% respectively). In each group, male children outnumbered female children with the highest difference being among teens. Poisoning patterns changed according to the age group. The most common reason for poisoning was acute alcohol intoxication covering 63 cases (42.6%) and 95.2% of these patients were teenagers. More significant agents of poisoning in babies and toddlers were drugs, household chemicals, and unknown substances. The latter was the second most common reason for poisoning in general (27.7%). A greater number of poisonings were observed to occur in autumn for teenagers (68.2%), whereas there was no significant difference between age groups in other seasons.

Acute children poisoning remains a serious but preventable pediatric medical emergency. Alcohol is the most frequent agent of children intoxication and therefore prevention should include parents, teachers and public health authorities. The most important action to prevent young children from poisoning is parental awareness and education about keeping poisoning agents safely.

#18794 : Novel ethanol point-of-care test device Albio™: first results in world and introduction to coming studies.

Authors:

Tuukka Tomminen (1), Ville Hällberg (2), Ilkka Vartiainen (3), Topi Mattila (4), Shu Alex (5), Ari Palomäki (6)

1. , None, Hämeenlinna, FINLAND
2. Specialty in emergency and internal medicine, Kanta-Häme Central hospital, Hämeenlinna, FINLAND
3. CO, Palfinland oy, Espoo, FINLAND
4. Emergency physician resident, Kanta-Häme Central hospital, Hämeenlinna, FINLAND
5. Assistant to president , Major Biosystem Co. Ltd, Taiwan, TAIWAN
6. Professor of emergency medicine, Tampere university, faculty of medicine and health technology, Tampere, FINLAND

Keywords: Ethanol, point-of-care, Albio

Abstract :

Novel ethanol point-of-care test device Albio™: first results in world and introduction to coming studies.

Introduction

Ethanol is one of the leading causes of death worldwide. Once intoxicated, the risk for trauma increases as the ethanol percentage rises. After valuating reasons for patient flow to emergency department ethanol related visits cover 12 to 15 % in daytime and the frequency rises in the weekend nights nearly to 70 %. Further, ethanol intake can masquerade the real reason for the visit; after the first triage 23 % of the patients have been triaged with a false intake diagnose.

Generally ethanol levels are measured via breathalyzer or intravenous blood sample.

Both options have their weaknesses and cannot be utilized in every situation. Breathalyzer demand a co-operating patient. Patients with lowered consciousness cannot exhale properly. Further, disoriented patients who cannot grasp the concept of long steady exhale cannot be evaluated reliable with breathalyzer.

The problem with venous sample is processing time. The process can take up to 30 – 90. Thus, it doesn't help the clinician in the first evaluation of the patient.

To our best knowledge PAL Finland has developed world`s first point-of-care test for ethanol, Albio™. It is patented in EU, US patent pending. Albio™ can analyze blood ethanol concentration during less than 10 seconds from a small sample of blood. The sample can be taken from capillary blood; thus, it is easy and quick to use. In most countries paramedics control blood sugar levels and capillary sample for ethanol levels can be taken from the same sting. Basic operating principles are based on chemical reaction where ethanol and nicotinamide adenine dinucleotide in the presence of alcohol dehydrogenase (ADH) oxidize forming acetaldehyde and oxidized form of nicotinamide adenine dinucleotide.

Objective

Firstly, the device had to be validated by the company. In the second phase independent research team will test the device in the field. The objective is to study whether, the device is accurate enough also in the real life and is reliable/practical to use. The study will start in late 2019 and it is composed by the main author of this abstract (with research team) without any engage from the company.

Methods and results

We studied the changes of electric current in the Albio™ device in relation to blood ethanol concentration. For ethanol concentration of 0.0 permille, the device gave a certain number of arbitrary units. When ethanol concentration was risen to 0.25 and 0.50 permilles the mean values were 1.84 and 2.31 times higher than for 0.0 permilles, respectively. Further, the mean values were 2.64 and 2.98 times higher for 1.0 and 1.5 permilles than for 0.0 permilles, respectively. The individual values were clearly separable from those taken in other ethanol concentrations.

Conclusion

In the internal validation of the company, the point-of-care blood ethanol device looks very promising. If it holds the results in the coming field test, it will become a useful asset to first responders, paramedics together with doctors and nurses working in emergency departments.

#18798 : Test of a New Massive Transfusion Protocol in an Italian Emergency Department: The Usefulness of an In-Situ Simulation.

Authors:

Francesco Vetrone (1), Giulia Mormando (2), Guido Ronsivalle (3), Sandro Savino (2), Serena Rizzini (1), Matteo Paganini (1), Andrea Bortoluzzi (3), Fabrizio Fabris (2)

1. Emergency Medicine Residency Program , University of Padova, Padova, ITALY

2. Department of Medicine (DIMED), University of Padova, Padova, ITALY

3. Emergency Department, Azienda Ospedaliera di Padova, Padova, ITALY

Keywords: Massive Transfusion Protocol, hemorrhagic shock, in-situ simulation, simulation

Abstract :**Background**

Massive Transfusion Protocols (MTPs) refer to a series of predetermined steps activated when treating exsanguinating patients. MTPs prompt the early and standardized delivery of blood products in a well-balanced ratio, thus improving patients outcomes.

Since research about the best management of the critically bleeding patient is still ongoing, periodic revisions of MTPs are of utmost importance. However, any modification to protocols should be tested before an official adoption to identify latent threats.

To test the viability of the new MTP, an In-Situ (IS) simulation was performed in our Emergency Department (ED).

Methods

This project has been generated from an internal quality improvement initiative undertaken in December 2018 by the ED of the Azienda Ospedaliera di Padova (Italy), a tertiary facility and trauma center. Modifications were introduced to reduce the delay between activation and administration of the first units of blood during MTP activations in the ED. Main improvements included the introduction of a fridge with two 0- Packed Red Blood Cells (PRBCs) units, a more intuitive flowchart, and the possibility to obtain ROTEM consultation.

In January 2019 an IS simulation was performed to test the new protocol, using a Trauma Hal S3040.100 manikin (Gaumard Scientific, Miami, FL, USA). The whole procedure was videotaped. All the personnel involved previously received a draft of the new MTP and were aware that the simulation would have taken place during their shift. The case involved a patient who sustained a thoracoabdominal blunt trauma, resulting in hemoperitoneum and hemorrhagic shock.

As primary outcome, completion of these components of the MTP (within maximum time in brackets) was tracked: MTP initiation (5 min); PRBCs from fridge transfused (7 min); ROTEM consult (7 min); blood bank activation (10 min); hypothermia and acidosis treated (15 min); surgical consult (15 min); transfer to theatre (25 min). As secondary outcome, the percentage of closed-loop communications was calculated as an indicator of crisis resource management skills use. The simulation was carried out ensuring that patients could not be harmed. Verbal informed consent was obtained from all the participants.

Results

All the tasks were performed within the time endpoints. The execution was fluent and no problems or

missing steps in the new MTP were detected by facilitators. The event manager issued 21 verbal orders, 9 of which were closed-loop (43%). The simulation did not interfere with other ED's activities.

Discussion

Optimal implementation of MTPs calls for periodic revisions and evaluations to ensure the protocols are meeting objectives and to identify areas of potential improvement. However, updates and new procedures should be tested before the official approval to ensure that their deployment occurs without planning errors. Despite closed-loop communications were scarcely used (43%), the team completed all the tasks within time limits without finding any issue in the new MTP.

IS simulation showed to be helpful in verifying that the new MTP was sound and viable before its official introduction. In the future, further IS simulations will be used to increase the performance of ED's staff during MTP activations, especially to improve communications.

Trial Registration / Funding Information (only) :

Trial registration: not applicable. Funding Information: Department of Medicine, University of Padova.

#18799 : Albumin outperforms other novel biomarkers in prognosticating sepsis-associated mortality for sepsis patients in emergency department**Authors:**

Su Ann Yong (1), Chia-Yu Chao (2), Kuan-Fu Chen (2)

1. Department of Emergency Medicine, Chang Gung Memorial Hospital, Taoyuan, TAIWAN

2. Department of Emergency Medicine, Chang Gung Memorial Hospital, Keelung, TAIWAN

Keywords: Albumin, biomarker, sepsis, bacteremia, mortality

Abstract :**Background**

Sepsis can be fatal without timely diagnosis and prompt intervention. Therefore, it is necessary to develop early predictive biomarkers to identify and risk-stratify patients with sepsis. Traditionally, albumin has been used as a nutritional biomarker in intensive care unit to predict the mortality of septic patients; however, its role in prognosticating patients with sepsis in the emergency department (ED) remains uncertain.

Objective

The aim of the current study is to evaluate the performance between conventional and novel biomarkers in predicting 28-days sepsis-associated mortality and bacteremia in the ED.

Methods

This prospective hospital-based cohort study was conducted in the ED of two different tertiary medical centers in Northern Taiwan between 2012 and 2018. Patients with documented infectious diseases during initial 24 hours were enrolled. We applied the multiplex platform of Bio-Plex Pro™ Assays to evaluate 14 novel biomarkers: angiotensin-2, pentraxin 3, triggering receptor expressed on myeloid cells 1 (TREM-1), intercellular adhesion molecule 1 (ICAM-1), vascular cell adhesion protein 1 (VCAM-1), soluble cluster of differentiation 14 and 163 (sCD14 and sCD163), E-selectin, P-selectin, tumor necrosis factor alpha (TNF alpha), cluster of differentiation-64 (CD64), interleukin-6, interleukin-8 and interleukin-10. Besides, we assessed 7 conventional markers: albumin, procalcitonin (PCT), C-reactive protein (CRP), red cell distribution width (RDW), Sequential Organ Failure Assessment (SOFA) score, Systemic Inflammatory Response Syndrome (SIRS) and Chills, Hypothermia, Anemia, RDW and Malignancy (CHARM) score. Our main outcomes of biomarker performance included sensitivity, specificity, accuracy and area under the receiver operating characteristic curve (AUC).

Results

We recruited 1478 patients in our study. Among them, 1155 subjects had SIRS (78.15%), 912 subjects had severe sepsis (or Sepsis 3.0, 61.71%), and 466 subjects had septic shock (31.53%) with a 28-day mortality rate of 8.15%. By using different cutoff values of albumin, we demonstrated relatively acceptable sensitivity, specificity and accuracy for sepsis-associated mortality prediction accordingly (albumin level of 2.5g/dL: 34.51%, 93.90%, 88.20%; albumin level of 3.5g/dL: 90.27%, 44.41%, 48.81%). Among all biomarkers, albumin alone possessed an AUC of 0.791 (95% CI 0.750-0.832) and its performance was similar to the SOFA score with an AUC of 0.792 (95% CI 0.750-0.833) in 28-days sepsis-associated mortality (p-value = 0.98). For bacteremia, procalcitonin had a higher AUC than CRP (0.799, 95% CI 0.744-0.854 versus 0.540, 95% CI 0.467-0.611; p-value < 0.0001), as well as other biomarkers and scoring systems.

Conclusion

Our finding suggests that albumin, as a single biomarker, is a promising early predictor for mortality in sepsis subjects, similar to SOFA score, and outweighs other markers. The role of biomarker in identifying bacteremia has proved that PCT is still a better tool in comparison with CRP. Further efforts are needed to evaluate and improve the reliability of combining two or more biomarkers in early prediction of sepsis-associated mortality.

Trial Registration / Funding Information (only) :

The study was supported by the Ministry of Science and Technology (Taiwan) and Chang Gung Memorial Hospital (107-2314-B-182-052-MY2, 106-2314-B-182-028, CMRPG2H0311, CMRPG2H0321). The funder has no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

#18800 : Storage methods of medical data on smartphone and legal obligations**Authors:**

Ahmed Guesmi (1), Rabeb Mbarek (2), Dorra Loghmari (3), Elee sghaier (4), sondos Laajimi (4), yassine jridi (4), Mounir Naija (4), Naoufel Chebili (4)

1. service d'aide médicale urgente (SAMU) 03 CHU sahloul sousse, CHU sahloul sousse, SOUSSE, TUNISIA
2. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA
3. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA

Keywords: smartphone,legal obligations,intern,medical informations

Abstract :

BACKGROUND:There is frequently a legal issue about sharing patients' medical information via smartphone.The aim of the study was to identify the storage methods for medical data on Smartphone as well as to assess the knowledge of the Emergency interns on the legal obligations related to these exchanges.

METHODS: A cross sectional and multi-center study realized over a period of one month ,December 2017, using a hand delivered questionnaire to Emergency Departments interns.

Design: A questionnaire survey design.

RESULTS:82 Emergency interns participated in the study with a response rate at 100%. within the group of interns who took part of this study, 78 residents owned a Smartphone(a 95% rate.) In 89% of the cases interns kept the medical data exchanged in their Smartphone. Only a third of them deleted it after use. in 85% of the cases , The medical data exchanged via their Smartphone were stored within their personal data. No intern placed this data in a secured file (insecure data storage). According to Emergency interns, the main arguments for storing medical data were patient management system and follow-ups as well as for research purposes. More than three quarters of the interns thought that the exchange of medical data via Smartphone guaranteed medical confidentiality to patients. The majority of interns (83%) confirmed that these exchanges via Smartphone did not proclaim the professional secret. Only 10% of interns give value to the judicial consequences when exchanging data. Only 8% of the interns included informed their patients before ending medical data to a third party via Smartphone (obtain patient consent). Only 5%of Interns requested the patient consent prior to sending or using the data for medical research purposes. Only 6% of interns marked these data exchanges on the patient's medical record. A third of them have knowledge of the legal obligations related to these exchanges. In our study, two-thirds of interns reported lack of knowledge in the medicale galfield and only 6% followed theseobligations.

CONCLUSION:The study shows the risks associated with the use of smartphone to share , produce and store medical informations. interns do not meet standards of care reasonably expected to ensure patient privacy and the secure storage of medical documentation. The knowledge of the legal obligations should be present in medical formation.

Trial Registration / Funding Information (only) :

no funding

#18801 : Factors associated with the continuation of hospitalization at 21day after hospitalization among emergency patients transported by EMS: A population-based study in Osaka, Japan**Authors:**

Yusuke Katayama (1), Tetsuhisa Kitamura (2), Tomoya Hirose (3), Nakao Shunichiro (3), Tachino Jotaro (3), Takeshi Shimazu (1)

1. Department of traumatology and acute critical medicine, Osaka University Graduate School of Medicine, Suita, JAPAN
2. Department of social and environmental medicine, Osaka University Graduate School of Medicine, Suita, JAPAN
3. Department of Traumatology and Acute Critical Medicine, Osaka University Graduate School of Medicine, Suita, JAPAN

Keywords: epidemiology, hospitalization, elderly

Abstract :

Background: Recently, the number of emergency patients transported by EMS has been increased in Japan. Therefore, it is necessary to smoothly discharge patients who have completed treatment. However, there are some patients who are hospitalized for a long time. The aim of this study was to assess the factors associated with long hospitalization among emergency patients transported by ambulance with using population-based registry in Osaka, Japan.

Method: This study was a retrospective observational study and the study period was 1 year between January 2016 to December 2016. We included the patients who were transported by EMS and were registered in population-based patient registry "ORION" in this study. The main outcome was the continuation of hospitalization at 21day after hospitalization. We assessed the relationship between main outcome and factors such as patient characteristics, the reason for ambulance call and main disease state with multivariable logistic regression analysis.

Results: Among 149,579 eligible patients, 49,804 patients continued to be hospitalized at 21day after hospitalization and 99,775 patients discharged to home. Multivariable analysis showed the elderly (65-74 years old, adjusted odds ratio(OR); 1.670, 95% confidence interval; 1.618-1.742), the high elderly (75-89 years old, adjusted OR; 2.158, 95%CI; 2.087-2.232), the super elderly (over 90 years old, adjusted OR; 2.227, 95%CI; 2.122-2.337), female (adjusted OR; 1.166, 95%CI; 1.085-1.252), traffic accident (adjusted OR; 1.166, 95%CI; 1.085-1.252), unknown address (adjusted OR; 4.735, 95%CI; 3.447-6.503), requirement to nursing care (adjusted OR; 1.352, 95%CI; 1.313-1.392) were associated with the continuation of hospitalization at 21day after hospitalization. Among the main disease state, neoplasms (adjusted OR; 1.825, 95%CI; 1.708-1.951), disease of blood and the immune mechanism (adjusted OR; 1.130, 95%CI; 1.014-1.260), disease of circulatory system (adjusted OR; 1.426, 95%CI; 1.372-1.481) were also associated with the continuation of hospitalization at 21day after hospitalization.

Conclusion: In this population, the elderly, female, traffic accident, unknown address, requirement to nursing care, neoplasms, disease of circulatory system were associated with the continuation of hospitalization at 21day after hospitalization.

Trial Registration / Funding Information (only) :

This study was supported by JSPS KAKENHI Grant Number 18H2902.

#18803 : The Comparison between high-sensitive troponin T, high-sensitive troponin I and conventional troponin I in diagnosis acute myocardial infarction in the emergency department, observational retrospective cohort

Authors:

Jyun-Long Chen (1), Chia-Yu Chao (2), Kuan-Fu Chen (3)

1. Emergency Medicine, : Chang Gung Memorial Hospital, Taoyuan, TAIWAN
2. Chang Gung University, Chang Gung University, Taoyuan, TAIWAN
3. Emergency Medicine, Chang Gung Memorial Hospital, Taoyuan, TAIWAN

Keywords: acute myocardial infarction(AMI), high-sensitive troponin(HsTn), specific cut-offs, area under receiver operating characteristic curve(AUROC), positive and negative predictive value(PPV/NPV), sensitivity and specificity

Abstract :

Background: In the primary care setting such as the emergency department, highly accurate biomarkers are important in diagnosing acute illnesses such as acute myocardial infarction (AMI). In order to quickly and more accurately achieve the diagnosis and disposition, high-sensitive troponin assays have emerged for this decade. We aimed to compare the performance of conventional and different novel high-sensitive troponins.

Methods: We conducted this observational retrospective cohort study using the existed record as well as waste specimen testing in a tertiary teaching hospital in Taiwan. Utilizing text-mining method to retrieve all patient-visits with symptoms suggestive of an acute coronary syndrome (ACS) with troponin test in the electronic medical record (EMR), we operationally defined AMI using free-text of discharge diagnosis and the ICD-9 and 10 codes. We further utilized the waste specimen to test platforms from Roche, Abbot, and Beckman for the performance of HsTnT and HsTnI. We use the algorithm recommended by the Taiwan society of emergency medicine to categorized patients into subgroups including rule-out, rule-in, and observation. Specific cut-offs for the elderly (> 70 years), different genders and impaired renal function (eGFR<60) were obtained from the manufacture and the literature. The performance of different tests was evaluated by AUROC, sensitivity, specificity, NPV, and PPV.

Results: We included 97,183 patients presenting to ER with symptoms suggestive of ACS and test of troponin from 2006 to 2018. Around 9.5% admission with acute myocardial infarction(n=9,194) were identified through this process. HsTnT outperformed the conventional TnI in our cohorts (over all AUROC: 0.81 vs. 0.71, Sensitivity: 76.83% vs. 30.97%, Specificity: 61.04% vs. 82.54%, PPV: 21.95% vs. 13.43%, and NPV: 94.87% vs. 93.19%, respectively). However, level of HsTnT was more likely to be influenced by age and renal function. We further tested 319 waste specimens out of 143 patients to compare different HsTn platforms. Accordingly, HsTnT seemed to outperform HsTnI (AUROC 0.833 vs. 0.743, p=0.02, Sensitivity: 76.83% vs. 100%, Specificity: 61.04% vs. 48.21%, PPV: 21.95% vs. 19.44%, and NPV for rule-out: 94.87% vs. 100%, NPV for observation: 92.17% vs.81.58%, respectively. Using different HsTn cutoffs for the elderly, we observed increased PPV for Roche (from 21.95% to 25%) but decreased for Abbott and Beckman (from 20% to 15.79% and from 19.44% to 8.3%). Using different HsTn cutoffs for genders, increased PPV of male (Roche: from 18.75% to 23.81%, Abbott: from 20% to 29.17%, Beckman: from 19.44% to 27.27%) and much decreased PPV of female in all tests (Roche: from 18.75% to 5.56%, Abbott: from 20% to 5.26%, Beckman: from 19.44% to 7.69%) were observed. In terms of different cutoffs for impaired renal function, increased PPV of Roche (from 21.95% to 26.09%), Abbott(from 20% to 28.57%) and Beckman (from 19.44% to 19.5%) were observed.

Conclusion : In this observational study, we found the HsTnT provided almost two-fold higher PPV than TnI in diagnosing AMI in the ED. HsTnT seemed to outperform HsTnI. However, the differences between different HsTnI platforms were not significant. Nonetheless, this study is limited to the retrospective nature so the incorporation bias could not be avoided.

Trial Registration / Funding Information (only) :

The study was supported by the Ministry of Science and Technology (Taiwan) and Chang Gung Memorial Hospital (107-2314-B-182-052-MY2, 106-2314-B-182-028, CMRPG2H0311, CMRPG2H0321). The funder has no role in study design, data collection, and analysis, decision to publish, or preparation of the manuscript.

#18806 : Analysis of bedside determinisms leading to under-prescription of morphine titration in the Emergency Department:
EPI-MORPH study

Authors:

Virginie Eve LVOVSCHI (1), Karl Hermann (2), Hugo Mocelin (1), Luc-Marie Joly (1), Marie-Pierre Tivolacci (3)

1. Service d'accueil des Urgences, CHRU Charles Nicolle, Rouen, FRANCE
2. CIC 1404, CHRU Charles Nicolle, Rouen, FRANCE
3. CIC 1404, Inserm 1073, CHRU Charles Nicolle, Rouen, FRANCE

Keywords: morphine titration, case control study, oligoanalgesia, emergency department, acute pain management

Abstract :

Background: Morphine Titration (MT) is the gold standard for severe acute pain management in the Emergency Department (ED) in France. Guidelines suggest its ubiquitous use for adults with Visual Analogue Scale (VAS) $\geq 60/100$, or Numeric Rating Scale (NRS) $> 6/10$ at admission. Despite recommendations oligoanalgesia remains problematic and opiate prescription is rare in the ED. Pain management by protocol at ED admission is presented as the best solution. However, physicians' adherence to protocol, as bedside determinisms of prescription of morphine titration, is poorly investigated. **Objectives:** 1-Evaluate the prevalence of MT among eligible patients according to French guidelines. 2- Collect real-time data on the reasons for morphine non-titration (MNT) at the bedside, regarding patients, physicians and ED organisation. 3-Evaluate the adherence of physicians to MT protocol outside the care environment 4- Identify factors statistically associated with MNT. **Methods:** We conducted a 1-month single-centre cross-sectional study in our university ED, including patients with VAS ≥ 60 (or NRS ≥ 6) on initial nurse evaluation. We aimed to evaluate the prevalence of MT and to identify real MNT determinisms among 37 items (from preliminary focus groups and literature analysis). The data collected were divided into 6 subclasses: morphine contraindications, morphine non-indications, decision for other analgesic treatments, decision for reassessment of pain, opiophobia and other prescribing fears, care environment related-issues. In a simultaneous study, to estimate the ideal rate of MT, a real-time blind assessment of the records by non-prescribing senior physicians of the patient was performed. Then a 3-month case-control study was conducted to identify associated factors with MNT. A bivariate analysis was performed involving 8 variables: Age, gender, initial VAS/NRS levels, route of admission and discharge, diagnosis, prescriber's gender and grade. **Results:** 164 patients (women 54.2%, mean age 45.9 years) were included in the cross-sectional study with mean VAS 75.5/100 (SD = 13.1). MT prevalence was 6.1% CI95% [2.4-9.8]. The three main reasons for MNT were: subjective physician-reduced VAS (45.7%), prioritization for lower analgesic levels (33.5%) or for non-analgesic etiological treatment (12.8%). In the "blind reading" study, the ideal rate of titration was 18.3% CI95% [11.5-27.7]. 50 cases (titrated patients) and 154 controls (non-titrated) were compared: The factors significantly associated with MNT were: personal route of admission (OR = 4.6, $p < 0.001$), discharge home (OR = 8.5 < 0.001), physician low grade (OR = 2.0 $p = 0.03$), and initial low VAS (OR = 1.7, $p < 0.001$). **Discussion and conclusion:** Physicians demonstrated poor adherence to a ubiquitous MT protocol based on initial nurse VAS or NRS evaluation, even outside care environment considerations (6.1% to 18%). They used other cognitive paths to decide MT prescription: intuitive pain assessment, paracetamol therapeutic tests, first evaluation of etiological treatment. The relevance of systematic MT is particularly challenged by young physicians, and when patients are in ambulatory care pathways. MT is safe and effective for the relief of severe pain in the ED but a single VAS evaluation at admission is not favored by physicians as the main trigger for current decisions of MT.

Trial Registration / Funding Information (only) :

2019/116/OB

#18807 : Satisfaction survey after training hospital staff in Cardiopulmonary Resuscitation**Authors:**

Rosario Peinado Clemens (1), Álvaro Martín Pérez (2), Concepción de Vera Guillen (1), Juan M Fernández Núñez (3), Milagros Lucas Gutierrez (2)

1. Infanta Crisitina Hospital. Emergency Department, Servicio Extremeño de Salud, Badajoz, SPAIN
2. Servicio de Urgencias. Complejo Hospitalario Universitario de Badajoz, Servicio Extremeño de Salud, Badajoz, SPAIN
3. Infanta Cristina Hospital. Emergency Department., Servicio Extremeño de Salud, BADAJOZ, SPAIN

Keywords: CPR, STAFF TRAINING, CPR TRAINING

Abstract :

Introduction

Knowledge of Basic Life Support (BLS) techniques generates an undisputed benefit by improving survival prognosis in any PCR case, provided that BLS measures are initiated within the first 4 minutes of the CRP and the comprehensive emergency system included within the "Chain of Survival" is implemented. Early defibrillation is the "key to survival" for 80% of cardiac arrests, which are caused by ventricular fibrillation, as for every minute of delay in performing defibrillation the chances of survival decrease by 10%. For early defibrillation to be possible, knowledge about the use of semi-automatic defibrillation needs to be widely disseminated among staff in different health units.

Objectives

To find out the degree of satisfaction perceived after carrying out a training plan in cardiopulmonary resuscitation in the form of eminently practical workshops among the health personnel of ten urban and rural health centres.

Method

120 surveys were distributed among all the participants with 5 answers in Likert format, where 1 was totally in disagreement with the statement and 5 totally in agreement. The surveys contained 7 questions regarding the methodology used and the quality of the theoretical and practical contents. Finally, there was a question that assessed the degree of general satisfaction of the course in percentage and an open-ended question.

Results

The results show a high degree of satisfaction with an average of 90% in terms of methodology and content of the workshops. In 80% of them the time spent seemed correct and 20% think it was scarce. Overall satisfaction was 95%. With regard to suggestions for improvement, a large majority demanded that these workshops be held at least once a year. And in 20 cases, there were complaints about the material used.

Conclusions

The Primary Care health personnel who received the workshops believe that the training is very necessary and agree on the short workshop format used, with eminently practical content. Its greatest demand is that this training has a certain periodicity, in our case almost all were in favour of it being annual. The negative point was the obsolete and poor quality material used, a complaint that has been sent to the people in charge of our area management.

#18809 : Prognosis value of geriatric trauma outcome score in senior severe trauma patients**Authors:**

Badr Ferjeoui (1), Imen Mekki (2), Hamed Rym (2), Hana Hedhli (2), Maaref Amel (2), Rym Ben Kaddour (1), safia Othmani (1), Sarra Jouini (2)

1. Emergency department Charles Nicolle Hospital, Emergency department Charles Nicolle Hospital, Tunis, TUNISIA
2. Emergency Department Charles Nicolle Hospital , tunisia, tunis, TUNISIA

Keywords: score, emergency, trauma, senior, mortality

Abstract :

Background : Severe trauma is a life threatening situation and is widely described in young patients. Therefore, only few studies were interested in evaluating prognosis in senior trauma patients. Moreover, mechanisms of trauma in elderly are not as so high velocity-related as in younger patients .This situation could expose to an undertriage of trauma. Fewer scoring tools were proposed in literature. The aim of this study was to evaluate the value prognosis of one Senior trauma score: Geriatric Trauma Outcome score (GTO Score) to predict mortality at day 7 in aged severe trauma patients

Methods : it was a prospective study with inclusion of trauma patients aged over 65 years. GTO score was evaluated. Prognosis value towards mortality at Day-7 was studied by characteristics of ROC curve.

Results: A total of 65 patients was included from the cohort of 699 severe trauma patients admitted to the emergency department during the study period. Characteristics of the population : mean age = 74 ± 6 years; Mean Injury Severity Score = 23 ± 15 ; Mean GTOS = 133 ± 38 ; need of vasocative agents n=16 (25%); massive transfusion in the first 24 hours n=2 (3%); Mortality rate was = 32 % (n= 21) at Day 7. GTOS was statistically higher in non survivors compared to survivors senior patients : 160 ± 45 versus 120 ± 27 with $p < 0,001$. Characteristics of the ROC curve of GTO score to predict mortality at Day7 were: AUC = 0,790; $p < 0,001$; CI[95%] = [0,667-0,913]; cut-off = 139; sensitivity = 71% ; negative predictive value 84%)

Conclusion : In this study, GTO score was predictive of mortality at day 7 post severe trauma in senior. Further comparisons with other specific scoring tools is whereas necessary to a better evaluation and emergency field application

#18811 : MUSED: Metoxyflurane Use in Emergency Department: head to head study of metoxyflurane vs. standard of care.

Authors:

Ivan Gornik (1), Bojana Radulovic (2), Jasmin Hamzic (1), Natasa Mandic (2)

1. Emergency department, University Hospital Zagreb, Zagreb, CROATIA
2. Emergency Department, University Hospital Zagreb, Zagreb, CROATIA

Keywords: metoxyflurane; emergency department

Abstract :

In this study we will try to compare metoxyflurane and standard of care in our emergency department. Metoxyflurane or standard of care will be given to trauma patients with NRS score >3 , with fractures of long bones, fractures of long bones requiring reposition, or joint dislocations. This will be prospective, randomised, open label, parallel group study in one emergency department. We will include 60 patients in this study, 30 of which will get metoxyflurane, and 30 who will get standard of care, which can be different depending on the operator, and includes hemathoma block, classic PSA with propofol or midazolam with fentanyl, parenteral nonsteroids, or some other medication for pain management. This study will show how can methoxyflurane perform in real life experience.

Pain will be measured at baseline, on time of arrival to ED, before the procedure, and in 5-minute intervals to 15 minutes postprocedure. Vital signs will be measured before the procedure, and every 2 minutes after the procedure, up to 10 minutes. Also, we will record if there was any need for rescue medications in both group. After the procedure, patient will be asked to rate efficacy of pain management with Likert scale. During the application of metoxyflurane or SoC we will also record side effects, and up to 30 minutes postprocedure.

Primary aim of this study is to show that metoxyflurane is not inferior to standard of care, in terms of change of NRS pain intensity at any moment after the medication application.

Trial Registration / Funding Information (only) :

None

#18812 : Performance of three physiological scoring system in predicting in-hospital mortality in patients with trauma: a retrospective cohort study**Authors:**

Georgios Filippatos (1), Markella Xaralabatu (2), Panagiotis Andriopoulos (3)

1. Laboratory of Epidemiology and Prevention of Hemoglobinopathies, Acute and Chronic Diseases, Department of Nursing, University of Peloponnese, Sparta, GREECE
2. Emergency department, General hospital of Elefsina, ATHENS, GREECE
3. Laboratory of Epidemiology and Prevention of Hemoglobinopathies, Acute and Chronic Diseases, Department of Nursing, University of Peloponnese, Sparta, GREECE

Keywords: Trauma, score, mortality

Abstract :

Background: There is growing demand for accurate and easy to use scoring models to evaluate trauma systems performance. To this end, Mechanism, Glasgow Coma Scale, Age and Arterial Pressure (MGAP) score, Glasgow Coma Scale, Age and Systolic Blood Pressure (GAP) score and New Trauma Score (NTS) were recently published to predict mortality in trauma patients. The purpose of this study is to compare the predictive performance for in-hospital mortality of three above-mentioned scores in Greek trauma population.

Methods: This single center, retrospective cohort study was conducted in a Greek tertiary care hospital between January 2015 to December 2018. We enrolled all trauma patients aged ≥ 15 transported to the emergency department and admitted to the hospital with principal diagnosis ICD-10 codes S00 to T14. Patients who died before emergency department arrival, transferred to other hospital, classified with Abbreviated Injury Scale v2015 < 2 and missing data were excluded. We calculated MGAP, GAP and NTS score using the first vital sign retrieved from emergency department records. The primary outcome was in-hospital mortality. Discriminative power of each score to predict mortality was measured using receiver operating curve (ROC) analysis and calibration at original cut-offs categories.

Results: In total, 2,097 trauma patients records were reviewed, 1,527 (73,2%) patients had complete data available for all score analysis. Median age was 63 (40-81) years and 60% were male. Median ISS was 9 (5-10) and mortality rate was 11,5%. The area under the curve was 0.918 for MGAP (95% CI=0.896-0.941), 0.921 for GAP (95% CI=0.896-0.942) and 0.908 for NTS (95% CI=0.881-0.935). With regard to original cut-offs, 42 (3,3%), 73 (43,4%) and 71 (89,9%) patients died in the low, medium and high MGAP risk categories, respectively. For GAP 66 (4,9%), 87 (62,6%) and 33 (97,1%) and for NTS 87 (6,3%), 59 (59%) AND 40 (88,9%) patients died in the low, medium and high risk categories, respectively.

Discussion & Conclusions: MGAP, GAP and NTS score can accurately predict in-hospital mortality in Greek trauma patients. Taking into consideration that was the first attempt at national level to evaluate the predictive ability of new physiological trauma score, further research is needed with larger samples to confirm their utility in local clinical practice.

#18822 : Multilevel Prediction model of acute myocardial infarction in chest pain patients of emergency department**Authors:**

Kihong Kim (1), Jeong Ho Park (1), Young Sun Rho (1)

1., Seoul National University Hospital, Seoul, KOREA

Keywords: acute myocardial infarction, prediction model, emergency department

Abstract :

Background

Prediction models have been developed for acute myocardial infarction (AMI) among chest pain patients in the emergency department (ED). But usually, they included many variables or high-sensitive cardiac biomarkers which make them less optimal for generalization. We developed 3-level (prehospital, ED triage, ED doctor's initial exam) prediction model that could be used in many emergency medical systems.

Methods

Multivariable logistic regression model (LR) and gradient boosting model (GBM) were developed on data from 8,673 ED visit for chest pain. Only variables which would be available shortly after patient presentation were used. 3-level modeling have been done and variables obtained in each level were chosen. Electrocardiogram (ECG) and high-sensitive cardiac biomarker were excluded for their fundamental diagnostic value. We evaluated performance by area under receiver operating characteristic curve (AUROC). Developed models were validated on validation data of 1,767 ED visit.

Results

About 8,673 subjects, patients diagnosed as AMI in ED were 866. AMI patients more likely to be older male, show higher triage severity, use emergency medical service and present typical chest pain. Variables chosen for 3-level were as follows: age, sex, time from symptom onset, mental status, ambulance use in prehospital level, triage result, shock state, tachycardia or bradycardia in ED triage level and atypical presentation of chest pain, hemoglobin, glutamic oxaloacetic transaminase (AST), glutamic-pyruvic transaminase (ALT), abnormal chest radiograph result for ED doctor's initial exam level. We calculated AUROC of LR/GBM model: 0.697/0.703 in prehospital, 0.731/0.732 in ED triage and 0.773/0.787 in ED doctor's initial exam level.

In validation data of 1,767 patients, AMI patients were 222. We applied same prediction model developed in test data and AUROC were as follows: 0.695/0.704 in prehospital, 0.724/0.725 in ED triage and 0.784/0.788 in ED doctor's initial exam level.

Discussion & Conclusions

We developed multi-level prediction model of AMI for chest pain patient who visit ED. GBM models showed slightly better performance in both data.

#18828 : Prehospital Diagnosis of Carbon Monoxide Intoxication and Direct Transfer to the Hyperbaric Facility: A New Protocol to Reduce Times To Chamber.**Authors:**

Matteo Paganini (1), Luca Martani (2), Luca Cantadori (3), Enrico Mario Camporesi (4), Gerardo Bosco (5)

1. Emergency Medicine Residency Program , University of Padova, Padova, ITALY
2. Anesthesiology, Critical Care and Hyperbaric Medicine Unit, Fidenza Hospital, Fidenza, ITALY
3. Prehospital Emergency Medical Service, AUSL Parma, Parma, ITALY
4. Team Health Research Institute, Team Health, Tampa, USA
5. Environmental and Respiratory Physiology Laboratory, Department of Biomedical Sciences, University of Padova, Padova, ITALY

Keywords: carbon monoxide poisoning, hyperbaric oxygen therapy, prehospital emergency care

Abstract :**Background**

Carbon monoxide (CO) intoxication affects about 50.000 patients per year in the USA. The mainstay treatments for CO intoxication are removing the patient from exposure and a timely administration of normobaric or hyperbaric oxygen (HBO), the latter being delivered through hyperbaric chambers.

A short time-to-treatment is fundamental in time-dependent acute conditions. Dealing with CO intoxicated patients, the time lapse between the first contact and HBO treatment can be defined as “Time-To-Chamber” (TTC), but there is still considerable disagreement regarding the treatment threshold time.

According to a retrospective cohort analysis of the 2008-2010 period, 76 patients were treated at the Fidenza hyperbaric facility (FHF) for CO poisoning, but no direct transfer from the scene was reported. Furthermore, after a retrospective analysis of TTC, no HBO treatment was performed within 30 minutes from the first contact and 27% of patients were treated after 4 hours. With this work, we propose a new interfacility protocol for the early prehospital diagnosis and direct transfer to a hyperbaric chamber of CO intoxicated patients aiming to reduce TTC.

Methods

In 2013 a new protocol was **generated from a quality improvement initiative** involving the FHF and the Emergency Medical Service (EMS) of the Province of Parma (Italy). This protocol was activated by dispatchers or EMS providers in case of situations and symptoms suggestive of CO intoxication. EMS vehicles on the scene used a newly introduced carboximeter (Rad-57; Masimo, Irvine, CA, USA), and confirmed the suspected diagnosis if a value of carboxyhemoglobin (CO-Hb) > 3% was detected. Patients were then treated with normobaric oxygen via a non-rebreather mask and directly transferred from anywhere in the province directly to the FHF after teleconsultation with the hyperbaric medicine specialist. Once at FHF, patients were treated with HBO in compliance with current guidelines after confirmation of CO-Hb values in the ED. This study was approved by the local Ethics Committee (620/2018).

Results

Following the introduction of this protocol, 54 patients were included in the 2014-2017 period, 23 of which were directly transferred to the FHF. HBO treatments performed within 30 minutes increased to 17% ($p < 0.05$) and those performed after 4 hours dropped to 11% ($p < 0.05$). Interestingly, all the directly transferred patients were treated within 3 hours.

Discussion

This new protocol markedly reduced TTC of CO intoxicated patients in the Italian province of Parma. TTC can be influenced by at least two elements. First, the prehospital time, that is spent to transfer the patient from the scene to the nearest Emergency Department (ED). Secondly, the in-hospital component, consisting of the time to suspect and confirm the diagnosis of CO poisoning, to transfer the patient to the nearest HBO facility, and to prepare the hyperbaric chamber. Even if challenging, this protocol acted on both the components, mainly eliminating the transfer to the nearest hyperbaric chamber. In the future, this protocol could be tested on a wider, supra-regional “CO intoxication” network. Moreover, a prospective analysis could be useful to also clarify the neurological outcomes of these patients.

Trial Registration / Funding Information (only) :

Trial registration: n/a Funding: none declared.

#18837 : A novel 'old' approach to CAMH's

Authors:

Ali Al-Salihi (1), George Oommen (1), Marie Spiers (1)

1. , N/A, Glasgow, UK

Keywords: CAMHS , Paediatrics, children, mental health problem, Emergency medicine

Abstract :**Background to the audit:**

The prevalence of mental health problems in children aged 5 to 15 years old is increasing with time from 9.7% in 1999 to 11.2 in 2017 (NHS Digital, 2018). It is important to accurately assess these patients and risk categorize them to avoid adverse outcome. To this end, NHS greater Glasgow and Clyde has adopted a Performa for triaging, risk categorizing, medical assessing and referring these children to establish a safety network, ensure continuity of care and comply with the royal college standards for mental health (RCEM, 2018).

Standard:

Any child presenting with mental health problem to Royal Hospital for children emergency department should have the Performa filled in by the nursing and medical staff.

Indicator:

Percentage of patients presented to our tertiary centre paediatrics ED with mental health problem having the Performa filled in appropriately.

Target:

100% compliance

Methodology:

Data collection: 01/02/19 - 30/04/19 retrospectively from our electronic system (track care) for Royal Hospital for Children (tertiary centre).

Inclusion criteria:

Any patient presented with mental health problem (based on presenting complaint)

Exclusion criteria:

Critically ill patients who required level 3 treatment. (1 patient)

Results:

34/ 17451 (0.2 %)	presented with mental health problem
1/34	excluded (critically ill required level 3 care)
19/33 (%57)	had the mental health Performa filled in
17/19	The Performa was filled in accurately by both the medical and nursing staff with clear referral plan
2/19	The medical section of the Performa was not filled in.

Of note, 6 out of the 14 patients in which the Performa was not filled in were brought in by ambulance (7 patients in total brought in by ambulance and only one had the Performa filled in).

Action plan:

- 1.Present the data to the local emergency medicine doctors and nursing staff.
- 2-Copies of the proforma to be provided in the resuscitation room.
- 3-Re-audit in 8 months.

References:

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#18839 : Impact of a paediatric emergency department observation unit in a European tertiary hospital, a retrospective study**Authors:**

Roser Martinez Mas (1), Lorea Martinez-Indart (2), Iñaki Armentia Arsuaga (3), Beatriz Azcunaga Santibañez (4), Javier Benito Fernandez (4), Santiago Mintegi Raso (4)

1. Pediatric Emergency Department, Cruces University Hospital, Bilbao, SPAIN
2. Clinical Epidemiology Unit, Cruces University Hospital, BioCruces Health Research Institute, Bilbao, SPAIN
3. Cost-Accounting Section, Cruces University Hospital, Bilbao, SPAIN
4. Pediatric Emergency Department, Cruces University Hospital, University of the Basque Country, Bilbao, SPAIN

Keywords: Pediatric emergency department, Observation unit

Abstract :

Background: Pediatric observation units (OU) are becoming more common worldwide. There is a great variation related to the organization of these OU incorporated into the paediatric emergency departments (ED).

Primary Objective: Assess the impact of an OU incorporated into the paediatric ED. **Secondary objectives:** to determine the spectrum and frequency of diagnoses of the managed children; to identify the conditions associated with successful discharge within 24 hours; to determine the cost savings of the OU.

Methods: Retrospective study of all paediatric ED presentations in a tertiary university hospital between 2014-2016. We obtained information on the episodes from the electronic health records of the ED and the public health system electronic database. Overall, conditions were classified into medical conditions [MC], trauma conditions [TC] and other unintentional injuries [OUI]. Cost savings were calculated by the difference in cost between an inpatient bed (1-day stay) and a bed (24-hour stay) in the OU.

The main outcome was "avoided admissions to ward": rate of OU admissions finally fully managed as outpatients (no admission to the ward in any visit to the ED in the first 72 hours).

We analysed categorical variables using Chi-Square test. Statistical significance was set at $p < 0,05$ and confidence intervals (CI) were calculated at the 95% level.

The study was approved by the Ethical Committee.

Results: During the study period, we registered 159.903 episodes corresponding to children less than 14 years of age: MC 126.543 (79,1%), TC 24.865 (15,6%), OUI 8.495 (5,3%). After initial assessment, 148.527 (92,9%, CI 92,8-93,0) were discharged home, 2.766 (1,7%, CI 1,7-1,8) were admitted to ward and 8.610 (5,4%, CI 5,3-5,5) were OU admissions. Of those 8.610, 6.273 were finally managed as outpatients (avoided admissions to ward: 72,9% of the OU admissions [CI 71,9-73,8] and 55,1% of the episodes corresponding to children not discharged home after the initial assessment in the ED [CI 54,2-56,1]).

The rate of avoided to-ward admissions was 71,6% for MC (CI 70,6-72,7; 5.119 episodes), 76,9% for TC (74,3-79,3; 872) and 84,2% for OUI (79,7-87,8; 282). Certain conditions accounted for 50% of the avoided admissions to ward: asthma (1.101; 17,6%), extremities' fracture (575; 9,2%), fever without source (574; 9,2%), vomit/diarrhoea/gastroenteritis (560; 8,9%), seizure (351; 5,6%) and bronchiolitis (311; 5,0%).

The conditions with highest avoided admission to ward's rate were anaphylaxis/urticaria (98,9%; CI 95,7-99,8), poisoning (97,7%; 93,7-99,3), head injury (96,4%; 91,9-98,5), seizure (86,5%; 82,6-89,6), upper respiratory tract infection (85,8%; 81,6-89,2), vomit/diarrhoea/gastroenteritis (84,1%; 81,0-86,7) and asthma (83,6%; 81,5-85,5). The avoided admission to ward's rate was significantly lower ($p < 0,001$) in bronchiolitis (45,3%; 41,5-49,1) and soft tissue infections (57,1%; 51,9-62,3).

The estimated cost savings for inpatient care were 1.422.825 euros (474.275 euros/year).

Conclusions: An OU integrated into a paediatric ED allowed the outpatient management of around half of the patients not discharged home after the initial assessment in the ED, implying important cost savings.

#18840 : Cardiac arrest, a real emergency challenge**Authors:**

Raluca Radu (1), Elena-Mirela Bădescu (1), Andreea-Ana Săcădat (1), Ana-Daniela Țăran (1), Noemi Cristescu (1), Andreea-Maria Mazilu (1), Doroteia Andreea Miholcea (1), Ana Maria Mitruț (1), Maria Nicoleta Roșu (1)

1. Emergency Department, UPU-SMURD , Sibiu, ROMANIA

Keywords: Cardiac arrest (CA) , SMURD Mobile Intensive Care (MIC) Sibiu, age, cardiopulmonary resuscitation (CPR)

Abstract :**Background**

The number of deaths reported in Romania has shown a continuous increase in the recent year, while the leading cause of death remains the cardiac arrest (CA) which poses a significant challenge to paramedics dealing with it.

Therefore we led a study with the purpose of monitoring the incidence of CA in pre-hospital department in Sibiu, Romania country. Age, group, sex, environment, cause and resuscitation rate during a period of 2 years and 3 months were taken into account.

Materials and methods

The study was performed through a retrospective observational method on a number of 2827 cases that occurred to SMURD MIC Sibiu between 01.01.2017 – 31.03.2019 out of which 504 were cardiac arrest.

Results

The cardiac cause of CA was by a wide margin the most frequent with 375 (74,41%) patients, while respiratory and traumatic causes (car accidents and work incidents, suicide attempts) accounted for 43 (8,53%), respectively 55 patients (10,91%). There is a number of patients who developed CA in special circumstances (hypothermia and drowning), respectively 31 patients (6,15%).

We also studied the environment of 383 (75,99 %) patients which came from urban environment, out of them 102 (26, 63%) were resuscitated. There were 121 patients (24,01 %) from rural environment, out of them 27 (22,31%) were resuscitated.

Regarding age and sex of the patients 353 (70,03%) of them who suffered the CA are reported to be males, out of them 14 of them were under 35 years old (3,96%), 69 (19,53%) were between 36-55 years old, 176 (49,86%) between 56-75 years old and 94 (26,65%) patients with the age of 75 or above.

From the total number of patients 129 (25,61%) have undergone resuscitation with 59 (45,73%) patients who presented shockable cardiac rhythms, while the rest of 70 patients (54,27%) had unshockable cardiac rhythms. 227 patients (45,03%) received cardiopulmonary resuscitation (CPR) without results and 148 patients (29,36%) did not receive CPR and were declared dead.

Conclusions

Underlying cardiac conditions were the most frequent cause followed by traumatic causes, therefore we can conclude that cardiac disease and severe traumatic injury were the main causes of CA.

The majority of patients came from urban environment and in the case of cardiac disease several outlining factors such as lonely lifestyle, diet, stress smoking and toxic exposure had a significant contribution.

The resuscitation rate for the patients was higher in urban environment, because the amount of time that is required for the emergency team to reach the patient with CA is critical for a successful resuscitation.

Male patients had a higher rate of CA compared to female patients, the highest percentage of patients with CA had a median age of 56 to 76 years old for male patients and of 75 years old or above for female patients .

From the total number of patients who received emergency care from SMURD MIC Sibiu 356 of them received CPR and only 148 were declared dead without proceeding with CPR.

#18843 : Glass Thermometer Injuries**Authors:**

Metin Uysalol (1), Demiroglu Zeynep (2)

1. Department of Pediatric Emergency, Istanbul University, Istanbul Faculty of Medicine, Istanbul, TURKEY
2. Pediatric Emergency Department, Istanbul University, Istanbul Faculty of Medicine, , Istanbul, TURKEY

Keywords: glass, mercury thermometers, morbidity, alternative thermometers

Abstract :

Background: Mercury-in-glass thermometers have long been used for measuring body temperature. After a while, they have been prohibited because mercury-in-glass thermometers lead to mercury poisoning when they are broken. However, outdated mercury-in-glass thermometers and newly-developed glass thermometers made from alcohol or non-toxic substances are still available in the market. In this study, the main objective was to present a novel and a large series of a clinical study which also includes management of non-electronic thermometer glass thermometer accidents.

Methods: We performed a retrospective cohort study of glass thermometer related injuries in children evaluated in a pediatric emergency department between March 2011 and March 2019. Case identification was performed using a computer-assisted screening tool followed by a manual chart review.

Results: Twenty five patients were identified among 375,900 who presented to the emergency department during the study period. Median patient age was 3.2 +/- 1.62 years; 10 patients (40%) were female. 18 (72%) of the accidents occurred due to biting and 7 (28%) of them occurred due to a broken thermometer. Three patients (12%) presented with small lip injuries due to biting while 4 patients (16%) presented with a small amount of mercury particles in the mouth. No complaints and no pathological findings were found during examinations from the day of admission until discharge. 19 (76%) of the thermometers included grey liquid while 6 of them (24%) included red liquid. 16 (64%) of the thermometers included mercury, 5 of them (20%) included alcohol and 4 (16%) included non-toxic substances. A group of patients were tested and their serum mercury levels were 4.12 +/- 3.19 (min 0.5, max 12.2) mg/L (normal 0.6-59 microgram/L), urinary mercury 3.81 +/- 2.14 (min 1.2, max 10.0) (normal 0.1- 20 microgram/L). Serum ethanol measurement was performed in one patient 10 (0-50 mg/dl normal). In 10 of the cases (40%), thermometer substances were present in the environment and in 20 patients (20%) cleaning of the place was not performed adequately.

Discussion & Conclusions: Most of the devices we use in our daily lives include mercury. In general, due to their misuse by children, exposure to mercury may occur. Exposure to mercury, even if it is a short period, may have an impact on the whole body and the visual system. Ministry of Health of Turkey General Directorate of Pharmaceuticals and Pharmacy, dated 22 October 2009, announced that mercury-in-glass thermometers would not be sold and be present in the market as of this date. Although our study started after this decision and the cases related to mercury-in-glass thermometers declined in number, there are still considerable amount of cases. It can be concluded that in the cases, the cleaning of the place is not performed adequately after the injury. It is of great importance that public and the healthcare staff should be informed regarding the usage of non-digital glass thermometers. Training programs should be organized periodically for the prevention of potential accidents of these thermometers and their management. The utilization of alternative thermometers should be promoted.

Trial Registration / Funding Information (only) :

"This study did not receive any specific funding."

#18844 : Paroxysmal supraventricular tachycardia in the prehospital setting**Authors:**

Noemi Cristescu (1), Doroteia Andreea Miholcea (1), Raluca Radu (1), Ana Maria Mitruț (1), Andreea-Maria Mazilu (1), Andreea-Ana Săcădat (1), Ana-Daniela Țăran (1)

1. Emergency Department, UPU-SMURD Sibiu, Sibiu, ROMANIA

Keywords: Paroxysmal supraventricular tachycardia, Amiodarone, age, gender, blood pressure

Abstract :**Background:**

Paroxysmal Supraventricular Tachycardia (PSVT) is a relatively frequent emergency affection in the prehospital setting, a condition with worsening potential of the hemodynamic status, depending of the moment of the treatment initiation.

The present study aimed the therapeutic diversity for the conversion of the PSVT to sinus rhythm, and also the incidence of PSVT diagnosed patients in Sibiu, Romania according to their age group, patient gender and blood pressure level.

Materials and methods:

The study was performed through a retrospective observational method on a number of 2321 cases that occurred to SMURD Mobile Intensive Care Unit Sibiu between 1.01.2017-31.12.2018, out of which 64 cases of PSVT.

Results:

Out of a total of 64 patients with PSVT, 10 patients (15,62%) were converted through vagal maneuvers, the rest of 54 patients (84,38%) were given medication, successfully in a number of 36 cases (66,66%). The remaining 18 patients (33,34%) were not able to convert to sinus rhythm in the prehospital environment.

Among the patients that were converted with intravenous medication, 72,22% were given Amiodarone, 16,66% received Adenosine and 11,11% converted with Verapamil, also another percent of 11,11% initially received Adenosine or Verapamil, but were later responsive to Amiodarone.

Distribution by gender: 30 women (46,87%), of which 8 patients between 25 and 40 years old (26,66%), 4 patients between 40 and 55 years old (13,34%), 12 patients between 55 and 70 years old (40%), and 9 patients over 70 years old (30%) and 34 men (53,13%) of which 2 patients under 25 years old (5,88%), 4 patients between 40 and 55 years old (11,76%), 8 patients between 55 and 70 years old (23,52%), and 18 patients over 70 years old (52,94%).

Considering the blood pressure, 6 patients were hypotensive (9,37%), 32 patients presented with normal blood pressure (50%), 20 patients had arterial hypertension stage 1 (31,25%), 4 patients had arterial hypertension stage 2 (6,25%) and only 2 patients presented with arterial hypertension stage 3 (3,13%).

Conclusions

The primary medical treatment was based on vagal maneuvers, effective only on a small number of patients. Most patients who suffered PSVT were converted successfully with Amiodarone.

Looking at the male patients, PSVT had the highest frequency among the patients with the age exceeding 70 years old. On the other hand, the feminine group presented a larger incidence at the ages between 55 and 70 years old.

The majority of the patients presented normal blood pressure levels on examination, but a considerable part of them presented stage one hypertension and, at the same time, a few of them were found hemodynamically unstable.

#18854 : Assessment of inferior vena cava/abdominal aorta diameter index in classification of traumatic patients with hemorrhagic shock**Authors:**

Kavous Shahsavari Nia (1), Mahboub Pouraghaei (1), Payman Moharamzadeh (1), Ramin Majlesi (2), Tahmoures Poursafar (3)

1. Emergency medicine research team, Tabriz University Of Medical Sciences, Tabriz, IRAN, ISLAMIC REPUBLIC
2. , Majlesi Health Institute, Tabriz, IRAN, ISLAMIC REPUBLIC
3. , Tabriz University Of Medical Sciences, Tabriz, IRAN, ISLAMIC REPUBLIC

Keywords: Emergency - Trauma - Hemorrhagic shock - Sonographic index

Abstract :

Introduction: Intravascular volume, in other words, effective circulation volume, is the most important factor in determining the hemodynamic status of patients. The amount of body need for fluid can be estimated by clinical examinations, pulse and blood pressure changes and urine control. In this study, we examined the relationship between inferior vena cava diameter and aortic diameter in the classification of hemorrhagic shock trauma patients in the emergency department of Tabriz University of Medical Sciences.

Materials and Methods: This cross-sectional study was carried out to determine the relationship between Inferior Vena Cava diameter and aortic diameter in the classification of patients with traumatic hemorrhagic shock referred to the emergency department of Imam Reza Hospital in Tabriz. The criteria for entering the study included all cases of traumatic hemorrhagic shock trauma to Emergency Hospital of Tabriz Imam Hospital. Exclusion criteria included the underlying liver, cardiovascular, and coexisting dehydration.

Results: In this study, 69 patients with hemorrhagic shock trauma who referred to Emergency Hospital of Tabriz were admitted to the study. 58 (84.1%) were men and 11 women (15.9%) were women. The mean age of the patients was 36.36 ± 12.37 years. The highest percentage recorded for the primary complaints of accidents for patients, the highest rate of injury damage in patients studied is reversal type. In a separate study for calculated indexes and their correlation with the severity of shock classified for patients, there was no significant relationship between shock intensity according to the category (all p-values were greater than 0.05).

Conclusion: This study showed that the highest rate of patients with hemorrhagic shock with carotid traumatic mechanism has been reported with abdominal injury. The diameter of the lower anterior vein diameter in aortic tail / diameter with a nearly acceptable sensitivity and specificity in patients with hemorrhagic shock trauma can be used. Also, a training course for emergency medical residents to take ultrasound indications to confirm the patient's shock situation and adequate measures.

#18857 : Assessed and discharged – short-term emergency department visits

Authors:

Hassan Al-Mashat (1), Tim Alex Lindskou (1), Jørgen Munkhoff Møller (2), Marc Ludwig (3), Erika Frischknecht Christensen (1), Morten Breinholt Søvsø (1)

1. Centre for Prehospital and Emergency Research, Aalborg University, Aalborg, DENMARK
2. Emergency Department & Trauma Centre, Aalborg University Hospital, Aalborg University Hospital, Aalborg, DENMARK
3. Emergency Department Hjørring, North Denmark Regional Hospital, North Denmark Regional Hospital, Hjørring, DENMARK

Keywords: delivery of care, emergency department, injuries, non-specific diagnoses

Abstract :**Background**

Emergency departments (EDs) play a vital role in the healthcare system either as the freely accessible primary entry point for healthcare or as secondary healthcare referred to by primary healthcare services. Recently, EDs have experienced an increased number of patients including to a greater extent elderly patients with more comorbidity. In addition, some EDs also face decreased available resources (e.g. fewer beds) and crowding in the EDs is now a reality in many countries. It is unclear how these changes affect the ED patient population. We chose to focus on the contribution of short-term ED visits to the ED population and outcome following these contacts.

Aim

Thus, our aim was to investigate 1) the proportion of short-term ED visits (5 hours or less) & 2) the characteristics, diagnoses, patterns of renewed contacts and mortality of patients with short-term ED visits.

Method

Observational cohort study of patients in the emergency departments at three sites in the North Denmark Region 2014-2016. Patients with a valid personal identification number were included. Short-term ED visits defined as 5 hours or less. Primary outcomes were ICD-10 diagnosis chapter, 1- and 30-day mortality and readmissions on days 1 and 2. Data was retrieved from the Patient Administrative System and the Danish Civil Registration System. Descriptive statistical analyses and Kaplan-Meier mortality estimates were performed.

Results

During 2014-2016, there were 280 365 contacts to the EDs in the North Denmark Region. Of these, we included 134 362 ED visits with duration of 5 hours or less (47.9%). Mean age was 32 (IQR: 16-57), 48.6% were female.

Top five ICD-10 chapters were injury and poisoning N=80 862 (60.2%), other factors N=19 725 (14.5%), symptoms and signs N=15 568 (11.6%), musculoskeletal disease N=3 643 (2.7%) and respiratory disease N=2 413 (1.8%). Overall mortality was 1-day: 0.30% (0.27-0.33), 30-day: 0.74% (0.70-0.79), with the highest mortality among circulatory diseases: 1-day: 10.67% (9.38-12.12) 30-day: 11.94% (10.59-13.46).

Number of renewed contacts on days 1 and 2 after discharge were N=4 696 (3.5%) and N=1 652 (1.2%). ICD-10 chapter from the initial contact for patients with renewed contact on day 1: other factors N=2 522 (53.7%), injury and poisoning N=1 587 (33.8%) and symptoms and signs N=223 (4.8%) and on day 2: injury and poisoning N=951 (57.8%), other factors N=258 (15.6%) and symptoms and signs N=172 (10.4%). Overall mortality for patients with renewed contacts on day 1 or 2 was: 1-day 0.02% (0.00-0.11) and 30-day: 0.43% (0.29-0.62).

Discussion and conclusion

Almost half of all ED contacts were short-term visits and predominately due to injuries, which explains the young mean age and low overall mortality. Non-specific diagnoses was the second largest group of patients. Overall, only few patients had a renewed contact within 1 or 2 days. Nevertheless, patients who received non-specific diagnoses during the first admission comprised the largest group of readmitted patients on day 1.

Further research on the non-injury group of patients is needed, in particular the non-specific diagnoses.

Trial Registration / Funding Information (only) :

None/ Erika Frischknecht Christensen holds a professorship supported by a grant given by the philanthropic fund TrygFonden to Aalborg University. The grant does not restrict any scientific research.

#18858 : Management of patients with Gram negative bacteremia in Emergency Department observational Unit**Authors:**

Nishan Purayil (1), Fayaz Ahmad Dar (2), Salem Abo Salah (3), ThimmeGovinda Gowda (2), Shoukat Dar (4)

1. Physician, Hamad Medical Corporation, Doha, QATAR
2. Internal Medicine, Hamad Medical Corporation, Doha, QATAR
3. Internal Medicine, Hamad Medical Corporation, DOha, QATAR
4. Emergency Medicine , Hamad Medical Corporation, Doha, QATAR

Keywords: bacteremia , Length of stay, Observational Unit

Abstract :**Introduction****Introduction:**

Hospitalizations for bacteremia have risen over the past decade in the United States and Europe [1,2]. Because length of stay (LOS) is a primary determinant of hospital costs, reducing length of stay (LOS) for patients with bacteremia may have substantial economic implications(3).Over the past decade there was a gradual reduction in LOS for patients admitted with bacteremia. (4). Few studies noted an increase in mortality and readmission among patients discharged early, while other studies failed to substantiate this. Measures implemented by the administration for efficiency improvement and early discharge policies of the hospitals have resulted in substantial decline in LOS

Background and rationale to the project:

Patients presenting to Emergency department are admitted to ED Observational unit for further care (As per the policy of the Unit). For these patients blood cultures are sent either from emergency department or after admission to the unit. These patients are either discharged home with appropriate follow up plan or admitted to the Medical unit.

We plan to analyse the average LOS of patients admitted to Observational unit and diagnosed to have bacteremia .We will measure the admission rates to medical unit and also the readmission dates in 30 days period

Material and Methods:

Patients admitted to ED Observation unit and had a positive blood culture report was recruited. The demographic details, LOS and readmission rates of patient with gram negative bacteremia collected. Data for 6 months (Oct 2017 to March 2018) is obtained from electronic medical records. Required approvals were obtained from the quality improvement committee of the department. Confidentiality of the patient maintained and the data collected were accessible only to the participants of the study

Results and DiscussionP

Total 53 cases were diagnosed to have bacteremia during the study period. 3 cases were excluded because the blood culture was reported as possible contamination. Majority of the subjects were in age group below 40 (n= 28, P-56%) .In 66 % (n=33) of cases gram stain study demonstrated gram negative organism

On analysis of the disposition 33 cases (66 %) were discharged from the unit while17cases required admission to the inpatient unit.8 cases were readmitted within a period of 30 days out of which 6 patients required admission for the same problem. The average LOS of patients diagnosed to have bacteremia is 25:05 Hrs while the LOS of all patients admitted to the unit during the study time was 17:26 Hrs

Conclusion:

E coli was the most common organism isolated in patients with bacteremia .Length of stay was more in patient with bacteremia however readmissions were comparable to other studies conducted in various centers

#18860 : Diagnostic value of chest x-ray in evaluation of patients with fever and no respiratory signs or symptoms in the emergency department – a prospective cohort study**Authors:**

Sacha de Stoppelaar (1), Liza Pereverzeva (1), Bram Hafkamp (1), Nikki Lips (1), Floor Tielbeke (1), Linde Rustenburg (1), Caroline Hoogerheide-Wiegerinck (2), Koen de Heer (1)

1. Division of Internal Medicine, Flevoziekenhuis, Almere, THE NETHERLANDS
2. Division of Emergency Medicine, Flevoziekenhuis, Almere, THE NETHERLANDS

Keywords: fever without localizing signs or symptoms (FLS), pneumonia, Chest X-Ray(CXR), diagnostic value

Abstract :

Background: Fever without localizing signs or symptoms (FLS) is a frequently encountered clinical problem in the emergency department (ED). Among other tests, Chest X-Ray (CXR) is embedded in routine workup for FLS in most Dutch hospitals. While routine CXR is suggested in the NICE guideline for sepsis, evidence supporting this practice is limited. To our best knowledge, diagnostic value of this CXR has never been investigated in these ambulant ED patients with FLS, therefore our aim was to validate its use.

Methods: A prospective cohort study was conducted from April 2017 until May 2018 in the ED of the Flevoziekenhuis, Almere, a Dutch medium-sized urban teaching hospital with 386 beds. All adult patients who were referred to the ED for the internist with a suspected infection (defined as a body temperature of $>38,0^{\circ}$ C or $<36,0^{\circ}$ C or CRP of >100 mg/L) were included. Our primary outcome was the number of pulmonary infections that were diagnosed by CXR in patients with fever *and* no respiratory complaints or abnormalities at pulmonary physical examination (FLS) *and* no obvious extrapulmonary site of infection. Collected data included documentation of the patient's comorbidities, history of respiratory symptoms (defined as cough, dyspnea and/or chest pain), vital signs (temperature, heart rate, respiratory rate, pulse oximetry, Glasgow Coma Score), lung auscultation and hospital admission if needed. CXRs were analyzed by experienced radiologists. Differences in continuous nonparametric data were analyzed using a Kruskal Wallis test; categorical data were analyzed using a chi-square test. Post hoc testing of nonparametric data was performed using a Dunn's test of multiple comparisons using rank sums and by using chi-square post-hoc testing with the Benjamini&Hochberg correction method for parametric data.

Results: Of the 2920 patients that were presented for the Internal Medicine at the ED, 741 patients met the definition of suspected infection and were included in our cohort. In 274 patients, an obvious extra-pulmonary site of infection was found. Another 365 patients presented with respiratory symptoms or signs. Reliable medical history could not be obtained in 32 patients due to delirium, cognitive impairment or a language barrier. A total of 70 patients were judged by the treating physician not to have localizing symptoms or signs (FLS). Baseline characteristics were similar between the groups, with exception of a lower age in patient with FLS compared to both other groups. Hospital admission rates were not significantly different between the groups. In patients with respiratory complaints CXR showed infiltrative abnormalities in 96 patients (26.3%). In patients with an unreliable medical history 5 CXRs were suggestive of pneumonia (15.6%). In the 70 patients with FLS none of the CXRs showed an infiltrate.

Discussion & Conclusions: Our prospective cohort of FLS patients presenting at the ED showed there is no diagnostic value of routine CXR. However, patients with unreliable medical history or respiratory complaints/symptoms are a reason to perform CXR. Confirmation of our findings in a larger cohort is warranted.

Trial Registration / Funding Information (only) :

Trial registration: This study was not registered because the medical ethical committee of the AMC agreed on exemption for the need of informed consent since the study only involves recording data from the medical record (ethical advice number: W16_365 # 16.430). Additionally, no harm was done to patients as regular protocol was continued. Funding: This study did not receive any specific funding.

#18861 : Increasing use of EMS by the elderly and patients with non-specific diagnoses**Authors:**

Morten Breinholt Søvsø (1), Torben Anders Kløjgaard (1), Tim Alex Lindskou (1), Kenneth Lübcke (2), Erika Frischknecht Christensen (1)

1. Centre for Prehospital and Emergency Research, Aalborg University, Aalborg, DENMARK
2. Emergency Medical Services, North Denmark Region, Emergency Medical Services, North Denmark Region, Aalborg, DENMARK

Keywords: emergency medical services, non-specific diagnoses, ambulances, elderly

Abstract :**Background**

The use of emergency ambulances has been increasing in recent years. Emergency medical services (EMS) and EMS research primarily focus on time-critical conditions such as cardiac arrest, respiratory failure, myocardial infarction, stroke and severe trauma – the “first hour quintet”. Little is known about the entire EMS patient population in terms of age profiles, the diagnostic pattern and changes over time.

Aim

We aimed to investigate changes in age profiles and hospital diagnoses among EMS patients from 2007 to 2018.

Methods

Population-based historic cohort study including EMS patients in the North Denmark Region during 2007, 2014 and 2018. Ambulance data was retrieved from prehospital electronic medical record and data on hospital diagnoses according to International Classification of Diseases (ICD-10) from the regional patient administrative system. We performed descriptive statistics to report the results as frequencies and percentages.

Results

The overall number of EMS patients with hospital contacts increased: 14 551 in 2007, 23 928 in 2014 and 26 560 in 2018, corresponding to an 80% increase. Especially the older age groups (65+) increased in number and fraction from 4 781/32.9% in 2007, to 9 995/41.8% in 2014 and finally 11 980/45.1% in 2018. Likewise, from 2007 to 2018, non-specific diagnoses increased from 3 993/27% to 10 183/39%. Injuries increased in numbers from 4 999 to 6 537, but decreased in fraction from 34 % to 25 %. Cardio-vascular and respiratory diseases increased in numbers (1 450 to 3 088 and 883 to 2 098) but fractions remained largely unchanged. Finally, psychiatric disease/substance abuse decreased in fraction 962/7% to 1 053/4%.

Discussion and conclusions

The number of EMS patients with subsequent hospital contact almost doubled during the years and number of older patients increased with a factor 2.5. The non-specific diagnoses dominated the pattern with around 40%, while cardiovascular diagnoses constituted only 10-12%. Although time-critical conditions are of great importance in EMS, an entirely different group of patients – the non-specific diagnoses, dominates the population. In addition, more awareness should be directed towards the increasing number of patients with increasing age. In future research, we plan to investigate to which extent demographic changes can explain the increasing age of the EMS population.

Trial Registration / Funding Information (only) :

None /Erika Frischknecht Christensens holds a professorship supported by a grant given by the philanthropic fund TrygFonden to Aalborg University. The grant does not restrict any scientific research.

#18863 : Value of the modified heart score and pathway in patients with non-traumatic chest pain. An observational, prospective study.

Authors:

Michele Domenico Spampinato (1), Federica Rossin (1), Carlotta Rotini (1), Omar Al Hage (1), Giulia Pradissitto (1), Andrea Strada (2), Francesco Ursini (1), Giulio Caio (1)

1. Department of Medical Sciences, University of Ferrara, Ferrara, Ferrara, ITALY

2. Department of Emergency Medicine, Azienda Ospedaliero-Universitaria S. Anna, Cona, Ferrara, Ferrara, ITALY

Keywords: chest pain, risk score, acute coronary syndrome, NSTEMI

Abstract :

Introduction: The History, ECG; Age, Risk Factors and Troponin Score (HEART score) and The HEART pathway are useful clinical risk score designed to identify Emergency Department (ED) patients with chest pain worthy of early discharge without stress testing or angiography. However, many authors have questioned about the subjectivity of the item "History", resulting in a wide intervariability in the evaluation of symptoms. The aim of this study is to propose a more objective evaluation of the symptoms instead of the item "History".

Materials and methods: This is a prospective, observational study performed at ED of Sant'Anna Hospital, Ferrara between February 2018 and April 2019. We included patients with chest pain probably due to ACS, aged > 18 years, with at least a single troponin evaluation and 1-month follow-up with a telephone interview. Patients with STEMI or new left bundle branch block were excluded. A Chest Pain Score (CPS) was evaluated at admission as follow: chest pain localization: retrosternal: +3 points; left hemithorax or epigastrium: +2 points; apex: -1 point.; characteristic: oppressive: +3 points, heaviness: +2 points; stinging: - 1 point; irradiation to one or both arms: +1 point; associated diaphoresis or dyspnea: +1 point. In this modified HEART score (mHEART score), a CPS >3 was classified as "Highly Suspicious", a CPS 2-3 as "Moderately suspicious" a CPS < 2 as "Slightly suspicious". ECG, Age, Risk factors and Troponin was evaluated according to the original HEART score proposed by Six et al. in 2008. Major Adverse Cardiac Event (MACE) was evaluated as the occurrence at 1 month of at least one of the following: acute myocardial infarction, myocardial revascularization, stroke and death.

Results: A total of 470 patients were included (44,3 % female) with a median age of 63,4 years, 14,5% had a MACE. Among 22,6% of patients classified as "low risk" by the mHEART score, 0,94% had a MACE (1 patient). In multivariate logistic regression, CPS > 3 showed OR 3,96 (CI 95% 1,81-13,5; p-value < 0,026). mHEART score had an AUROC of 0,81 (CI 95% 0,76-0,86) and sensitivity of 0,95 (CI 95% 0,9-0,99) and NPV of 0,99 (CI 95% 0,94-0,99) for a cut off of 4. The mHEART Pathway showed sensitivity 0,98 (CI 95% 0,9-0,99) and NPV 0,98 (CI 95% 0,89-0,99).

Discussion: While the item "History" may be scored simply by the judgment of the experienced physician, a guideline such as a scoring model or specific "keywords" may aid in the standardization of the HEART score and pathway. As highlighted in our study, the use of CPS instead of "History" appeared a significant predictor when included in the mHEART score. As well, our score and pathway confirmed the excellent diagnostic accuracy and the rate of < 1% of MACE in patients classified as "low risk" found in previous studies. If confirmed by further studies, mHEART score could be the "common language" for better understanding among clinicians, researchers and hopefully patients.

Trial Registration / Funding Information (only) :

The authors declare no conflict of interest.

#18865 : Incidence of thoracic trauma in the prehospital activity in Sibiu Country, Romania**Authors:**

Ana Maria Mitruț (1), Andreea-Maria Mazilu (1), Aurel Sbârcea (1)

1. UPU-SMURD SIBIU , UPU-SMURD SIBIU, SIBIU, ROMANIA

Keywords: thoracic trauma, car accident, hemothorax, thoracostomy, blunt trauma, chest contusion

Abstract :

Incidence of thoracic trauma in the prehospital activity in Sibiu Country, Romania

Background:

Thoracic trauma encompasses a broad range of injuries that can cause significant morbidity and mortality. Chest injuries can cause death in a matter of minutes and up to several hours after a trauma. Prompt evaluation during the primary trauma survey is key to identifying those injuries which are immediately life-threatening and require rapid intervention.

Materials and methods:

The study was retrospective observational and performed on a number of 2582 of patients who have benefited of SIBIU mobile intensive care from 01.01.2017 to 31.12.2018. Out of the original 2582, 169 patients were suffering from thoracic trauma.

Results:

From the total number of registration cases in Emergency Room of Sibiu during the period 01.01.2017-31.12.2018, 169 were represented by thoracic trauma 6,54%.

The main cases of chest trauma are represented by: car accident that account for up to 67,45%, injuries, followed by fall from a height (15,38%), work accidents (5,91%), stabbing (5,32%), some cases of fire-arm injuries (4,14%). Also, our ambulances ensure the transfer of critical patients from the hospitals near SIBIU or from the Sibiu County Emergency Clinical Hospital to the helicopter landing site or directly to a major trauma service for definitive care, accounting for 0,58% of the thoracic trauma cases in our care.

Severe life threatening chest trauma account for up to 24,85%, out of these the majority consisted of: hemothorax(8,87%), hemopneumothorax(6,50%), open pneumothorax(4,73%), tension pneumothorax(4,14%) and flail chest(3,55%). Potential deadly thoracic traumatism represents 8,87%, often including: pulmonary contusion(2,95%) and aortic disruption(1,77%). The traumatic injuries without deadly potential represent 66,27%, typically involving: rib fractures(7,10%), sternal fractures(5,32%), clavicle fractures(3,55%) and chest contusion(56,80%).

Thoracic trauma is broadly categorized into blunt(75.14%) and penetrating from a knife or a gunshot injury(24,85%) and also into single thoracic trauma(21,89%) and associated thoracic trauma with other injury(78,10%) like craniocerebral injuries, abdominal trauma and also limb fractures.

In the prehospital emergency come also patients with chest trauma who need invasive procedures. Consequently, an essential skill required is the knowledge and ability to perform thoracostomies. Early chest drain management in trauma was accomplished in 2,95% cases.

Conclusions:

The vast majority of chest injuries are related to a car accident -114 cases (67,45%).The chest trauma most frequently met is blunt chest trauma(75,14%). Blunt force trauma can affect the structure of other areas of the body like bones,organs, results showing frequently associated thoracic trauma in 78,10% of the cases.

Regarding the types of thoracic trauma, the clinical picture is dominated by the traumatic injuries without deadly potential (66,27%) represented by the chest contusion(56,80%), but the most impressive are the rapidlyfatalchest trauma, most common- theHemothorax.

Pre-hospital finger thoracostomy in patients with chest trauma can be life-saving, but the percentages show that this invasive procedure is applied only to a small number of patients.

Death through chest trauma represents an important class of traumas on a global level, accounting for about 7,69% out of the total number of traumas presented in medical cases.

#18866 : Outcome in OHCA compared with IHCA - A 2 years retrospective study**Authors:**

Ovidiu Tudor Popa (1), Diana Cimpoesu (1), MIHAELA CORLADE (2), Gabriela Grigoras (1), Anca Haisan (3), Andrei Hancu (4), Alexandru Lazar (5), Paul Nedelea (1)

1. Emergency Department, University of Medicine and Pharmacy Gr.T. Popa Iasi, Iasi, ROMANIA
2. Département d'urgence, UPU - SMURD, Hôpital Clinique Universitaire « St. Spiridon » Iasi, UMF « Gr.T.Popa » Iasi, Iasi, ROMANIA
3. Emergency Dept, University of Medicine and Pharmacy, Iasi, ROMANIA
4. Emergency Dept, Emergency Hospital Sf. Spiridon, Iasi, ROMANIA
5. Resident in Emergency Medicine, Clinical County Emergency Hospital "Sf. Spiridon" Iasi, Iasi, ROMANIA

Keywords: OHCA, Outcome, CPR, Chain of survival

Abstract :

Background: The chain of survival has been demonstrated to improve the chances of survival for victims of cardiac arrest. The chain of survival provides a standard protocol for resuscitation and treatment and will improve the chances of survival and recovery for victims. The chain of survival for adult OHCA are including those links: early recognition, early cardiopulmonary resuscitation (CPR), early defibrillation, emergency medical services (EMS), advanced life support and post resuscitation care. The objective of this study was to assess the survival outcome of OHCA patients and determine the factors associated with improved survival in terms of survival.

Methods: We conducted a retrospective observational study during 2 years (2017-2018), including all the cases of cardiac arrest (430 cases) presented to "Sf. Spiridon" Clinical Emergency County Hospital from Iasi, North-East of Romania. We analyzed the cases of cardiac arrest in adults presented to our services from pre-hospital and hospital (our ED include a pre-hospital team who responds to code red cases in our area). We followed the location, age, witnessed and/or assisted cardiac arrest, time between first call and start of ALS, first rhythm, etiology, ROSC, surviving in first 24 hours. We used for the statistical analysis IBM SPSS v25.

Results: From the total of 430 cases, 64,7% were males. The mean age of the patients was 66,96 +/- 14,83 years, and in OHCA mean age was 65,95 +/- 16,15 years. The percentage of OHCA was 36,3% vs 63,7% IHCA. The initial rhythm in study population was asistola in 54,4% (48,9% in OHCA), PEA in 35,3% (43,2% in OHCA), VF in 6,5% (5,7% in OHCA) and VT in 3,7% (2,3% in OHCA). The mean time for initiating CPR in OHCA settings was 7,95 minutes and vary from 1 to 58 minutes. ROSC during first CPR attempt was in OHCA 36,5% and 38,6% IHCA, and survival rate at 24 hours was 32,2% in IHCA and 25,9% in OHCA). The most frequent causes were medical causes (43,7%), followed by the cardiac etiology (31,2%). 86,4% of OHCA were witnessed by lay personnel, and in 15,8% of those cases nobody performs CPR until medical team arrived. We found an indirect correlation between first rhythm of OHCA and ROSC ($p = -0,272$) and a direct correlation between first rhythm and survival at 24h ($p = 0,2016$).

Conclusion:

We found after the analysis of our data that the ROSC rate was close (36,5 OHCA vs 38,6 IHCA) in both settings, but we considered that we found a big difference between survival rate, 32,2% in IHCA vs 25,9% in OHCA. Even if we didn't found any statistically correlation between beginning of CPR maneuvers and survival rate, we found a correlation between first rhythm of CA and surviving rate at 24h, the surviving being decreased in asistola compared with the rest of rhythms. We found that the weak link of chain of survival in this setting (OHCA) is early CPR performed by witnesses.

It is critical to increase bystander/community recognition of OHCA and bystander CPR and AED use.

#18867 : Post-traumatic Stress Disorder (PTSD) In Ambulance Personnel After Terrorist Attacks – A Systematic Review**Authors:**

Maria-Eleni Morou (1)

1. nurse, keelpno, Chalkida, GREECE

Keywords: "rescuers" , "ambulance personnel" , "paramedics" ,"emergency responders" , "first responders" ,"PTSD" , "terrorist attacks"

Abstract :

It has been observed that over the past years there has been an increase in terrorist attacks. Due to the nature of the profession, rescuers are often confronted with incidents such as terrorism and are at increased risk of PTSD as a result of the interaction of the stressful environment and the traumatic events taking place. The aim of study was to investigate the prevalence of PTSD in ambulance personnel after participation in terrorist attacks as well as the research of risk and protective factors and also the effectiveness of treatment measures. The study that was conducted was a systematic review using the "Prisma" method. A research for articles and studies was carried out from October 2018 to March 2019 in databases of Pubmed, Science Direct, Google Scholar, and Scopus.

The articles found after the selection criteria were applied to a total of 28, of which 15 were surveys and 13 searches for which access was possible. The results showed that the incidence of PTSD among rescuers is twice as high as that of the general population and higher than that of police and firefighters at rates close to 22%. Percentages after terrorist attacks are at 3-6%. The most frequent risk factors were the prolonged exposure and extent to the traumatic event, the pressure for the injured to survive and the previous psychiatric history. Protective agents against the onset of PTSD have been demonstrated family and friends support, as well as the ability of the person to self-control and resilience. The low incidence of post-traumatic anxiety disorder in ambulance service following participation in terrorist attacks is probably due to appropriate prior training, readiness and self-control and resilience. It was observed that individuals with a previous exposure to a traumatic event and a previous psychiatric history were more likely to develop PTSD than those with resilience and emotional support

#18868 : Triage evaluation of patients with non-traumatic chest pain: pooling index provides a better risk stratification.

Authors:

Michele Domenico Spampinato (1), Federica Rossin (1), Carlotta Rotini (1), Omar Al Hage (1), Giulia Pradissitto (1), Andrea Strada (2), Giulio Caio (1), Francesco Ursini (1), Roberto De Giorgio (1)

1. Department of Medical Sciences, University of Ferrara, Ferrara, Ferrara, ITALY
2. Department of Emergency Medicine, Azienda Ospedaliero-Universitaria S. Anna, Cona, Ferrara, Ferrara, ITALY

Keywords: chest pain, risk score, acute coronary syndrome, NSTEMI

Abstract :

Introduction: Non-traumatic chest pain is one of the main causes of presentation in the Emergency Department (ED). Among patients presenting with symptoms suggestive of an acute coronary syndrome (ACS), only 15%-30% have ACS. Several triage risk scores have been proposed in order to better identify patients at high risk of having ACS. Chest Pain Score (CPS) is one of the most commonly applied clinical scores in daily clinical practice, but its accuracy still needs additional validation. The aim of this study is to evaluate the diagnostic accuracy of the CPS and propose a modification of the score, the Chest Pain, ECG and Age Score (CPEAS), in order to improve its risk stratification ability.

Materials and methods: This is a prospective, observational study performed at ED of Sant'Anna Hospital, Ferrara. We included patients with chest pain probably due to ACS, aged > 18 years, with at least a single troponin evaluation. Patients with STEMI or new left bundle branch block were excluded. CPS was evaluated at admission as follow: chest pain localization: retrosternal: +3 points; left hemithorax or epigastrium: +2 points; apex: -1 point.; characteristic: oppressive: +2 points, heaviness: +1 point; stinging: -1 point; irradiation to one or both arms: +1 point; associated diaphoresis or dyspnea: +1 point. ECG was obtained within 10 minutes and classified as: ischemic signs according to IV universal definition of IMA: +2 points, non-specific alterations of ST-T, +1 point; non-ST/T changes: 0 points. Age was classified as follow: > 64 years: +2 points, 45-64 years: +1 point; < 45 years: 0 points. We also collected data about demographic characteristics, lab value, department of admission and final diagnosis.

Results: A total of 470 patients were included (44,3 % female) with a median age of 63,4 years (53,2% > 64 years, 31,3% 45-64 years). 11,7% of ECG showed ischemic signs while 17,9% of ECG showed non-specific alteration of the repolarization. A final diagnosis of ACS was made in 11,3% of cases. CPS had an AUROC of 0,63 (CI 95% 0,56-0,71). A cut-off of 4 showed 86% sensitivity and 35% specificity for ACS. The CPEAS had an AUROC of 0,7 (CI 95% 0,65-0,77). A cut-off of 4 had 95% sensitivity and 17% specificity for ACS, while a cut off of 3 had 100% sensitivity and a cut off of 10 had 93% specificity.

Discussion: In EDs with a higher number of daily accesses, an effective triage system is extremely important in order to provide a high quality of care of all the patients admitted according to the severity of presenting signs and symptoms. According to our results, the CPEAS can effectively classify patients according to their risk of ACS performing better than CPS. If confirmed by further studies, CPEAS could be an effective tool potentially improving our triage performance, reducing morbidity and mortality.

Trial Registration / Funding Information (only) :

The authors received no specific funding for this work.

#18871 : Analysis of the treatment of hypertensive emergencies**Authors:**

Renata Ruseckaite (1), Vytautas Juknevičius (2), Juste Gavelyte (3)

1. Emergency Medicine resident, Clinic of Emergency Medicine, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University, Vilnius, LITHUANIA

2. dr., Clinic of Cardiac and Vascular Diseases, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University, Vilnius, LITHUANIA

3. student, Vilnius University, Faculty of Medicine, Vilnius, LITHUANIA

Keywords: hypertension, hypertension emergencies

Abstract :

Aims: Our aims were to evaluate most common complains, commonly used medications for ambulatory therapy of hypertension, treatment of hypertension crisis in the emergency department (ED) and a number of repeated visits to ED for hypertension emergencies.

Introduction:

Disorders of arterial blood pressure regulation and hypertensive emergencies are one of the most common causes of patients visiting ED.

Methods: A retrospective observational study was conducted from 2018 January till November. Data randomly included patients admitted to the University Hospital Emergency Department (ED) and diagnosed with hypertensive crisis. The various characteristics were registered: age, sex, time spent in the ED, etc. Patients were divided into two groups based on the specialist who treated the patient: the first group was treated by cardiologist (C), the second group- by internist (I). Statistical analysis was performed by R Commander software, the difference between the variables was reliable if $p < 0.05$.

Results:

Total cases of 80 patients with the hypertensive crisis were analyzed. Mean age was 65.33 (± 12.06) years old with 46.25 % (n=37) patients being male and 53.75 % (n=43) female. The average time spent in the ED was 4.21 (± 4.13) h. The mean systolic blood pressure (SBP) was 175.75 \pm 27.75 mmHg, diastolic BP - 91.85 \pm 15.29 mmHg. 18 patients (22,5 %) did not use any medication for hypertension or was not diagnosed with hypertension before. 15 patients (18.75%) treated hypertension with one drug, double therapy received 15 patients (18.75%), combination of three drugs- 14 patients (17.5%), 9 patients (11.25%)- used more than three medications for hypertension, 9 (11.25%) patients did not remember which drugs they were using or there was no information about drug use. Patients with a hypertensive crisis in ED all together reported 186 complaints. The most common were: high SBP (n = 31 (16.67%)) and chest pain (n = 27 (14.52%)). In total 46 different drugs were used to control hypertension in ED. Statistically significant difference between cardiologists and internal medicine doctors used medication for treatment was: Metoprolol i/v (C-7, IM-1, $p = 0.02$), MgSO₄ i/v (C -5, IM-19, $p = 0.00063$), Captopril pills (C-18, IM-6, $p = 0.003$), Nifedipin pills (C-1, IM- 6, $p=0,003$). There was no statistically significant difference between other used medications. Cardiologists are more likely to adjust ambulatory antihypertensive treatment: for 24 patients, internal medicine physicians-11 ($p = 0.003$). 23 (28.75%) patients have returned to ED because of high BP in the next 6 months.

Conclusions. The majority of patients treated for hypertension emergency in ED were already receiving anti-hypertensive drugs on an ambulatory basis. Treatment of hypertensive crisis in ED has not been standardized and differs among physicians. Cardiologists - more often correct ambulatory treatment. Almost one-third of patients return to the ED due to increased blood pressure.

#18872 : Thoracic trauma (TT) - a challenge for the emergency service in Sibiu Country, Romania**Authors:**

Ana Maria Mitruț (1), Andreea-Maria Mazilu (1), Aurel Sbârcea (1), Noemi Cristescu (1), Doroteia Andreea Miholcea (1), Raluca Radu (1), Andreea-Ana Săcadat (1), Viorel Tobias (1), Horațiu Oarga (1)

1. UPU-SMURD SIBIU , UPU-SMURD SIBIU, SIBIU, ROMANIA

Keywords: age group, consciousness status, orotracheal intubation, narcotic, thoracic trauma

Abstract :

Thoracic trauma (TT) - a challenge for the emergency service in Sibiu Country, Romania

Background:

The thoracic, or chest area of the body contains major organs and structures essential to human survival and well-being. Chest injuries range from minor abrasions and contusions, to major blunt and penetrating traumatic events that cause compromise to the airway, breathing or perfusion. It is critical that EMS providers rapidly recognize and, when necessary, treat and transport chest injuries without delay.

Materials and methods:

We conducted a retrospective observational study for patients who sustained intensive care and admitted between January 2017 and December 2018 to the Emergency Room of Sibiu. The total number of patients was 2582 through 169 patients were suffering from TT.

Results:

From the total number of registration cases in Emergency Room of Sibiu during the period 01.01.2017-31.12.2018, 169 were represented by thoracic trauma 6,54%.

Patients were classified and analyzed in three age groups: FIRST GROUP (= 60 years), obtaining the following results: FIRST GROUP (28.40%), SECOND GROUP (45.56%) and THIRD GROUP (26.03%).

Regarding the patients'gender: MALE (68,63%) and FEMALE (31,36%)

After the evaluation of the consciousness status, a percentage of 17,15% were unresponsive and 82,84% were conscious, with the following GCS : minor injuries(GSC=15-13) 76,92%, moderate injuries(GCS=12-9) 7,10% and severe traumas(GCS<8) 15.97%. The severe trauma cases presented the following values: 0% of the patients are first degree (GCS=8), 14,81% second degree(GCS=7-6), 14,81% third degree(GCS=5-4), and 70,37% fourth degree(GCS=3).

Patients with thoracic trauma have presented peripheral oxygen saturation $\geq 90\%$ in a percentage of 87,57% and $< 90\%$ in a percentage of 12,42%. Emergency orotracheal intubation was performed in any situation in which definitive control of the airway was needed (30,76%) and the orotracheal intubation without rapid sequence intubation was required in 88,75% of cases.

Pain in chest trauma is associated with reduced respiratory function, which can lead to serious complications. Intravenous narcotics were required in 37,27% of the trauma patients. Other classes of drugs used in the management of a patient with traumatic injuries are hemostatic drugs used in 6% of cases, the most frequently used- the tranexamic acid.

Conclusions:

Regarding the age and gender, thoracic traumas were most frequently found in the SECOND GROUP class, which consists of patients aged 30 to 59 years, with the higher percentage met in the male gender

The highest percentage of the patients with thoracic trauma were conscious, with minor injuries (GCS: 13-15) and out of those with severe thoracic trauma, the majority had fourth degree traumas (GCS=3).

Concerning the treatment of the thoracic trauma, most patients did not require emergency orotracheal intubation and those who required it were severe cases where the orotracheal intubation did not require rapid sequence intubation. For the analgesia, the emergency doctors prefer intravenous narcotics and to stop the bleeding with the use of tranexamic acid.

#18873 : Assessing pre-test clinical risk of pulmonary thromboembolism in the emergency department: proposal of a modified Wells' score**Authors:**

Michele Domenico Spampinato (1), Federica Rossin (1), Carlotta Rotini (1), Simone Bucci (1), Maria Teresa Migliano (2), Maria Adelina Ricciardelli (3), Andrea Strada (4), Francesco Ursini (1), Roberto De Giorgio (1)

1. Department of Medical Sciences, University of Ferrara, Ferrara, Ferrara, ITALY
2. Department of Medical Sciences, Alma Mater Studiorum, University of Bologna, Bologna, ITALY
3. Department of Emergency Medicine, AUSL Ferrara, Ferrara, ITALY
4. Department of Emergency Medicine, Azienda Ospedaliero-Universitaria S. Anna, Cona, Ferrara, Ferrara, ITALY

Keywords: Pulmonary embolism, risk score,

Abstract :

Study hypothesis: Clinical scores have been proposed to stratify the risk of pulmonary thromboembolism (PTE), although this approach suffers a low specificity and the unavoidable need of computed tomographic angiography (CTPA) scans. Our study aimed to investigate a simple modification to the already validated Wells' score to improve its diagnostic accuracy in the emergency department (ED).

Methods: We retrospectively reviewed all CTPA scans performed in the ED setting to rule out PTE over a one-year (2017) period. Clinical variables potentially associated with PTE were assessed to improve diagnostic accuracy of the Wells' score, thus introducing a modified Wells' score (mWells).

Results: 4413 CTPA were identified of which 504 for suspected PTE. The prevalence of PTE was 23.9%. Amongst clinical data, only SpO₂ consistently correlated to PTE at univariate (OR 2.75, 95% CI: 1.61-4.73) and multivariate (OR 3.78, 95% CI: 2.13-6.72) logistic regression analysis. The mWells' score had a higher AUROC compared to the original Wells' score: 0.71 (95% CI: 0.67-0.75) vs. 0.65 (95% CI: 0.61-0.69) (P<0.01) and improved diagnostic accuracy.

Conclusions: Current clinical stratification tools for PTE are characterised by low specificity, leading to an overuse of CTPA. mWells', rather than Wells', score showed a better predictive performance of PTE detection. Our results suggest that current diagnostic pathway for PTE may be improved by simple adjustments (i.e. mWells') of clinical prediction scores.

Trial Registration / Funding Information (only) :

The author received no specific funding for this work.

#18874 : Patient satisfaction in emergency department**Authors:**

Lauri Tuovinen (1), Teemu Koivistoinen (1), Ville Hällberg (1), Markku Grönroos (1), Ari Palomäki (2)

1. Emergency Department, Kanta-Häme Central Hospital, Hämeenlinna, FINLAND
2. Faculty of Medicine and Health Technology, Tampere University, Hämeenlinna, FINLAND

Keywords: patient satisfaction, emergency department, quality of care

Abstract :**Patient satisfaction in emergency department**

Background

Patient satisfaction is a commonly used indicator for measuring the quality of healthcare. With centralization of emergency care in Finland, the number of patients have increased in all emergency departments (ED). Increasing number of patients are often associated with longer waiting times in the ED. One might assume, that this could lead to an increasing number and proportion of dissatisfied patients.

Objective

The objective of this study was to evaluate association between patient satisfaction and the daily number of ED visits.

Methods

We calculated daily numbers of ED visits in the Kanta-Häme Central Hospital (KHCH) in November 2018. KHCH is fifth biggest secondary hospital in Finland. To analyze satisfaction, we used a commercial HappyOrNot Smiley Terminal™. Smiley Terminal was located in the lobby next to front door. In order to gather information of patient satisfaction, Smiley Terminal uses two different happy and two not happy faces, thus forming a 4-item Likert scale without neutral value. Satisfaction score for each day was calculated by counting the percentage of four different choices (100 points: very happy/ 66 ⅔ p: happy/ 33 ⅓ p: not happy/ 0 p: not at all happy). Number of ED visits were compared with satisfaction score.

Results

There were a total of 3451 patients in ED, in November 2018. From day to day ED visits varied from 90 to 140. About 13.2 % (n=457) of the patients used Smiley Terminal. In total 68% of the answers were very happy, 11% were happy, 6% were not happy and 15% were not at all happy. The average daily score was 78.6. It varied from 42 to 100. In a one single day 100 % of the answer were very happy. There was clear negative linear correlation between ED visits and satisfaction score: $Y = -0.528 * X + 138$, $R^2 = 0.126$.

Conclusion

There seems to be an association between patient satisfaction and the number of ED visits. With greater number of daily ED visits the satisfaction score was lower. This study did not differentiate between individual factors that affect patient satisfaction e.g. waiting times, total length of stay and given services. Also relative low answer rate might somehow affect the results.

#18875 : Post-traumatic Stress Disorder (PTSD) In Ambulance Personnel After Terrorist Attacks – A Systematic Review**Authors:**

Maria-Eleni Morou (1)

1. nurse, keelpno, Chalkida, GREECE

Keywords: "rescuers" , "ambulance personnel" , "paramedics" ,"emergency responders" , "first responders" ,"PTSD" , "terrorist attacks"

Abstract :

It has been observed that over the past years there has been an increase in terrorist attacks. Due to the nature of the profession, rescuers are often confronted with incidents such as terrorism and are at increased risk of PTSD as a result of the interaction of the stressful environment and the traumatic events taking place. The aim of study was to investigate the prevalence of PTSD in ambulance personnel after participation in terrorist attacks as well as the research of risk and protective factors and also the effectiveness of treatment measures. The study that was conducted was a systematic review using the "Prisma" method. A research for articles and studies was carried out from October 2018 to March 2019 in databases of Pubmed, Science Direct, Google Scholar, and Scopus.

The articles found after the selection criteria were applied to a total of 28, of which 15 were surveys and 13 searches for which access was possible. The results showed that the incidence of PTSD among rescuers is twice as high as that of the general population and higher than that of police and firefighters at rates close to 22%. Percentages after terrorist attacks are at 3-6%. The most frequent risk factors were the prolonged exposure and extent to the traumatic event, the pressure for the injured to survive and the previous psychiatric history. Protective agents against the onset of PTSD have been demonstrated family and friends support, as well as the ability of the person to self-control and resilience. The low incidence of post-traumatic anxiety disorder in ambulance service following participation in terrorist attacks is probably due to appropriate prior training, readiness and self-control and resilience. It was observed that individuals with a previous exposure to a traumatic event and a previous psychiatric history were more likely to develop PTSD than those with resilience and emotional support

#18876 : Acute intoxication in the emergency department of a general hospital**Authors:**

Gonçalo Mendes (1), Mafalda Figueira (1), Margarida Madeira (1), Ana Emidio (1), Clara Rosa (1), Eugénio Dias (1), Ermelinda Pedroso (1)

1. Internal Medicine, Centro Hospitalar de Setúbal, Setúbal, PORTUGAL

Keywords: intoxication, poisoning, ethanol, benzodiazepines, icu

Abstract :

Acute poisoning is a major medical emergency carrying significant morbidity and mortality in all age groups across the world. It may have highly variable clinical presentations depending on the substance involved and this variability can lead to delayed recognition with consequent increased morbidity and mortality.

With this study, authors aimed to describe the clinical and socio-demographic characteristics of patients admitted to an emergency department (ED) of a general hospital with a diagnosis of poisoning. A retrospective study analyzed patient admissions in the ED from January 1, 2017 to December 31, 2017.

We found a total of 351 admissions, 314 (89,4%) cases were involved in non-deliberate poisoning, whereas 37 (10,6%) were involved in deliberate poisoning. 196 (55,8%) patients were female and 155 (44,2%) male. The mean age was $48,49 \pm 19,93$. Analyzing the admission, 5,12% (18) of patients had more than one admission to the ED. 88 (25% of total) admissions were due to benzodiazepines, 27 (7,7%) due to pesticides and insecticides, including 1 case of paraquat and 133 cases (37,9%) were due to ethanol intoxication. Excluding ethanol intoxication, most admissions occurred in winter, January: 28 cases (7,9%); February with 26 cases (7,4%) and December with 29 cases (8,26%). From all the admissions only 5,12% (18 cases) needed to be admitted to the Intensive Care Unit and those patients had a mean stay of $10,8 \pm 7,02$ days. Total mortality was 1,42% (5 deaths, 4 in the ICU and 1 in the ED).

Most intoxication cases, except ethanol, occurred in the winter. The poisoning was more common in female than in males. Only a small number of cases needed ICU admission and the global mortality rate was low.

With this work authors tried to help physicians to understand the local data in order to promote early recognition and appropriate management, improving outcomes, reducing morbidity and mortality of poisoned patients.

#18877 : Evaluation of venous thromboprophylaxis in non-surgical patients admitted to an internal medicine ward of a general hospital**Authors:**

Gonçalo Mendes (1), Mafalda Figueira (1), Margarida Madeira (1), Ana Emidio (1), Eugénio Dias (1), Clara Rosa (1), Ermelinda Pedroso (1)

1. Internal Medicine, Centro Hospitalar de Setúbal, Setúbal, PORTUGAL

Keywords: thromboprophylaxis, venous thromboembolism, deep venous thrombosis, pulmonary embolism

Abstract :

Traditionally, venous thromboembolism (VTE), which includes deep venous thrombosis (DVT) and pulmonary embolism (PE), is usually considered a complication of major surgery. However, this view has been changing over the last years. It is well known that hospitalization for a nonsurgical acute disease is associated with an increased risk of the VTE. The primary endpoint of this study was to assess which patients were at risk of a VTE and evaluate if those receiving prophylaxis were receiving the appropriate drug in the right dose and posology. As a secondary endpoint the authors evaluated if the patients suffered a major adverse event during their stay and up to 30 days after discharge.

The authors performed a retrospective cross-sectional study including patients of an Internal Medicine ward at January 27, 2019. Patients admitted for less than 48 hours were excluded. Padua Prediction Score (PPS) was used in order to assess the risk of VTE and the patients divided in two categories – low risk and high risk for VTE.

From a total of 59 patients, 26 patients (44%) were female and 33 (56%) patients were male. The mean age was $80,15 \pm 12,99$ years. Atrial Fibrillation (AF) was present in 22 (37%) patients, with a mean HAS-BLED of $3,2 \pm 1,03$, of those, 18 (30,5%) patients were already under hypocoagulation, the majority 77,8% (n=14), using direct oral anticoagulants. When we evaluated VTE risk, 53 patients (89,84%) had a PPS ≥ 4 . 42 (71,2%) patients were under anticoagulation, and from these, 18 (42,8%) were not receiving the correct dose. 15 (83,3%) were undertreated and 3 (16,7%) were overtreated. From 17 patients who were not receiving thromboprophylaxis, 12 (70,5%) had a PPS ≥ 4 .

Patients did not have any adverse event during their stay or at 30 days after discharge. We were unable to correctly evaluate and measure minor adverse events like local hematomas, however the authors believe they were frequent.

Thromboprophylaxis was inappropriate in 18 patients, 15 of them underdosed and 3 with an excessive dose. 12 patients that had high risk for VTE and were not under hypocoagulation, what was not justified in their clinical records. After this study and in order to improve patterns of prescription of thromboprophylaxis it is being implemented a new guideline for correct anticoagulation of inpatients at our ward.

#18878 : Dynamics of ethnobotanic consumption cases at Emergency in Sibiu**Authors:**

Virgiliu Cezar Bologa (1), Virgiliu Cezar Bologa (1), Alexandra Bota Crisu (2), Anastasia Bologa (3)

1. EMERGENCY PHYSICIAN, "Lucian Blaga" University, Faculty of Medicine; UPU-SMURD Sibiu, Sibiu, ROMANIA
2. PHYSICIAN, "Lucian Blaga" University of Sibiu, Faculty of Medicine, Sibiu, ROMANIA
3. Student, "Lucian Blaga" University, Faculty of Medicine; UPU-SMURD Sibiu, Sibiu, ROMANIA

Keywords: ethnobotanic

Abstract :

INTRODUCTION

The prevalence of drug trafficking and abuse in Romania is increasing and this is a serious problem encountered in Sibiu County as well.

MATERIAL AND METHOD

We conducted a retrospective observational study on a total of 259,920 patients presented at the Emergency Clinical Hospital Emergency Room, between 01.01.2015 and 31.12.2018.

RESULTS

Of the total of 259,920 patients, in the Emergency Room were reported 84 (0.0323%) of ethnobotanic consumption. The annual distribution during the study was: 2015-24 (29.76%) cases, 2016-14 (16.66%) cases, 2017-25 (29.76%), 2018-20 (23.8%) cases. The gender distribution was the following: 10 women (11.9%) and 74 men (88.1%). Patients treated for ethnobotanic use were between the age of 19 and 37. We mention that the study only included people over 18 years of age. The average age of patients with ethnobotanic consumption was 27.07 years, being distributed by 2015 (27.08 years), 2016 (28.78 years), 2017 (28.52 years) and 2018 (24 years). Depending on the residence, 12 (14.28%) come from rural areas, 69 (82.14%) come from the urban area and 3 (3.57%) have their residence abroad.

CONCLUSIONS

The number of ethnobotanic consumption cases was relatively constant. Ethnobotanic consumption is found only among young people, it affects predominantly the male gender in the urban environment.

#18882 : University Hospital Olomouc Emergency Department – an alternative approach to organization of a department providing early hospital care**Authors:**

Hynek Fiala (1), František Horák (1), Vladislav Kutěj (1)

1. , University Hospital Olomouc, Olomouc, CZECH REPUBLIC

Keywords: emergency department, management, health care system, triage

Abstract :

The structure and organization of an emergency department must match the local conditions, community needs and health care system in the region. This was the fundamental premise used by Dr. Hubáček's team in 2005 to tackle a task assigned by the hospital management. The assignment was to build a new emergency department in a large pavilion-type hospital with no area built for that purpose, in a country where similar departments only began to appear and where hardly any emergency medicine specials were available.

It was impossible to transfer the scheme from another country and another health care system. Therefore, a decision was made to create a department by fusing all acute outpatient wards for core specialties and adding a new shock room. The department was placed in a basement area of a new building directly linked to ancillary services. Several enthusiasts were employed at the department, together with contractors from the ambulance service and other hospital departments. Over time, as increasing numbers of patients with non-specific and non-severe problems needed to be treated, general outpatient units were added (similar to A&E in the UK).

At present, the department consists of a general section and a specialized section. As early as during triage, patients with predefined symptoms are directly referred to a specialist; the others are treated in general outpatient units – intensive care, non-trauma and traumatology-surgery. There are 11 monitored triage beds for patients unable to wait for their examination results in a waiting room. In the intensive care section, for critical patients may be treated at the same time. Patients are classified using an in-house triage system. Due to administrative obstacles, a planned transition to the Manchester Triage System has not occurred so far.

In 2018, the Emergency Department treated 73,600 patients, with 18% being subsequently hospitalized. The mean waiting times (triage – contact doctor) are 24 min and 16 min for Priority 3 (green) and 2 (yellow) patients, respectively. The department is expected to be moved to new, more suitable premises.

The department has well established itself as a provider of undergraduate training. At the Faculty of Medicine and Dentistry, Palacký University Olomouc, the department staff teach Emergency Medicine as an obligatory course in the 5th grade and participate in teaching Introduction to Clinical Medicine as well as in training using patient simulators. Although Emergency Medicine has become part of the Czech system of postgraduate training, there remains a shortage of qualified doctors willing and able to work solely at the Emergency Department. Young doctors from other departments need to be involved and to a certain extent, the department is dependent on contractors.

The authors present a well-functioning system for providing acute health care, a potential solution for countries attempting to introduce a network of emergency departments into their health care systems.

#18887 : Ultra-sound guided femoral nerve block for pain mangement in femur fractures in the emergency department

Authors:

ahmed elbeshbeshy (1), asmaa alkafafy (1), mostafa mostafa (2), bassem beshay (3)

1. , emergency department,faculty of medicine,Alexandria university,Egypt, alexandria, EGYPT

2. , anaesthesia department,faculty of medicine, Alexandria university,Egypt, alexandria, EGYPT

3. , criticalcare department,faculty of medicine, Alexandria university, Egypt, alexandria, EGYPT

Keywords: Ultra-sound guided femoral nerve block

Abstract :

Back ground : Fracture femures are common orthopedic emergencies presinting to emergency department . these patients need eeffective analgesia as part of their initial mangement. In this study we evaluate the effectiveness of adding the ultrasound guided femoral nerve block to multimodal analgesia in terms of safety, success rate, onset, durationand patient's satisfaction in patients with femur fractures in the emergency department. After sample size calculation , this study was carried out on 50 adult patients(n=50) who were admitted to the Emergency Department, Alexandria Main University Hospital from1st, ofNovember 2016 to 31th,October, 2017with unilateral femur fracture.

Methods :After exclusions, all patients (n=50) were assigned randomly into two group:

Control group:: 25 patients received paracetamol(1000 mg IV every 6 hours), ketorolac)30 mg IV every 6 hours (and bolus doses of fentanyl)1mcg /kg IV (when pain score > 4.

Intervention group (The femoral nerve block):25 patients received the same analgesia asin control group (to complete the radiological investigation and to avoid confounding) plus femoral nerve block (FNB) which was performed by trained emergency physician of 1-year experience in US- guided peripheral nerve block .

we recorded vital signs ,Pain assessmentby asking the patients to rate their pain on a numerical rating score for pain (NRS) in both groups by a research assistant who was blind to this protocol, with use of a numerical rating score for pain (NRS) in which the patient is instructed to choose a number from 0 to 10 that best describes their current pain. 0 would mean 'No pain' and 10 would mean 'Worst possible pain' at fifteen, thirty, sixty and every 4 hours up to 12 hours after initial evaluation.Pain will be also evaluated at any time of patient's transportation and will be recorded ,Onset of action, duration and assessment of successful block: Evaluation of the sensory block was done with a pin prick method in the dermatomal distribution of the femoral nerve every 2 minutes after local anesthetic injection. Onset of action was defined as the duration between local anesthetic injection and loss of pin prick sensation in the dermatomaldistribution of the femoral nerve. If no loss of sensation occurred for 30 minutes after injection, the block was recorded as a failure. Pin prick was done every 2 hours after confirmation of successful block and duration of the block was identified as the duration between local anesthetic injection and regaining of sensation in the dermatomal distribution of the femoral nerve,Fentanyl consumption , Adverse effects , Patients' satisfaction.

Results : ultrasound guided femoral nerve block (FNB) improved the analgesic regimen in patients admitted to the emergency department (ED) with femur fractures, when added to the standard multimodal analgesic protocol

conclusion : ultrasound (US) guided femoral nerve block (FNB) by emergency physician was safe, rapid, effective, and long lasting option when added to standard analgesia in patients with femur fractures in the emergency department.

#18888 : Acute myocardial infarction hospital admissions: a statistical study on sex, age and thrombolytic therapy

Authors:

Bianca- Andreea Pop (1), Aurel Sbarcea (1)

1. , -, Sibiu, ROMANIA

Keywords: acute myocardial infarction, trombolysis

Abstract :

Background: The study aims to present a statistical approach to acute myocardial infarction (AMI) and how it affects patients of younger ages each year. It is generally accepted that intravenous thrombolysis is the initial treatment for patients with AMI. Data was collected from Sibiu County Emergency Hospital and is structured on age groups, sex and number of thrombolysis over a period of 4 years.

Methods: For this cross- sectional study we collected admission data from the Emergency Department (ED) of Sibiu County Emergency Hospital from 01.01.2015 to 19.03.2019 in order to identify patients presenting AMI, 23 and older. The results cover the population at risk who presented in the previously mentioned ED, which is the biggest in the county. Thrombolytic therapy was applied to the eligible patients using Reteplase (Rapilysin), Alteplase (Actilyse) and Tenecteplase (Metalyse). The incidence of AMI was studied on age groups and sex, while the thrombolysis cases are reported on the overall number of admissions. The outcome exceeded the initial expectations, providing a much higher incidence of AMI in the male than in the female population. Further investigations and angioplasty were conducted on a large percentage that needed to be transferred to Targu Mures Cardiovascular Diseases and Transplant Emergency Institute.

Results: Out of 364 cases of AMI, only 29.2% were female patients. The rest of 70.8% occurred in male population. The age group most severely affected by this condition was 61-70 years old, with 94 cases, followed by the group 71-80 years old, with 86 cases. Only one case belonging to a 23 years old male patient was reported for the group age of under 30. Regarding thrombolytic therapy, 86 cases, corresponding to a percentage of 23.6%, received this treatment. 65.38% needed to be transferred to Targu Mures in order to receive angioplasty.

Discussion & Conclusions: The results show a statistic approach to patients who were admitted to Sibiu County Emergency Hospital with the primary diagnostic of AMI. Highlighted aspects include the rising incidence of the condition in adult male population of ages between 61-80 years old, decreased use of thrombolytic therapy due to ineligible patients and the urgency to provide further angioplasty services to such patients.

#18892 : New Technologies in disaster management administration**Authors:**

Marietta Pateinioti (1), Emmanouil Papadakis (2), Stylianos Xeniadis (3), Maria Farmaki (4), Evika Karamagioli (5), Emmanouil Pikoulis (6)

1. General Hospital of Chios, International Medicine Health Crisis Management, National and Kapodistrian University of Athens, Medicine School, Chios, GREECE
2. Consultant Pneumology Department, General Hospital of Chios, Chios, GREECE
3. Hellenic National Center of Emergency Care, Hellenic National Center of Emergency Care, MAROUSI, GREECE
4. Medical school, National and Kapodistrian University of Athens, Chios, GREECE
5. Deputy Director MSc Program International Medicine Health Crisis Management, National and Kapodistrian University of Athens, Athens, GREECE
6. Professor, Director MSc Program International Medicine Health Crisis Management, National and Kapodistrian University of Athens, Athens, GREECE

Keywords: Technology, mass destruction, management, technological development

Abstract :**New Technologies in disaster management administration**

Authors: M.Pateinioti¹, E.Papadakis², S.Xeniadis³, M.Farmaki⁴, E.karamagioli¹, E.Pikoulis¹

1.MSc Global Health Disaster Medicine, Medicine school, National and Kapodistrian University of Athens 2.Pneumology Department, Chios Hospital 3.Hellenic National Centre of Emergency Care 4.Medicine School, National and Kapodistrian University of Athens

Purpose: To assess if and how new technologies can contribute to preparedness, planning, and confrontation of natural and man-made disasters.

Introduction: Significant emergencies, crises, and disasters have become more common in recent decades, especially in middle- and low-income countries. Many lives could be saved if the affected communities were better prepared, via organized response systems. Under this context, the use of new technologies may help preparedness, planning, and confrontation

Aims & Objectives: The purpose of this study is to map recent data regarding the role of new technologies in managing mass destruction and emergency events. In addition, this bibliographic review aims to develop new scientifically documented guidelines on the use of new technologies in the management of mass destruction.

Methodology: A review of scientific articles carried out for the research. Online search was carried out in PubMed, Embase and Google Scholar search engines between November and December 2018. The search included a combination of various terms in order to identify and display articles that would be closer to possible research. The technologies that were studied included drones, GPS, social media, medical digital identities, electronic triage devices, automated defibrillators, communication systems, total conversation model, ADRAS, simulated training, special uniforms.

Results: The online search of the available literature on the contribution of new technologies to the management of mass destruction has yielded 110 articles. 80 of these were judged as eligible sources from the title and summary presented for general information, 10 of which were selected to be included in the bibliographic review, while the remaining 20 articles were rejected.

Conclusions: First responders and emergency services staff top of the line clothing, equipment, and IT systems to carry out their duties and responsibilities. Emergency services of the future must be characterized by the use of modern technologies and access methods, making full use of inter-service communication systems as well as between emergency services and citizens, and providing citizens with the choice of an easier and more direct way of communicating to meet their needs in emergencies.

Results: The described technologies seem to have a positive impact on disaster administration in different ways.

#18894 : Can non-invasive measurement of cardiac output help to guide fluid therapy; a cohort study in patients with uncomplicated sepsis in the Emergency Department

Authors:

Nienke Koopmans (1), Renate Stolmeijer (1), Ellen van Ieperen (1), Paul van Beest (2), Christiaan Boerma (3), Heleen Lameijer (1), Nic Veeger (4), Ewoud ter Avest (5)

1. Department of Emergency Medicine, Medical Center Leeuwarden, Leeuwarden, THE NETHERLANDS
2. Department of Anesthesiology, Medical Center Leeuwarden, Leeuwarden, THE NETHERLANDS
3. Department of Intensive Care Medicine, Medical Center Leeuwarden, Leeuwarden, THE NETHERLANDS
4. Department of Epidemiology, Medical Center Leeuwarden, Leeuwarden, THE NETHERLANDS
5. Department of Emergency Medicine, University Medical Center Groningen, Groningen, THE NETHERLANDS

Keywords: Sepsis, Cardiac Output (non-invasive), Fluid responsiveness, Passive leg raise, Emergency Department

Abstract :**Introduction**

Fluid administration is part of the bundle of care for patients presenting to the emergency department (ED) with uncomplicated sepsis. However, little is known about the effectiveness of fluid therapy in these patients, as we do not know what the effect of IV fluid administration is on (dynamic) circulatory parameters in these patients. Therefore, it is unknown how many patients will benefit from fluid therapy, and we are unable to predict which patients will benefit most. Invasive measurement of Cardiac Output (CO) to guide fluid administration however, is not feasible in these patients. With this study we aimed to investigate whether non-invasive measurements of (dynamic) circulatory parameters can help to guide fluid therapy in patients with uncomplicated sepsis.

Methods

This was a single centre prospective cohort study, conducted in the Medical Centre Leeuwarden, a teaching hospital in the Netherlands, between May 2018 and March 2019. A convenience sample of 31 adult ED patients with uncomplicated sepsis (based on the most recent sepsis 3.0 guidelines) was studied.

After arrival in the ED, Cardiac output/ Cardiac index (CO/CI), stroke volume (SV) and Systemic vascular resistance (SVR) were determined using the ClearSight non-invasive cardiac output measurement system. Subsequently, a standardized passive leg raise test (PLR) was performed to simulate a fluid bolus administration. Directly afterwards, CO/CI, SV and SVR measurements were repeated. Finally, a standardized IV fluid bolus was administered after which the measurements were repeated.

The primary outcome was defined as the percentage of subjects in whom a PLR test resulted in a clinically relevant (15% or more) improvement in CO/CI. Secondary outcome was defined as the ability of non-invasively measured baseline CO/CI, SV and SVR (baseline- and change in after PLR) to predict fluid-responsiveness correctly.

Before- and after PLR test and fluid challenge measurements of CO, CI, SV and SVR will be compared by paired t-test or Mann-whitney U-test. Univariate correlation analysis using point biserial correlation coefficients will be carried out to evaluate the prognostic ability of various variables to discriminate between patients who are fluid responsive and those who are not. A multivariate logistic regression analysis with backward selection procedures will be carried out to investigate which variables with an $r > 0.2$ contribute independently to the prediction of fluid responsiveness. Likelihood ratio's, sensitivities and specificities will be calculated for the optimal cut off values, and probabilities of being a responder will be calculated for combinations of these variables using logistic regression analysis. A p -value < 0.05 is

considered statistically significant. All statistical analysis will be done with SPSS 24.0.

Results, Discussion & Conclusion

Inclusion was completed just before the deadline of abstract submission. Results will be available to present on the conference in October 2019.

Trial Registration / Funding Information (only) :

Trial Registration: This study is registered on ClinicalTrials.gov (NCT03728998) Funding: This study received financial funding from the SGOfonds, a national foundation that supports research in the specialty of Emergency Medicine by providing funding to diverse scientific studies, and from the Medical Center Leeuwarden Wetenschapsfonds (Scientific fund). Ethical approval and informed consent: This study was determined to be exempt research by our local institutional review board (Regionale toetsingscommissie patientgebonden onderzoek (RTPO) Leeuwarden, protocol number nWMO 271)

#18895 : Comparison of The Effect Of Volume Replacement Fluids On Lung in Rats With Experimentally Induced Sepsis**Authors:**

Arife Erdogan (1), Mumin Alper Erdogan (2), Ali Yücel Kara (3), Ejder Saylav Bora (4), Gürkan Yigittürk (5), Oytun Erbas (6)

1. Emergency Medicine, Izmir Bozyaka Research and Training Hospital, Izmir, TURKEY
2. Assistant Professor, Dept.of Physiology, Izmir Katip Celebi University , Izmir, TURKEY
3. Reserch Asistant, (Dept. of Physiology, İzmir katip celebi University, İzmir, TURKEY, İzmir, TURKEY
4. Reserch Asistant, (DEpt. of Emergeny Medicine, İzmir Katip Celebi University. İzmir, Turkey, İzmir, TURKEY
5. Reserch Asistant, (DEpt. of Histology and Embryology, Mugla Sıtkı Kocman Universty), Manisa, TURKEY
6. Associate Professor, (Dept. of Physiology Istanbul Bilim University), İstanbul, TURKEY

Keywords: sepsis, fluid treatment

Abstract :

Background: Sepsis, the systemic response to infection, is the leading cause of death in intensive care units, worldwide. Mortality rates of sepsis exceed 20%, highlighting the need for new approaches of therapy for this disease. Intravenous fluid resuscitation plays a crucial role in sepsis therapy. Most preclinical studies demonstrate an association between IV (intravenous) fluid therapy and improved outcomes in sepsis. The most affected organ is the lung in multiple organ dysfunction syndrome after sepsis, with lung injury taking the form of acute respiratory distress syndrome. Because of this, in the present study, we aimed to investigate the effects of IV fluids on clinical outcomes in sepsis-induced ARDS.

Materials and methods: Fifty adult male Sprague-Dawley rats were included in the study. The cecal ligation and puncture (CLP) procedure was performed to induce the sepsis model.. Divided into six groups; normal, the cecal ligation and puncture (CLP) group (untreated group), CLP and 40 ml/kg % 0.9 NaCl i.p, CLP and 40 ml/kg % 3 NaCl i.p, CLP and 40 ml/kg Ringer Lactate i.p, CLP and 40 ml/kg Hydroxyethyl starch (6% HES 130/0.4) i.p. All volum replacement tratments was given equally two parts for per 12 hour in day. The study was finished after 24 hours. At the end of the study, histopathological examination of the lungs and biochemical examination from blood.

Results: There was a significant decrease in scores of all histological parameters in the CLP+3% NaCl group, compared to the other groups ($p<0.001$). Examination from arterial blood gas, PaO₂ in group CLP+%3 NaCl group was significantly higher than those in the other groups ($p<0.01$), however, PCO₂ was significantly lower ($p<0.01$). CRP levels were significantly lower in the CLP+ % 3 NaCl and CLP+% 0.9 NaCl groups ($p<0.001$).

Conclusions: In our study crystalloid-treated (especially; % 3 NaCl group) animals showed less lung injury when compared with colloid-treated animals. These results support the interpretation that crystalloids should be preferred in cases of sepsis regarding to ARDS. More investigations are needed to detect the metabolic pathway of crystalloid and colloid solutions to avert lung injury, especially in sepsis.

#18898 : Ceftriaxone Usage in the Academic Emergency Departments: Evidence Based Utilization or overuse**Authors:**

Mahdi Rezai (1), Hasan Safehian (2), Neda Ashayeri (3)

1. Emergency Medicine Management Research Center, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

2. Student Research Committee, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

3. Student Research Committee, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

Keywords: Antibiotic, Guideline, Emergency

Abstract :

Introduction: Ceftriaxone is being used, widely, these days, and it is less according to the current guidelines. The aim of this study was to determine the appropriate usage of ceftriaxone. Considering the results may help looking for a way to prevent its inappropriate use in Emergency Department (ED).

Methods: In an observational-analytical study, the patients referred to EDs of two teaching hospitals since September 23, 2017 to March 19, 2018 who have been treated with ceftriaxone, were analyzed. The rational usage of ceftriaxone was determined based on latest evidence based literatures.

Results: Ceftriaxone had been prescribed properly in 156 patients (38.4%; 95% CI, 33.5-42.9%) and its use did not meet logical criteria in the rest of cases consisting of 250 patients (69.6%; 95% CI, 57.1-66.5%). Logical use of ceftriaxone was independently related to treatment-goaled use, level I triage, urinalysis (U/A) compatible with urinary tract infection (UTI), and chest radiographic evidence of pneumonia.

Conclusion: Our study revealed a range of appropriate use of ceftriaxone not acceptable for a teaching medical center; more education seems to be necessary in this field.

#18899 : A retrospective analysis of tranexamic acid administration in the major trauma population conveyed to the Queen Elizabeth University Hospital, Glasgow.

Authors:

Gage Willox (1), Chase Schultz-Swarthfigure (2), Hannah Smith (3), Malcolm Gordon (3)

1. , University of Glasgow, Glasgow, UK
2. Queen Elizabeth University Hospital, NHSGGC, Glasgow, UK
3. Emergency, NHSGGC, Glasgow, UK

Keywords: tranexamic acid, trauma, bleeding,

Abstract :**Background**

NICE Major Trauma Guidelines, introduced in February 2016, support the administration of 1g bolus of tranexamic acid (TXA) within 3-hours in patients with major trauma and active or suspected bleeding, followed by a further 1g over 8-hours. This recommendation, based on evidence from the CRASH-2 trial, illustrated a significant time-dependent mortality benefit. The Queen Elizabeth University Hospital (QEUH), Glasgow, receives the majority of the West of Scotland's major trauma and was identified as a site where appropriate administration of TXA could yield most benefit.

Aims

To assess those patients admitted to the QEUH, who were administered 1g TXA and whether this was within 3 hours of injury as per NICE guidelines. The second aim was to identify how many of these patients go on to have a second dose of TXA administered as an infusion over 8-hours when clinically indicated.

Methods

After review of supporting literature, a retrospective cohort study was designed. Study population included all trauma patients who were admitted to the QEUH and received TXA between 01/11/2017-28/08/2018. Data concerning demographics and TXA administration were collected electronically from the trauma registry (eSTAG) and verified using electronic clinical records. Twenty-five secondary transfers were excluded as well as ten patients with insufficient data. Data is presented as a mean (standard deviation) or as a median (interquartile range) as appropriate.

Results

One hundred and fourteen patients were identified by eSTAG as having received TXA and were admitted to the QEUH. Of these, 79 patients were analysed and 35 were excluded. Seventy-three (92.4%) patients received their initial dose of TXA within 3 hours and 6 (7.6%) did not. Median time to first dose was 70 minutes (44-110 minutes). Only 1 (0.79%) patient received an incorrect dose of 200mg, all others received 1g.

Of the 79 patients, 9 received a second dose of TXA, 3 as an infusion. All second doses were given within 24 hours of the initial TXA dose, median time 115 minutes (65-162.5). One patient received a second dose of 800mg, the rest received 1g.

Discussion and Recommendations

In spite of current trial data demonstrating a significant reduction in mortality following use of TXA in major trauma with suspected bleeding, this study indicates that this has not yet been incorporated into clinical practice. This is especially true regarding administration of a second dose with only 9 patients receiving this dose and with none of these following the protocol outlined in the literature. One reason secondary dosing might be so low is that it may not be indicated if patients were found not to be actively bleeding. Not being able to verify those that had a clinical indication and those that did not is a limitation of the study.

With current evidence supporting administration of a secondary TXA dose further efforts should be made to encourage this through education of both pre-hospital and hospital practitioners. It should also be highlighted that first dosing of TXA after 3 hours has been associated with higher rates of mortality and should therefore be avoided.

#18901 : QIP- Procedural Sedation in ED**Authors:**

Nicoleta Cretu (1), Megan Kelly (1)

1. Emergency Department, Lincoln County Hospital. UK, Lincoln County Hospital, UK, Lincoln, UK

Keywords: QIP, procedural sedation

Abstract :

Objectives

To implement in ED Procedural Sedation RCEM guideline in order to improve patient's safety. The first audit was completed over the period from 19th of November 2018 to 31st of January 2019, results from documentation pre-procedure, procedure and post-procedure being calculated. The necessity of this QIP arose when an 2017 Audit regarding documentation of procedural sedation in our department revealed non-compliance with RCEM guideline regarding this procedure. As part of this project, A File for "Procedural Sedation" was set up in Resus containing: RCEM guideline for procedural sedation, a new designed Sticker to be applied on the front page of the patient's notes with inscription "Procedural sedation", a table for patients details for auditing, 3xpages booklet to be completed with patient assessment (airway assessment, fasting status, etc), patient's consent, vital signs of the patient, pre and post-procedure leaflet to be given to the patient. nasal capnography set up in Resus airway trolley. Monthly teaching performed in order to promote this project.

Results

From 33 patient who should have had procedural sedation, 16 patients had the procedure. Documentation improved from 0% to 48.48%. From the patient with documented pre-procedure, improvement were found in: ASA documentation (from 0% to 75%), prediction difficult airway (from 0% to 87.5%), documentation fasting status (from 0% to 68.75%), documentation informed consent (from 37% to 100%), pre-procedure leaflet given (from 0% to 100%); documentation procedure in Resus (from 46% to 75%), documentation staffing performing the procedure (from 0% to 87.5%), documentation capnography (from 0% to 12.5%), when oxygen was given (from 0% to 25%), post-procedure leaflet (from 0% to 62.5%), documentation discharge suitability (from 0% to 37.5%).

Discussion

It is room for improvement for documentation oxygen time / quantity administered, capnography monitoring, documentation discharge suitability, which will be recorded on the second audit in progress.

A second audit is in progress at the moment. Because the usage of the nasal capnography is not satisfactory, teaching regarding the capnography usage was attached to the monthly teaching for this project. The final QIP presentation will use a PDSA (Plan-Do-Study-act) model for improvement, measuring the documentation of the pre-, post and procedural patient's management. A Gunt and Run charts will be calculated at the final writing paper of this project.

At the moment a Poster is planned to be placed in RESUS with pictures of the File and capnography and a meeting with a second speciality is in place, in this context Anaesthetics, in order to seek for help in managing the airway for Procedural sedation Project.

Trial Registration / Funding Information (only) :

n/a

#18902 : Prevalence of cause and unnecessary emergent brain Computed Tomography (CT) scan among patients with non-penetrating head trauma; A cross-sectional study**Authors:**

Mahdi Rezai (1), Neda Ashayeri (2), Farzaneh Beigmohammadi (2), Mohammadhosein Ghafouri Abbasabadi (2)

1. Emergency Medicine Management Research Center, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC
2. Student Research Committee, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

Keywords: Emergency; Head Injury; Brain injury; Computed Tomography (CT) scan

Abstract :

Introduction: Prevalence of brain injuries is estimated at about 200 people per 100,000 in developed countries and more than 500 people per 100,000 in the United States. CT scan is in fact a selective method for evaluating patients with skull trauma. More than 98% of hit-head imaging did not have positive finding. This study aimed to evaluate the frequency of CT scan requests without indication in patients with head trauma in Rasoul-e Akram, Firoozgar and Haft-e-Tir university hospitals.

Methods: In this cross-sectional study, patients who were referred to our hospitals with chief complaint of head trauma, during study period, were retrospectively assessed for eligibility. Patients were selected through hospital information system (HIS) and using consensus sampling method. Demographic information of patients as well as signs, symptoms and brain CT scan results were recorded in a predesigned checklist. In the present study, considered brain CT scan indications were resulted from integration of Canadian CT Head Rules, NICE Head Injury Guideline, ACEP Clinical Policy (Rosen) and New Orleans Criteria guidelines.

Results: Eventually 464 (322 male and 142 female) patients were investigated. Mean age of patients was 35.11 ± 18.3 years old and mean GCS score at the time of primary assessment was 14.46 ± 2 . Forty-five patients who were referred or attended to our hospitals did not have intended indications but CT scan was requested for them. Finally 86 cases did not have indications for CT scan among which 41 cases were correctly diagnosed by physicians and CT scan was not performed on them.

Conclusion: In conclusion the result of the present study revealed that about 11% of performed CT scans in trauma patients are unnecessary and without related indications.

#18903 : Performing blood samples during Triage evaluation can improve overcrowding in ED: a Propensity-Score-Weighted Population-Based Study**Authors:**

Tania Marsoner (1), Arian Zaboli (1), Gianni Turcato (1), Gabriele Magnarelli (1), Pasquale Solazzo (1), Eliana Ducati (1), Giulia Scola (1), Annalisa Fioretti (1), Norbert Pfeifer (1)

1. Emergency Department, Ospedale Franz Tappeiner Merano, Merano, ITALY

Keywords: Triage; propensity score; overcrowding

Abstract :

BACKGROUND: the length of stay (LOS) in the Emergency Department (ED) is one of the causes of the overcrowding condition that currently affects most European EDs. As demonstrated in the literature, the LOS of ED patients is increasing and will increase in the coming years. A longer LOS leads to more significant crowding, poorer functioning of emergency services, increased risk of mortality and exponential cost increases. The heterogeneous morbid conditions combined with the increasing comorbidities presented by patients, force an in-depth diagnostic in many cases. It has been proved that 2/3 of patients accessing ED need an instrumental assessment and 1/3 need blood analysis. The patient's diagnostic path strongly influences the LOS.

OBJECTIVES: to verify whether sending blood samples during the triage process can decrease the LOS and the duration of the medical examination in patients with green and yellow code according to the Manchester Triage System (MTS).

METHODS: a retrospective observational study was performed from January 2018 to January 2019. All patients with a minor code (green and yellow) who needed blood sample for further diagnosis were considered. Patients who performed blood sampling during the TRIAGE evaluation were compared with those who performed blood sampling during the medical visit. Moreover, we calculated and compared the LOS and the time between the start of the medical evaluation and discharge of the two groups of patients. The anamnesis, clinical and severity characteristics documented at the time of triage were recorded.

RESULT: during the study period, 15.596 patients were enrolled. LOS was lower in the group of patients with triage blood sampling with a median of 154 minutes (100 - 231) compared to 172 (119 - 246) in the control group ($p < 0.001$). Overall, the triage blood sampling group was older, with greater comorbidity and with a more severe clinical condition. A propensity score matching was performed to obtain two homogeneous groups. After statistical matching, LOS remained lower in the triage-sampling group of patients (151 versus 175 minutes, $p < 0.001$). In the adjusted multivariate model, the triage blood sample was found to be an independent factor of decrease of the LOS with standardized coefficients $\beta = 0.857$ (0.822 – 0.894, $p < 0.001$). After propensity score matching, we also evaluated the duration of the triage, obtaining an equality of triage times both if the blood sample was taken in triage or during the medical examination, the total duration of the triage lasted 4 minutes.

CONCLUSION the execution of blood samples by the triage nurse reduces the LOS of non-urgent patients in ED and significantly reduces the duration of the medical examination.

#18904 : A New Model Of Streaming, Urgent Care and Minor Injuries See & Treat In The Emergency Department**Authors:**

Mohammad Ansari (1), Ahmad Ismail (1)

1. , george elliot hospital, Birmingham, UK

Keywords: Streaming, Urgent Care, Minor Injuries

Abstract :

Aim

The aim of this study was to organise multiple streams of care for patients in the Emergency department to achieve the 4hour target. This was to be achieved by moving patients effectively in the department, to reduce patient waiting times in the department, by having suitable effective staffing and improve patient care by reducing admissions and avoiding unnecessary investigations.

Methods

Our Department already has an Urgent care, Paediatric, Major resuscitation and Ambulatory care stream. The layout of the department had to be changed to make rooms for Urgent care and Minor Injuries See & Treat (MIST). We introduced a streaming nurse at the reception desk to direct patients to different streams. Our Streaming nurse was able to refer patients directly to General Practitioners as well as Ambulatory Care. We added a MIST Stream supported by a dedicated a nurse and a senior medical practitioner.

Results

The Urgent Care Centre staffed by a General Practitioner and Advance Nurse Practitioner treated nearly 14%patients whilst the MIST stream, staffed by a senior Emergency Medicine Clinician, treated nearly 27% patients. The introduction of a new stream improved waiting times. The average waiting time in Urgent care and the MIST Stream now is a maximum of two hours. The number of investigations have reduced and our discharge rate from the Emergency Department has increased from 82% to 86%.

Conclusions

The multiple streams of care improve waiting times, reduce investigations and admission rates in the hospital.

Trial Registration / Funding Information (only) :

This research was not registered as it did not involve any patients. This study did not receive any specific funding. Conflicts of Interest: None

#18908 : The rotational paramedic model; A qualitative study to assess feasibility**Authors:**

janette turner (1), Julia Williams (2)

1. Health Services Research, University of Sheffield, Sheffield, UK
2. School of Health & Social Work, University of Hertfordshire, Hatfield, UK

Keywords: EMS, workforce, prehospital care, evaluation

Abstract :

Background

EMS services in the UK are facing significant challenges in the recruitment and retention of a sustainable paramedic workforce. Development of advanced and specialist paramedic practitioner roles have created highly skilled healthcare professionals who are in demand in other sectors of the NHS, particularly primary care hence there is competition for this workforce. One potential solution is the creation of a rotating paramedic role so that, rather than working within a single environment, a specialist or advanced paramedic can “rotate” through different sectors of the healthcare system whilst remaining employed by one organisation. We evaluated 4 small rotational paramedic pilot schemes to assess if it feasible to implement a rotational model in practice.

Methods

We conducted a qualitative study comprising interviews with 30 participants including specialist & advanced paramedics; ambulance service senior managers; project leads and primary care staff. Interviews were audio recorded and transcribed and entered in to MAXQDA 18 software for analysing qualitative data. Additional data was obtained from high level implementation plans. Key themes and subthemes were identified using framework generated from the original rotational paramedic conceptual model and were explored in more detail and used to construct an evidence matrix.

Results

Rotational schemes comprised 2 or 3 placements within EMS operations, primary care and multidisciplinary community service teams. Participants unanimously agreed that a rotational model should continue but there is a need for flexibility within the model to ensure that local needs are met, whether this be in choice of areas of rotation, length of rotation, or availability of model delivery. The interviews revealed that both paramedics and other healthcare professionals learned a great deal about their colleagues' individual professional roles and that paramedics easily integrated into multi-disciplinary healthcare teams bringing expertise, knowledge and skills that are extremely relevant and versatile. The biggest concerns highlighted by staff were: That this model may not be adopted across the country, which if this were to be the case was identified as a wasted opportunity; The need to consider a new approach to funding healthcare provision to sustain these roles; particular emphasis is needed to developing the EMS Emergency Operations (call centre) and whether this type of role should attract a higher pay band.

Conclusions

The rotational model represents a substantial change of service provision both in terms of scope and complexity. Rotating suitably qualified and experienced paramedics through a range of healthcare delivery settings is feasible and can potentially produce benefits both in relation to recruitment and retention of Paramedics in ambulance services, as well as improving patient experience. This approach to integrated healthcare delivery could improve inter professional and multidisciplinary team working. Further research is needed over a longer time and at scale to evaluate if these benefits are realised.

#18909 : Open door learning: a novel concept in continuing medical education**Authors:**

Biruthvi Vignarajah (1), Umesh Salanke (2), Laura Moore (3), Victoria Jones (4)

1. Junior Specialist Doctor, Emergency Medicine, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK
2. Consultant, Emergency Medicine, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK
3. Postgraduate Medical Education Coordinator, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK
4. Junior Doctor Liaison Manager, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

Keywords: open door learning, open access, medical education, continuing medical education, teaching, training, structured learning

Abstract :

University Hospitals Birmingham (UHB) NHS Foundation Trust is one of the largest teaching hospital trusts in England, with nearly 800 junior doctors working across all sites. The trust is a Level 1 Trauma Centre and provides services in nearly every medical and surgical speciality. Nearly 2.2 million people are seen and treated every year by the trust, which serves not only patients regionally, but those from across the nation and abroad as well.

As a teaching hospital trust, each training program at UHB provides its trainees and non-trainees with weekly structured teaching sessions aimed at improving knowledge related to their speciality. There are approximately 15-20 teaching activities occurring concurrently at the trust on a weekly basis. These include, but are not limited to, departmental teachings, journal clubs, grand rounds, medical imaging rounds, and trust/deanery teaching days. At present, these activities are usually aimed at doctors working in that department or speciality. While such teaching sessions are instrumental in helping physicians become experts in their respective fields, every clinician knows that patients do not present with just one condition in isolation. There is a need to be aware of patient comorbidities, disease interactions, and treatment interactions. As such, maintaining knowledge outside of the physician's area of expertise becomes forefront. While numerous online resources (i.e. podcasts, e-learning modules, FOAMed web sites) exist, the opportunity to engage in structured teaching sessions outside the individual physician's chosen speciality is limited.

To the best of our knowledge, there are currently no official programs in place nationally that offer physicians the opportunity to attend structured teaching sessions of other specialities. We aim to assess the desire for engaging in such activities by circulating a survey among trainees and non-trainees at our local hospital. We will then implement an "open door learning" program that allows physicians to attend teaching activities of other departments/specialities. Details of teaching activities will be circulated via email bulletins and/or notice board postings. Medical professionals will be invited to attend these sessions in their own time, provided their attendance does not compromise patient care or ongoing clinical duties. A post-program implementation survey will then be used to assess success of the program and to gain feedback. In this way, we aim to provide physicians with easy access to a wide array of continuing medical education opportunities that will translate to improved patient care.

#18910 : Screening of findings of computed tomography for minor blunt head injury among pediatrics in the emergency department of alexandria main university hospital**Authors:**

Eman Gaber (1), Wael Fouad (2), Tamer Ibrahim (2), Asmaa Alkafafy (1), Karim Gaber (2)

1. , Emergency department, Faculty of medicine, Alexandria University, Egypt, Alexandria, EGYPT

2. , Neurosurgery department ,Faculty of medicine, Alexandria University, Egypt, Alexandria, EGYPT

Keywords: Pediatrics , head trauma , computed tomography, blunt

Abstract :

Pediatric traumatic brain injury represents an important cause of morbidity and mortality.

Computed tomography scans are the gold standard for diagnosis but also linked to malignancies.

Aim of this study was to determine set of predictive criteria for clinically important traumatic brain injuries and identify children at low risk of clinically important traumatic brain injury to avoid unnecessary scans based on the personal judgement of the emergency physician.

This observational prospective study included 50 pediatric patients who were admitted to the emergency department over one year (November 2016-November 2017)within 24 hours from isolated closed head trauma , aged between (2-18) years with GCS (14-15).

All the data were analyzed using SPSS software package and the patients were divided into two groups : clinically important and non-clinically important traumatic brain injury and both groups were determined according two methods of prediction to expect the need for scan : personal judgement of the emergency physician and PECARN descion rule

Based on this comparison between both methods of prediction to expect clinically important traumatic brain injury CT scan are currently overused and there is avoidable percentage of them to prevent unnecessary scanning and reduce both financial cost and radiological hazards

#18911 : A retrospective cohort study analyzing whether the ottawa ankle rules are correctly applied in the emergency department of a university hospital

Authors:

Pauline Schaumans (1), Carol Clinckaert (1), Ives Hubloue (1)

1. Emergency Department, UZ Brussel, Jette, BELGIUM

Keywords: Ottawa, ankle, rules, university, retrospective, emergency department

Abstract :

ABSTRACT

Purpose

The Ottawa Ankle Rules (OAR) were developed in 1992 in order to develop decision rules for the use of radiography in the emergency department (ED) and reduce unnecessary imaging. The purpose of this study is to evaluate how these OAR were applied in the ED of a university hospital between the 1st of July and the end of December of the year 2016. It examines how the OAR application in the ED has evolved compared to a similar study with data from 2015. The previous study led to changes in protocol as well as the implementation of training to improve the application of the OAR in triage. This study evaluates the success of these changes and trainings as well as whether predictive factors can be identified that drive the application of the OAR in the ED.

Method

In a retrospective cohort study, a sample of patient records aged between 6 and 98 years old with ankle trauma were analyzed, using descriptive statistics, for the application of the OAR at triage and for use of imaging. Logistic regression was used to identify predictive factors.

Results

The OAR were applied at triage in 90% of the cases. This is up from the 60% established by a previous, similar study a year before. However, imaging was still taken in 60% of cases where the OAR were negative. The study could identify some statistically significant predictive factors, but their predictive power is low as they explain 10% of the variation in the data of the OAR application.

Conclusion

The application of the OAR at triage has achieved a high level in this university hospital. The progress from 60% in 2015 to 90% now can be attributed to the training of medical staff in OAR application. The high percentage of imaging taken in OAR negative cases remains an area for further research to identify root causes.

#18913 : The incidence rate of death resulting from meningo cerebral lesions (LMC)**Authors:**

Ramona Andreea Ganea (1), Andreea Ganea (2), RALUCA RUIAN (3), ADELA FARAIAN (2), DENISA VINTILA (2)

1. Emergency Department, UPU-SMURD , Sibiu, ROMANIA
2. STUDENT/ PARAMEDIC, UPU-SMURD , SIBIU, SIBIU, ROMANIA
3. STUDENT, FACULTATEA DE MEDICINA BRASOV, SIBIU, ROMANIA

Keywords: meningo cerebral lesions, accidents, autopsies

Abstract :

BACKGROUND

Considering the substantial number of death resulting from meningo cerebral lesions, we aimed to track the causes that led to these lesions and the number of death. These autopsies were performed at Medical Examiner Service(SJML) Sibiu between 2014-2018.

MATERIAL AND METHODE

The current retrospective research is made on a total of 1814 autopsies, performed at SJML Sibiu, between the period of 1 january 2014 – 31 December 2018. From this total, 243 had meningo cerebral lesions.

RESULTS

From a total of 1814 autopsies, performed at SJML Sibiu, the number of meningo cerebral lesions was 243, which represents 13,39 %, being distributed as follows: in 2014- 53 patients (21,82%), in 2015- 45 patients (18,51%), in 2016- 46 patients (18,93%), in 2017- 49 patients (20,16%) and in 2018- 50 patients(20,58%).

From these medical situations 104 (42,80%) came from the urban area and 139 (57,20%), from the rural area, and in terms of their gender distribution: 179 (73,66%) are man and 64 (26,34%) women.

During the study, patients with LMC was divided into aged groups as follows: 8 (3,30%) < 18 years, 72 (29,60%)- 19-39 years-, 101(41,57%)- 40-59 years-, 46 (18,93%)- 60-79 years-, 16 (6,60%) >80 years.

During the study, the causes that led to these lesions were: road accident - 103 (42,40%), railway accident- 18 (7,40%), forest accident – 11 (4,52%), falling out from the same level or height - 82 (33,75%) and aggression- 29 (11,93%).

CONCLUSIONS

Our research based on a 5-years period of study reveals that the number of patients with LMC during the autopsy is significantly higher to men compared to women and the number of rural patients is predominant.

Most patients fall into age groups: 19-39 (29,60%) and 40-59 (41,57%).

Most frequently causes that led to LMC are road accidents and falling out from the same level or height.

The number of death caused by LMC is from 2015-2018 in continuous growth.

#18921 : The new indications in emergency thoracotomy

Authors:

David Jutric (1), Igor Nikolic (2), Vedran Cesarec (3), Domagoj Đikić (4)

1. Emergency medicine resident, Clinical Hospital Dubrava, Zagreb, CROATIA
2. Professor of Thoracic Surgery, Clinical Hospital Dubrava, Zagreb, CROATIA
3. Docent of Thoracic Surgery, Clinic of Thoracic Surgery, Jordanovac, KBC Zagreb, Zagreb, CROATIA
4. Professor of Animal Physiology and Toxicology, Faculty of Science, University of Zagreb, , Zagreb, CROATIA

Keywords: emergency, thoracotomy, indication, blunt, penetrating, thoracic, trauma, adult, , pediatric, nontraumatic, cardiorespiratory, arrest, systematic review

Abstract :

Background: Emergency thoracotomy is a procedure which enables access to the internal organs of the thorax in critically injured or ill patients, and so allows for internal cardiac massage, which improves the systemic and cardiopulmonary circulations, and protects the central nervous system. Today, the main indication for the procedure is the penetrating trauma to the thorax, because earlier studies in the United States and South Africa showed that such patients have the highest rates of survival. However, many modern studies are showing a higher survival rate in blunt thoracic trauma, in extra-thoracic injury, in nontraumatic cardiorespiratory arrest, and in pediatric trauma. New indications in emergency thoracotomy are warranted.

Methods: We did a systematic review research of the role of emergency thoracotomy in blunt thoracic trauma, penetrating thoracic trauma, nontraumatic cardiac arrest, and in pediatric blunt and penetrating thoracic trauma. The pubmed database was primarily used for the obtainment of research articles. The keywords used were emergency thoracotomy in blunt thoracic trauma with 247 total articles obtained, emergency thoracotomy in penetrating trauma with 277 total articles obtained, resuscitative thoracotomy and nontraumatic cardiac arrest with a total of 3 research articles obtained, emergency thoracotomy and pediatric blunt thoracic trauma with a total of 17 research articles obtained, and emergency thoracotomy and pediatric penetrating thoracic trauma with a total of 131 articles obtained. Of these we chose to work with those articles which exclusively researched cardiac arrest caused by the above mentioned mechanisms.

Results: Articles published in past decade in Europe and Japan have shown increased percentages of survival after blunt thoracic trauma. A review article from Europe reported survival rates of blunt thoracic trauma ranging from 12% to 60%. One article showed how survival could be increased by 31%. In nontraumatic cardiac arrest, ROSC rates can be increased to 80% even after 35 minutes of unsuccessful classic CPR, and they appear to be two times higher in asystolic patients. Recent research in pediatric trauma showed that 75% of emergency thoracotomy survivors sustained blunt thoracic trauma.

Discussion: Modern research from Europe and Japan has repeatedly shown higher survival percentages of emergency thoracotomy, after blunt thoracic trauma. Furthermore, in nontraumatic cardiac arrest, internal heart massage of the open thorax increases the chances of survival even after 15 to 20 minutes of unsuccessful classic cardiopulmonary resuscitation. Even though earlier studies from the United States have not proven the utility of emergency thoracotomy in the pediatric population, the latest research in the war zones of Iraq and Afghanistan has done so. Cohort groups where emergency thoracotomy was done have shown higher survival and discharge from the hospital rates than cohort groups where classic CPR was done. In addition, 75% of the survivors sustained blunt thoracic trauma, while previous studies showed 0% survival. Emergency thoracotomy increases the chances of survival and a neurologically intact recovery, after serious trauma including blunt injury to the thorax, as well as in nontraumatic cardiac arrest, in both pediatric and adult populatons. The indications should be revised.

#18922 : Modelling the expected organisational impact of an innovative technique for acute trauma pain management in the emergency department: a multi-criteria decision analysis design**Authors:**

Virginie Eve LVOVSCHI (1), Maxime MAIGNAN (2, 3), Caroline HADJADJ (4), Nathalie PONS KERJEAN (5), Karim TAZAROURTE (6, 7), Mohamed Lamine DIALLO (8), Frédéric LAPOSTOLLE (9, 10), Claude DUSSART (11, 12)

1. Service d'accueil des Urgences, CHRU Charles Nicolle, Rouen, FRANCE
2. Urgences-SAMU, CHU de Grenoble Alpes, GRENOBLE, FRANCE
3. INSERM U 1042, Université de Grenoble Alpes, GRENOBLE, FRANCE
4. Pharmaceutical Department, CHU de Bordeaux, Bordeaux, FRANCE
5. Pharmacist Department, Beaujon Hospital, APHP, Paris, FRANCE
6. Service des Urgences, GH Edouard Herriot, Hospices Civils de Lyon, LYON, FRANCE
7. EA 7425 HESPER, UCB Lyon 1, Université de Lyon, LYON, FRANCE
8. Pharmacy departement, Grand Hôpital de l'Est Francilien, Meaux, FRANCE
9. SAMU 93, Hôpital AVICENNE, BOBIGNY, FRANCE
10. Inserm U942, Sorbonne Paris Cité, Université Paris 13, PARIS, FRANCE
11. Pharmacie et Stérilisation Centrales, Hospices Civils de Lyon, LYON, FRANCE
12. Laboratoire Parcours Santé Systemique EA 4129, UCB Lyon 1, Université de Lyon, LYON, FRANCE

Keywords: Multi-criteria decision analysis model, organisational impact, emergency care, acute pain management, methoxyflurane

Abstract :

Background: Acute trauma pain is not managed optimally in the emergency department (ED). The reasons are partly organisational in nature, as ED crowding and the absence of a trauma care pathway can contribute to oligoanalgesia. Anticipating the organisational impact of an innovative care procedure might facilitate the decision-making process and help to optimise pain management. **Objective: 1-**To model the organisational impact of an innovation in acute pain management for trauma (inhaled methoxyflurane in the ED), introduced alone or combined with a trauma care pathway. **2-**To assess a first MCDA model in emergency medicine for pain management problematics. **Method:** Experimentation of a standardized multiple-criteria decision analysis (MCDA) protocol, designed for this specific context. **Participants and setting:** Eight French experts in ED trauma care pathway (physicians and pharmacists), working in urban tertiary hospitals. **Interventions:** In a 4-step protocol: (i) Selection of organisational criteria for evaluating the innovation's impact; (ii) assessment of the relative weight of each criterion; (iii) development of organisational hypotheses for each criterion; (iiii) software-assisted simulation based on pairwise comparisons of four different scenarios (introduction of methoxyflurane or not, with or without a trauma care pathway). **Main outcomes and measures:** Estimation of the expected organisational impact for methoxyflurane in the ED as a 0-to-100 total score (score >50: positive impact). Relevance of a first MCDA model for acute pain management in trauma in a multiprofessional context. **Results:** Nine organisational criteria were selected. "Mean length of stay" was the most weighted. The integration of methoxyflurane in the absence of a trauma care pathway obtained a total score of 59, with a positive impact on 8 criteria and a neutral effect on 1. The greatest anticipated positive impact was for "Time before analgesic delivery" (score: 70). With a trauma care pathway, the impact of methoxyflurane was greater overall (score: 75) and for each individual criterion. **Discussion and conclusion:** Our MCDA model highlighted the putative positive organisational impact of introducing methoxyflurane in the ED, particularly when a trauma care pathway is implemented. Our results shown the relevance of expert consensus in a context of complex decisions about changes in pain management. MCDA is an innovative tool to facilitate the integration of organisational variables in shared thinking-processes. Applications to other objectives in emergency medicine can be envisaged.

#18923 : Virtual reality glasses can relieve pain in patients during the procedure in the emergency department: A randomized controlled study

Authors:

Mahdi Rezai (1), Neda Ashayeri (2)

1. Emergency Medicine Management Research Center, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC
2. Student Research Committee, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

Keywords: Virtual reality, Pain, Emergency Department

Abstract :

Introduction: Considering the high exposure of emergency physicians in crowded emergency departments with agitated patients, the use of an efficient method for the development of analgesia can lead to more satisfaction of patients and therapists. Therefore, this study aimed to investigate the effect of virtual reality on patients' during the procedure.

Methods: In this clinical trial study, 160 patients referred to an academic hospital, who needed to perform a painful procedure, were included in the study. After obtaining the informed consent, Patients were divided into two group. The cases were given VR glasses showing the film in addition to local analgesia and the control group received only local analgesia, Pain score was asked from patients before, during and after procedure.

Results: In this study, the mean age of patients referred was 37.04 ± 17.17 years. The mean of pain severity at the beginning of study was the same in two groups ($p=0.7$) but during the procedure, patients who were given VR glasses significantly suffered from less pain compared to controls ($p=0.032$) Also after the completion of procedure the cases were more satisfied than controls ($p=0.031$) lower age, higher socioeconomic status, higher literacy level and female gender were independently predicted lower pain scores during the procedure.

Conclusion: The use of VR glasses has a positive effect on pain relief in patients, and this method can be used in emergency departments to reduce patients' pain and increase their satisfaction.

Trial Registration / Funding Information (only) :

IR.IUMS.FMD.REC 1396.9511307023

#18925 : Usefulness of scores in patients admitted to emergency department with vitamine-k antagonists overdose**Authors:**

Hela Ben Turkia (1), Ines Chermiti (1), Ines Belgacem (1), Hanène Ghazali (1), Jamila Habli (2), Souad Chkir (2), Monia Ngach (3), Mohamed Mguidiche (1), Sami Souissi (1)

1. Emergency department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA
2. Cardiology department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA
3. Service des urgences/SMUR, Hôpital Régional de Ben Arous - Tunisie, Ben Arous, TUNISIA

Keywords: vitamine k antagonist, overdose, management, scores

Abstract :

Introduction: Various bleeding risk scores have been proposed to assess the risk of bleeding in patients using oral anticoagulants when starting the treatment or during follow-up. Usually these scores are used to assess mortality or risk of recurrence of overdose. Limited data are available with these scores in patients admitted to emergency department (ED) with vitamin-K antagonists (VKA) overdose.

The aim of our study was to assess three scores: HAS-BLED, ORBIT, ATRIA for predicting mortality at one month after admission to ED with VKA overdose.

Methods: Prospective observational study over three years. Inclusion criteria : Adult patients admitted in ED with VKA overdose. VKA overdose was defined as International Normalized Ratio out of the therapeutic range: more than 4 in conditions with targeted INR 2 to 3 and more than 6 in conditions with targeted INR 3 to 4.5. HAS-BLED, ORBIT, ATRIA scores were calculated at admission. Comparison of sensitivity (Se), specificity (Sp), positive predictive value (PPV), negative predictive value (NPV) Youden and Q Yule indices for mortality at one month.

Results: Inclusion of 220 patients. Sex-Ratio=1, Mean age=69+/-11 years. Mean INR=7+/3. Scores mean+/-SD: ATRIA=4+/-2; HASBLED=2+/-1; ORBIT= 2,5+/-1. Mortality rate at one month was 3%.

ATRIA score: AUC=0.6 (p=0,4 [IC95%][0.326-0.874]) with a cut-off=4; Se=80%; Sp=44%, PPV=22%, NPV=91%, Youden indice=0.24 and strong correlation with Q Yule coefficient=0.52.

HASBLED score: AUC=0.762 (p=0.7 [0.574-0.950]) with a cut-off=1; Se=83%; Sp=60% PPV=31%; NPV=94%; Youden index=0.43 and very strong correlation with Q Yule coefficient=0.76.

ORBIT score: AUC=0.771 (p=0.64 [0.558-0.984]) with a cut-off =2; Se=16%; Sp=53; PPV=83%; NPV=71%; Youden indice=-0.13 and Q Yule coefficient =-0.64.

Conclusions: Our study showed that scores routinely used in predicting hemorrhage may be used as mortality risk factors. The results revealed the superiority of HASLED score in predicting mortality at one month with a good AUC, both Se and Sp and a very strong correlation. Patients with a HASBLED less than one are classified at a low risk mortality with a NPV=94%. Multicenter studies may be performed to extrapolate these results.

#18926 : Efficacy and safety outcomes in FXa-associated bleeding following trauma: an ANNEXA-4 substudy**Authors:**

Truman J. Milling (1), Saskia Middeldorp (2), Peter Verhamme (3), Patrick Yue (4), Elena Zotova (5), Juliet Nakamya (6), John T. Curnutte (7), Stuart J. Connolly (8), Andrew M. Demchuk (9)

1. Professor, Seton Dell Medical School Stroke Institute, Austin, TX, USA
2. Professor, Academic Medical Center, Amsterdam, NEDERLAND ANTILLES
3. Professor, University of Leuven, Leuven, BELGIUM
4. Senior Director Clinical Development, Portola Pharmaceuticals, Inc., South San Francisco, CA, USA
5. Research Coordinator, McMaster University, Hamilton, CANADA
6. Statistical Coordinator, McMaster University, Hamilton, CANADA
7. Executive Vice President, Research & Development, Portola Pharmaceuticals, Inc., South San Francisco, CA, USA
8. Professor, McMaster University, Hamilton, CANADA
9. Professor, University of Calgary, Calgary, CANADA

Keywords: Andexanet alfa; factor Xa inhibitor; bleeding; coagulation; intracranial hemorrhage; apixaban; rivaroxaban; ANNEXA-4

Abstract :

Introduction: Acute major bleeding secondary to trauma is a significant complication of anticoagulated patients. In patients taking Factor Xa (FXa) inhibitors, major bleeding events can be life-threatening in the absence of a specific reversal agent.

Methods: ANNEXA-4 was a prospective, single-arm, open-label study evaluating the efficacy and safety of andexanet alfa in patients with acute major bleeding while taking FXa inhibitors. Eligible patients presented within 18 hours of their last FXa inhibitor dose. Co-primary efficacy endpoints were the percent change from baseline in anti-FXa activity, and the proportion of patients achieving excellent or good hemostatic efficacy over the first 12 hours after treatment, as determined by an independent adjudication committee. Safety outcomes (including thrombotic events and death) were evaluated over 30 days.

Results: Among 352 patients enrolled in the study, 113 (32.1%) had a bleed associated with trauma (99 intracranial [ICH], 14 non-ICH). Mean age was 80.5 years. A total of 83 patients took apixaban, 25 rivaroxaban, 4 enoxaparin, and 1 edoxaban. Of the 99 ICH patients, 41 (41.4%) had bleeding in multiple compartments. The mean hematoma volume in the 13 trauma patients with single-compartment intraparenchymal bleeding was 11.3 cc. Among efficacy-evaluable ICH patients, 58 of 70 (82.9%) had excellent or good hemostatic efficacy. The percent reduction in anti-FXa activity was 94.3% and 91.8% in ICH patients taking apixaban and rivaroxaban, respectively. The 30-day rates of thrombotic events and mortality were 9 of 113 (7.9%) and 13 of 113 (11.5%), respectively.

Conclusions: In trauma patients with major bleeding associated with FXa inhibitor use, andexanet alfa resulted in a high rate of excellent or good hemostatic efficacy, with a relatively low occurrence of thrombotic events. These results are comparable to what was observed for ANNEXA-4 patients with spontaneous bleeding events, and suggest that andexanet alfa could be a safe and effective treatment option in the traumatic population.

Trial Registration / Funding Information (only) :

Trial registration: ClinicalTrials.gov ID: NCT02329327 Funding: Portola Pharmaceuticals, Inc.

#18927 : Emergency department nurses can safely remove cervical collars in low risk adult trauma patients: a systematic review of literature**Authors:**

Arianna Gazzato (1), Tommaso Scquizzato (2)

1. Azienda ULSS 3 Serenissima, Ospedale di Mirano, Venice, ITALY
2. Department of Anesthesia and Intensive Care, IRCSS San Raffaele Scientific Institute, Milan, ITALY

Keywords: emergency department, nurse, cervical collar, canadian c-spine, nexus criteria, trauma, decision making

Abstract :**Introduction**

Cervical collars, immobilization devices applied in the pre-hospital setting by ambulance staff following a trauma, are not without risk. Some of these short-term risks include patient discomfort, complicated airway management, and increased exposure to radiation. Clinical decision-making algorithms such as the Canadian C-Spine rule and the National Emergency X-Radiography Utilisation Study (NEXUS) criteria were created and validated to support the safe removal of these devices in alert, orientated and low risk adult trauma patients. The aim of this systematic review is to assess whether appropriately trained nurses working in the emergency department can safely remove cervical collars using cervical spine rules in low risk adult trauma patients.

Methods

We conducted a systematic review of the existing literature searching PubMed/MEDLINE for studies that investigated clearance of c-spine immobilization with validated criteria in low-risk trauma patients by emergency nurses.

Results

We identified 8 research articles. Emergency nurses used the Canadian C-Spine rule to remove the collar in six articles and the NEXUS criteria in the remaining two. Five articles assessed the inter-rater reliability between nurses and physicians on cervical collar removal. Of these, four reported a kappa statistic ranging among studies from 0.60 to 0.78 indicating a substantial agreement and one study reported an agreement of 94.3% indicating a strong agreement. Two articles demonstrated a reduction of the time patients spent in the ED with a cervical collar and one a reduction of length of stay in the ED. As investigated in five studies, ED nurses were confident in applying a cervical spine clearance protocol.

Conclusions

Trained ED nurses can safely remove cervical collars in alert, orientated, low risk trauma adult patients by using validated algorithms like the Canadian c-spine rule or NEXUS criteria. Adoption of these algorithms improves the flow of patients and may reduce wait times in the emergency departments. Also, nurse clearance of c-spine reduces radiations and time spent by patients with cervical collars leading to less discomfort and pain. Implementation of a nurse c-spine clearance protocol should be accompanied by appropriate training and continuous supervision over time looking for cases of missed injuries.

#18930 : Diagnostic value of procalcitonin in predicting culture outcomes: an observational study.**Authors:**

Monique Haene (1), Kaoutar Azijli (2), Tanca Minderhoud (2), Prabath Nanayakkara (2)

1. , VUmc, Utrecht, THE NETHERLANDS

2. , VUmc, amsterdam, THE NETHERLANDS

Keywords: observational, diagnostic, procalcitonin, biomarker, culture outcome, antibiotics

Abstract :

Objective: It remains a challenge for emergency physicians to appropriately decide which patients are to receive antibiotic therapy and which are not. Especially for patients with atypical symptoms of whom the focus of a probable infection is not so clear, an insight in the outcome of cultures could be decisive. However, antibiotic treatment is often started before culture outcomes are available. Our main objective was to determine whether procalcitonin (PCT) could accurately predict the outcome of blood, urine and sputum cultures in order to reduce antibiotic overuse.

Method: This was a multicentre observational study, performed in four Dutch hospitals. Patients presented at the emergency department with suspicion of infection, of whom a PCT value was measured and at least one blood, urine or sputum culture was obtained were included. Primary outcomes included the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of PCT in predicting outcomes of blood, urine and sputum cultures individually and all cultures combined. Primary outcomes were calculated for different PCT cut-off values, namely 0.1, 0.25 and 0.5 mcg/ml.

Results: 307 patients were included. PCT showed a sensitivity of 0,95, 0,84 and 0,68 for the cut off value of 0.1, 0.25 and 0.5 mcg/ml respectively for blood cultures. Specificities were 0.27, 0.56 and 0.69. NPV's were 0.98, 0.98 and 0.96 and the PPV's were 0.10, 0.15 and 0.16. For urine cultures procalcitonin had a sensitivity of 0.86, 0.61, 0.39 for cut-off values of 0.1, 0.25 and 0.5 mcg/ml respectively. Specificity was 0.25, 0.50 and 0.62. NPV's were 0.88, 0.84 and 0.81, and the PPV's were 0.22, 0.23 and 0.20. For the combined analysis the specificity was 0.91, 0.74 and 0.56 for the cut-off values of 0.1, 0.25 and 0.5 mcg/ml respectively. Specificities were 0.31, 0.60 and 0.72. NPV's were 0.92, 0.89 and 0.85 and the PPV's were 0.27, 0.34 and 0.33.

Conclusion: PCT has a high negative predictive value in predicting culture outcomes for the cut-off values of 0.1 and 0.25 mcg/ml. Based on these results, it seems that antibiotic therapy can be safely withheld from patients with a PCT < 0,25 µg/ml.

#18932 : Risk factors in suspicion of pulmonary embolism in emergency department**Authors:**

Siwar Jerbi (1), Ines Chermiti (1), Amira Bakir (1), Hanène Ghazali (1), Jamila Habli (2), Mahbouba Chkir (1), Souad Chkir (2), Monia Ngach (1), Sami Souissi (1)

1. Emergency department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA
2. Cardiology department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA

Keywords: pulmonary embolism, suspicion, risk factors, scores

Abstract :

Introduction: Pulmonary embolism (PE) remains a difficult diagnosis. The association of risk factors, underlying diseases and evaluation by biological markers and scores are the only guarantee for a rigorous diagnostic approach. The simplified Wells score is the most recommended tool to assess the likelihood of PE.

Some clinical and para-clinical findings such as electrocardiogram (EKG) abnormalities and blood gas results are very used in our daily practice but not found in scores evaluating PE probability.

Objectives: The aim of our study was to assess PE risk factors in patients admitted to emergency department (ED).

Methods: A descriptive prospective study was conducted between January 2018 and April 2019. Inclusion of adult patients admitted to ED for suspicion of PE.

We collected epidemiologic, biological and CT data. Categorization of patients with the modified Wells score. ROC curves were analyzed for PE risk factors. Management of patients with suspected PE was directed by the European Society of Cardiology guidelines.

Results: Inclusion of 103 patients. PE was diagnosed in 27 patients (28%). Sex ratio= 0.98. Mean age = 61 ± 18 years. Comorbidities (%): hypertension (56), diabetes (33) and chronic obstructive pulmonary disease (15.5). Predisposing factors (%): recent immobilization (30), recent surgery (30) and history of deep venous thrombosis (11). EKG findings (%): tachycardia (56), right bundle branch bloc (26), S1Q3 aspect (7). Blood gas results (%): hypocapnia (73), hypoxemia (35), respiratory alkalosis (57) and increased alveolar-capillary gradient (86).

The analysis of ROC curves for the diagnosis of PE (AUC [95% IC]; p): age 0.592 [0.450-0.735] with a cut-off value=60 years, S1Q3 aspect 0.511[0.364-0.659], hypocapnia 0.500 [0.351-0.649] with a cut-off value= 35 mmHg and increased alveolar-capillary gradient 0.614 [0.472-0.756] with a cut-off value=45mmHg .

Conclusions: Our study revealed good AUC for a blood gas result. It could be incorporated into a new score for the stratification of PE likelihood. Further and larger studies have to be conducted in order to validate this conclusion.

#18933 : Review of 2635 patients treated for respiratory pathology in a hospital emergency department**Authors:**

María Cuenca Torres (1), Cristina Navarro Vives (2), Luis Manclús Montoya (3), Asier Bengoechea Calafell (3), Pedro Garcia Bermejo (3)

1. Farmacéutica de Área, Departamento de Educación, Investigación y Docencia Hospital Universitario La Ribera, Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN

2. , Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN

3. Médico Adjunto Servicio de Urgencias Hospital Universitario La Ribera, Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN

Keywords: respiratory pathology, emergency department

Abstract :**INTRODUCTION:**

Respiratory diseases affect millions of humans each year and that's one of the main reasons for requiring emergency healthcare.

The aim of this work was to study diagnosed patients with acute respiratory problems in the Emergency Department at "La Ribera" University Hospital.

MATERIALS AND METHODS:

A retrospective descriptive observational study was performed from 01/01/2015 to

02/03/2018 in the Emergency Department at "La Ribera" University Hospital. Patients' clinical history data concerning social-demographic details, treatment, additional tests, diagnosis and location after discharge was revised.

RESULTS: 2635 patients were seen (795 in 2015, 754 in 2016, 856 in 2017 and 230 in 2018). 66.6% were male with a medium age of 72. Most attended in January (16.96%), February (11.84%) and March (10.74%). P4 priority level was assigned to 47.6% of patients and P3 level was assigned to 37.2%. 76.1% of patients were adults and only 4.7% were paediatric. The average waiting time and care was 29.06 ± 25.959 minutes and 240.72 ± 196.405 minutes, respectively. Test were requested to 99.81% of patients (82.7% x-rays and 76% blood tests). Most frequent diagnoses were chronic obstructive bronchitis with exacerbation (acute), 50.3%, chronic obstructive bronchitis (9.2%) and chronic

obstructive asthma with acute exacerbation (5%). 27.78% of patients were admitted.

CONCLUSIONS:

The reports which describe the care given to patients with frequent health problems, like respiratory diseases, are important in Emergency Departments to set multidisciplinary strategies with family doctors and specialists in order to decrease the attendance of patients with certain diseases to already overloaded Emergency Departments.

#18934 : A survey on the frequency of the use of complementary and alternative therapies in patients referred to the emergency department of a university hospital

Authors:

Neda Ashayeri (1), Rezai Mahdi (2)

1. Student Research Committee, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC
2. Emergency Medicine Management Research Center, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

Keywords: Complementary and Alternative Medicine (CAM), Patients, Emergency Department

Abstract :

Introduction: To assess the prevalence of Complementary and Alternative Medicine (CAM) use in patients who refer the emergency department

Methods: Five hundred patients referred to the an academic emergency department were interviewed and data including age, sex, educational level, underlying disease and CAM use were registered.

RESULTS: Of the 425 patients who entered the study, 187 were men (44%) and 238 were females (56%). The mean age of subjects was 53.03. From the 425 patients, 270 (63.5%) had not used CAM in the last 3 months , 138 (32/5%) had used less than 4 times, and only 17 (4%) had used CAM over 4 time. CAM use was significantly seen in patient with lower education level and in older people ($p < 0.001$).

CONCLUSIONS: In contrast to public belief in our country, CAM use was not very common in patients referred to emergency departments.

Trial Registration / Funding Information (only) :

IR.IUMS.REC 1396.8811215308

#18937 : Review of the implementation of an action protocol against the Cervical Whiplash in an Emergency Department**Authors:**

Luis Manclús Montoya (1), Jesus Ballester Boscá (2), María Cuenca Torres (3), Ricardo Muñoz Albert (1), José Luis Ruiz López (1)

1. Médico Adjunto Servicio de Urgencias Hospital Universitario La Ribera, Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN
2. , Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN
3. Farmacéutica de Área, Departamento de Educación, Investigación y Docencia Hospital Universitario La Ribera, Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN

Keywords: Emergency Department, Trauma, Cervical Whiplash

Abstract :

Introduction: The cervical whiplash has now become one of the most frequently attended pathologies in the emergency services highly associated with traffic accidents. In 90% of the cases, the lesions are minimal or non-existent, so the attention given to these patients has been homogenized regardless of the level of severity of the pathology. The objective of the present study was to know the care received by patients diagnosed with whiplash in the Emergency Service of the University Hospital of La Ribera (SUHULR) to evaluate if the protocol of action against this pathology implanted in this service in 2016 is still being used.

Methodology: Retrospective univariable descriptive observational study conducted from January 1 to December 31, 2018 in the SUHULR. A sample of patients with diagnosis at discharge coded as ICD 847.0 corresponding to: Sprain / Twisting of the neck (cervical whiplash) was studied. The source of information for the collection of the variables (sex, age, location, mechanism of injury, symptomatology, exploration, request for complementary tests, treatment and delivery of recommendations at discharge) was the electronic clinical record of the University Hospital of La Ribera (NOU-SIAS). The analysis of the results consisted of a univariable descriptive analysis carried out with the SPSS.

Results: A total of 186 clinical histories were studied, resulting in the exclusion of 23 poorly coded cases and 3 escaped patients, 159 valid histories. The prevalence between men and women was very similar and the average age of the men was 36.02 ± 14.97 years. The traffic accident was the most frequent cause. In the majority of clinic history in which the use of a seat belt was recorded, it was worn and the impact suffered in most cases was back. 100% of the patients attended had symptoms, mainly cervical pain. In the vast majority of HC, the physician recorded the physical examination, with a higher general physical examination than that of cervical mobility and osteotendinous reflexes. Complementary tests were requested to the majority of patients; an X-ray to practically all of them, being indicated by the "C-spine rule" only in 22.7% of the cases. Only on 3 occasions did the doctor record the level of severity in the patient's history, which in the 3 cases was IIA; the observer assigned a level IIA to 66% of the total patients. Almost all patients were prescribed drugs and most of these were anti-inflammatory in nature (NSAIDs), followed by analgesic and muscle relaxant medications. The administration of heat was the physical measure most commonly prescribed (analgesic action), alone or alternating with cold (anti-inflammatory action). The prescription of incorrect collar (according to the "C-spine rule") was considered in relation to the time of indication in 92 of the 96 patients who were prescribed a collar. Recommendations were given at discharge to a minority of patients.

Conclusion: Most of the patients treated at the SHULR with a diagnosis of cervical whiplash are given a cervical radiograph, and the same treatment is prescribed

#18938 : Deliberate Self Harm. Is there any Hope?**Authors:**

Kiren Govender (1), Kathleen Gaffey (2)

1. Consultant, Emergency Medicine, Portiuncula University Hospital, Saolta Univeristy Hospital Group, Galway, IRELAND
2. Clinical Nurse Specialist, Psychiatry Liason Nurse Emergency Department, Portiuncula University Hospital, Saolta University Hospital Group, Ballinasloe, IRELAND

Keywords: Deliberate Self Harm

Abstract :

Any act of intentional self-poisoning or self-injury regardless of the context is described by the National Institute for Health and Care Excellence as deliberate self-harm (DSH).

The aim of this retrospective comparative study was to assess all presentations of DSH to the Emergency Department at Portiuncula University Hospital in 2018 to the two previous annual audits in 2016 and 2017.

The data was collected by the psychiatry liaison services and the Emergency Department and included demographics, age, gender, date and time of attendance, method of DSH, use of alcohol and or drugs and disposition. This data was then compared to the previous audits.

There were 307 presentations to the ED for DSH in 2018, with more women presenting than men (169: 138) a 7% increase to the previous year's data 286 (143:143). The trends appears to suggest the there is an increase of women cases since 2016 360 (160:200). The age group that attended most often was the 30-39 year olds, followed by the 20-29 and 40-49 year old which were similar to the 2016 and 2017 audits. The two other groups with increases in incidence were those under 20 (76) and those older than 65 (16). Notably drugs and alcohol were the most common form of DSH and August was the busiest month unless previous years. The vast majority of cases (278) were referred to the ED by themselves, friends and family and only 131 received psychiatric assessment in the ED.

There seems to be an increase in cases of DSH to the ED as compared to previous years. This may be attributed to the increased public campaigns like the recent Pieta House Darkness into Light Campaign which brought more than 200 000 people to walk in the early hours of the morning to sunrise. Such campaigns have been acknowledged patients, families and friends. A further study will be required to review reason for this increase. . It is very noteworthy that there is an increase of DSH amongst the younger population and those of current employable age. A very concerning factor is the increase in use of recreational drugs like cocaine in combination with alcohol and other drugs to deliberately self-harm is noticed amongst the younger population and the elderly, which may be due to the easier accessibility to the drug and experimentation in the former group and loneliness and comorbidites in the latter. Mental Health Issues certainly plagues many in our society and affects all socioeconomic groups. We must therefore continue to raise awareness; decreased the stigma attached; ensure political education, influence and increased funding is increased in this area.

#18939 : Hyperosmolar states in patients admitted to emergency department**Authors:**

Siwar Jerbi (1), Ines Chermiti (1), Sirine Keskes (1), Montassar Bhourri (1), Sana Tabib (1), Ahlem Azouzi (1), Monia Ngach (1), Mahbouba Chkir (1), Sami Souissi (1), Hanène Ghazali (1)

1. Emergency department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA

Keywords: hyperosmolar state, metabolic disorders, outcomes, management

Abstract :

Introduction: The hyperosmolar state is a rare condition defined by a plasma osmolarity greater than or equal to 300 mosm/l. It is classically observed in the elderly. It can be linked to either an acute decompensation of diabetes or developed in the context of global dehydration with hypernatremia, whatever its origin. It is usually characterized by its pejorative prognosis with high mortality rates.

Objective: The aim of our study was to assess clinical, para-clinical, therapeutic and evolutive features of patients admitted to emergency department with hyperosmolar state.

Methods: A prospective, descriptive study was conducted over a six-month period (between November 2018 and April 2019). Inclusion of adult patients presenting to ED with hyperosmolar state as a first diagnosis or as a complication of another illness.

Osmolarity was calculated at admission and discharge as follows: $2 \times \text{natremia} + \text{glycemia}$. Hyperosmolarity was defined as osmolarity more than 300 mosm/l.

Results: Inclusion of 13 patients. Mean age = 73 ± 12.7 . Sex ratio = 5.6. Hyperosmolar state was due to hyperglycemic crises in three patients and related to hypernatremia in the eleven remaining. Main comorbidities (n): diabetes (7), hypertension (6), chronic obstructive pulmonary disease (2) and heart failure (1).

Main chief complaints (n): functional decline (6), confusion (4), neurological deficit (2) and seizures (1). Signs of extracorporeal dehydration were present in 5 patients.

Biological findings mean \pm SD : osmolarity 323 ± 14 mosm/l, natremia 147 ± 13 mmol/l, chloremi 117.5 ± 12.1 mmol/l and glycemia 23 ± 3 mmol/L. Treatment during the first 24 hours (mean in liters \pm SD) : isotonic saline solution (5 ± 3), 5% glucose solution (2 ± 1.6), water (3 ± 2) and *Ringer's lactate* solution (2 ± 1.7). Causes leading to hyperosmolar state (n): systemic infection (6), dehydration (2), discontinuation of insulin (1) and stroke (1). Mean hospital length of stay was 4 ± 2 days. Intra-hospital mortality was 36.4%.

Conclusion: Due to the aging of the population, the hyperosmolar state is becoming more and more common nowadays and as a result is receiving renewed attention. Its prognosis remains severe which requires better management that could be improved by earlier diagnosis and shared protocols.

#18941 : Evaluation of trauma patients' satisfaction after pain management in triage room: A randomized clinical trial

Authors:

Neda Ashayeri (1), Rezai Mahdi (2), Reza Mosadegh (2)

1. Student Research Committee, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

2. Emergency Medicine Management Research Center, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

Keywords: Patient's Satisfaction, Pain management, traumatic pain, Emergency Department, Triage room

Abstract :

Introduction: Pain is considered one of the most common causes for referring patients to the emergency department (ED). Therefore, appropriate and sufficient pain management, particularly in EDs, is challenging concern for healthcare professionals. Patient satisfaction is one of the most important indicators for assessing the quality of pain management and health care. The principal aims of this investigation were evaluating the efficacy of the administration of analgesic in triage room in trauma patients.

Method: This was a randomized, placebo-controlled and double-blind clinical trial. Of traumatic patients admitted to the ED, a total of 120 patients over 14 years of age meeting the inclusion criteria were recruited. Eligible candidates were randomly assigned to an intervention or control groups. In the intervention group, 0.05 mg/kg of morphine intravenously was applied to all the subjects. In the control group a similar dose of distilled water as a placebo was administered for pain management. Satisfaction with pain control was measured at the end of the study using a subjective 3-level rating scale (good, moderate, and poor). Subsequently, various factors including demographic characteristics, educational level, the type and site of injuries, influencing the level of patients' satisfaction also were taken into account in both groups.

Results: 120 eligible patients with isolated upper or lower limb trauma were included for this trial. The mean age of participants was 35 ± 15.41 years. Given the obtained data from the intervention group, good to moderate satisfaction was observed in both genders, participants with any ages and those with any level of education. Although 85% of patients who experienced soft tissue damages had well to moderate satisfaction, nearly 40% of patients with fracture pains were dissatisfied with pain control. Notably, pain management in approximately 80 percentages of participants with upper or lower limb injuries was successful and providing their satisfaction.

Conclusion: Pain management in Triage room is associated with more satisfaction of trauma patients.

Trial Registration / Funding Information (only) :

IR.IUMS.REC 1395.9311307013

#18944 : Perception and Management of Pain by healthcare professionals in the Emergency Department of the “Hospital Universitario de La Ribera”

Authors:

María Cuenca Torres (1), Jorge Andrés Bernia (2), Luis Manclús Montoya (3), Inmaculada Tormo Miñana (4), Luisa Tarrasó Gómez (5)

1. Farmacéutica de Área, Departamento de Educación, Investigación y Docencia Hospital Universitario La Ribera, Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN
2. , Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN
3. Médico Adjunto Servicio de Urgencias Hospital Universitario La Ribera, Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN
4. Enfermera del Servicio de Urgencias Hospital Universitario La Ribera, Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN
5. Médico Adjunto Unidad de Hospital a Domicilio del Hospital Universitario La Ribera, Conselleria de Sanitat de la Generalitat Valenciana, Alzira, SPAIN

Keywords: Emergency Department, Pain,

Abstract :

Rationale:Pain is one of the main reasons for consultation in the Emergency Department, reaching 42.8% of patients who require medical assistance.

Objective:To evaluate the perception and management of pain by healthcare professionals in the Emergency Department of the University Hospital of La Ribera.

Methodology:A descriptive, prospective and analytical observational study was performed. Data collection was carried out by means of a survey in which respondents were asked about the transmission of information to the patient on aspects related to pain, systems used to categorize pain, knowledge of protocols and their use in fixed and rescue guidelines, their registration, the system used for their evaluation in the patient, the need to prevent pain, the adequacy of pain treatment in the service and the possibility of improving its approach.

A univariate descriptive analysis and an analytical study were carried out in order to explore whether the professional category influenced the perception and management of pain.

Results:74.25% of the service workers, mostly women, with an average age of 37.013 ± 10.85 years, were interviewed. The most representative group was nurses (52%). The transmission of information to the patient on aspects related to pain refers to being carried out mainly in a non-written form (always 16%, almost always 38.67% and sometimes 28%). The EVA and EVN scales were the most used to categorize pain in the communicative patient (52% and 41.3% respectively). 53.33% of the participants did not use any method to categorize pain in the non-communicative patient. 61.33% know pain control protocols and use them in both fixed and rescue guidelines. Pain is assessed more frequently by asking the patient than by physiological records. 57.3% consider that pain management in the unit is almost always adequate and 44% think it can always be improved.

Analysis by professional categories showed significant differences in the variables need to promote and prevent pain ($p=0.048$) (higher in the physicians and lower in the auxiliaries), a system used to categorize pain in the communicative patient ($p=0.001$) (doctors indicated the EVA scale and nurses the EVN scale), pain recording frequency ($p=0.016$) (nurses refer to always recording pain and doctors some or few times) and pain evaluation frequency asking the patient ($p=0.04$) (much higher in nursing assistants and lower in doctors).

Conclusions:

In the Emergency Department of the “Hospital Universitario de La Ribera” pain assessment and treatment should be improved in order to unify criteria among professional groups and establish a systematic way of dealing with pain according to the type, severity and characteristics of the patient, implementing and using protocols to improve the approach to pain in patients.

#18946 : Study of the final outcome of the end stage cancer patients referred to palliative care in emergency department.

Authors:

Neda Ashayeri (1), Rezai Mahdi (2), Reza Mosadegh (2)

1. Student Research Committee, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC
2. Emergency Medicine Management Research Center, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

Keywords: Palliative care, Emergency Department, Mortality, Cancer

Abstract :

Introduction: Cancer is one of the major health problems in the world. Due to the nature of this disease, many cancer patients need palliative care. The aim of this study was to compare the final outcome of end stage cancer patients among hospitalized patients and patients who use palliative care and home care services.

Methods: This is a cohort study. The study population included 154 patients with end stage of cancers referred to emergency department of Firoozgar Hospital in year 2017. The first group is placed under in-patient routine care and the second group is referred to the palliative care center. Data were analyzed using SPSS version 23 and descriptive statistical tests (absolute and relative frequency, mean, and standard deviation).

Results: The findings of the study showed that 25% of these patients used home care and 35% were admitted to palliative medicine ward. The average duration of hospitalization, the average number of hospital visits, and hospital deaths were significantly lower in the cancer patients, who received palliative and home care ($P < 0.001$), and mortality were not significantly different ($p = 0.78$).

Conclusions: According to the results of the study, the palliative care have a significant effect on the quality of life of patients with the end stage cancer. The use of home care services is recommended for patients, since it can reduce unnecessary visits and long-term hospitalization, and the patient will be more comfortable with the care they need at home

#18948 : An assessment of the emergency medicine clinician's knowledge of the mechanisms of high flow nasal oxygen**Authors:**

Malcolm Sim (1), Christopher Lowry (1), Fiona Burton (1)

1. NHS, None, Glasgow, UK

Keywords: High flow nasal oxygen, physiological mechanisms, knowledge, respiratory failure

Abstract :

Background:

High flow nasal oxygen has been described in the 1960's but has gained much more prominence in the past decade due to advances in the ability to humidify gases at high flow rates. As an emerging intervention in the emergency department (ED) we wished to assess clinician's knowledge around the physiological mechanisms underpinning this technology.

Methods:

We surveyed 20 Emergency Medicine consultants from hospitals across Scotland. We initially gauged knowledge relating to the standard and ubiquitous "trauma mask" by asking the inspired oxygen concentration (FiO₂) expected from this device at 15 litres /minute in a healthy volunteer at rest and then with severe respiratory failure. This was followed with questions relating to high flow nasal oxygen (HFNO₂) and its mechanisms. We asked the average peak inspiratory flow (PIFR) in a healthy adult at rest and in respiratory failure, the amount of continuous positive airway pressure (CPAP) expected at 30 and 60l/minute of flow, factors determining whether CPAP is obtained, the definition of a toxic dose of oxygen and a free text description of the mechanisms of HFNO₂. We concluded with a clinical scenario asking what initial settings of high flow clinicians would use for a 52 year old man with respiratory failure currently receiving 60% O₂ via a Venturi mask.

Results:

All results are presented as a mean (standard deviation).

FiO₂ expected from a trauma mask at 15l/minute in a healthy adult: 0.77 (0.11). FiO₂ expected from a trauma mask in an adult at 15l/minute with severe respiratory failure: 0.55 (0.14). Average peak inspiratory flow rate (l/min) in a healthy adult at rest: 146 (191). Average maximum peak inspiratory flow rate in an adult with respiratory failure: 82 (74). CPAP (cmH₂O) expected at 30l/minute of high flow: 5.7 (2.2). CPAP expected at 60l/minute of high flow: 10.1 (4.4). 5/20 correctly identified that mouth breathing was a major factor in determining the CPAP produced. 4/20 identified the major mechanism of minimising entrainment of air by better matching the patient's peak inspiratory flow rate. Only 1/20 described washing out of dead space as a factor. Nobody correctly defined a toxic dose of oxygen. In the simulated scenario the starting FiO₂ was 0.56(0.17) and the flow rate 41(49), a high SD caused by one answer of 200l/minute.

Discussion:

The stated FiO₂s delivered from a trauma mask in health and respiratory failure were close to those described in the literature. There was an overestimation of the PIFR in health at rest (normally 40l/minute) and underestimation in respiratory failure (up to 120l/minute). There is a quoted 1cm CPAP per 10litres nasal high flow. This was overestimated at 30 and 60 litres. There was low correct identification of the underlying mechanisms by which HFNO₂ works with a large variability in how to start the therapy in a theoretical scenario.

Conclusion:

With HFNO₂ becoming a more common intervention in the ED, clinicians will be keen to learn about the physiological mechanisms underpinning this exciting technology. We will develop an education package for emergency medicine clinicians.

Trial Registration / Funding Information (only) :

N/A

#18949 : Determination of Frequent users' characteristics admitted at three university hospitals of Tehran in 2018

Authors:

Mahdi Rezai (1), Neda Ashayeri (2), Kamran Raboubiyat (1)

1. Emergency Medicine Management Research Center, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC
2. Student Research Committee, Iran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

Keywords: Frequent user, Emergency Department, Overcrowding

Abstract :

Introduction: Based on previous studies, frequent users of Emergency Department are responsible for overcrowding. Considering that there is not any published study about frequent users in Iran, we decided to determine the clinical and demographic characteristics of patients who admitted at 3 university emergency department frequently.

Methods: This observational study was designed to determine the characteristics of frequent users in three university hospitals. The data were extracted from software of hospital computers. We considered 5 admission or more as a frequent user but because one could admit in different hospitals, first we extracted patients who admitted 2 time or more.

Results: Totally, 208 patients admitted 2 times or more in 2018. The most underlying diseases were cancers (58 patient and 27.9%) and then high age (>65 years old) chronic obstructive lung disease and ischemic heart disease. Dyspnea, chest pain and weakness were the most chief complaint of frequent users.

Conclusion: Health care policy makers should pay more attention to elder patients and also patients with cancers in order to decrease the frequency of their admission. Improving outpatients clinics and stating palliative care clinics may have favorable effect on these groups.

#18950 : An Audit of Paediatric Minor Injuries Attendances to the Emergency Department Advanced Nurse Practitioner Service at Portiuncula University Hospital.**Authors:**

Ciara Mooney (1), Kiren Govender (2)

1. Emergency Department, Advanced Nurse Practitioner, Portiuncula University Hospital, Saolta University Hospital Group, Ballinasloe, IRELAND
2. Consultant, Emergency Medicine, Portiuncula University Hospital, Saolta University Hospital Group, Galway, IRELAND

Keywords: Paediatric Minor Injuries, Advanced Nurse Practitioners, ANP's

Abstract :

Paediatric injuries are different from adults and often require more time and skill in assessment of them. Their presentations to the Emergency Department offer their first contact with a hospital. It requires care to be gentle and caring to ensure that the child is not emotionally traumatised by this experience. The Advanced Nurse Practitioner Service (ANP) offers an allied holistic approach to the care of a child with a minor injury. The Emergency Department (ED), Portiuncula University Hospital (PUH), provides a 24 hour 7 day week emergency service to approximately 27,000 patients annually. The ANP service at PUH has defined clinical remit to assess minor injuries as part of the Emergency Department team and includes children between 1 to 16 years of age.

This audit reviewed all minor injuries in children that presented to the ANP service sought to further enhance the quality service and recognising opportunities for health education for both children and their parents. The data includes age, gender, mechanism of injury, anatomical body parts injuries and discharge/referral outcome.

990 patients were treated by the ANP service for the study period Jan 1st to 30th May 2018, of which 347 (35%) were under the age of 16. The most common age category for injury is between age 11-16 (22%), age 6-10 years 30% and 1-5 years (22%). The gender difference is 47% female versus 53% male. The most frequent occurrence of injury was in the home 38% followed by sport causing 28% and 17% happening in school. Farm accidents were less frequent at 1%. Hand and wrist injuries were the most frequent anatomical body parts injured at 45% followed by ankle and foot next most common at 12%, the least injuries occurring in the forearm (2%). Falls and blunt trauma are the basis for the most common mechanism of injury representing 47% and 35% respectively, alleged assault, dog bites and insect bite the least allowing for <1% each. 54% of the patients were discharged home, 26% were referred to the fracture clinic, 13% were seen at the ED review clinic, 3% were referred for direct orthopaedic intervention and just over 1% required plastic referral.

Paediatric attendances account for a considerable amount of minor injury attendances to the ANP service. This can convey a considerable amount of distress for the child and their parents, highlighting the need for ANP's to provide a service specific to the patient needs by using advanced skills such as clinical examination, diagnosis and prescribing. The results emphasises the impact of the ANP service in a busy ED and the importance of continuing education in order to provide excellent high quality care to children and their parents. This study also provided insight to the development of patient and parent information leaflets to ensure they were kept well informed; ensured health promotion and risk prevention strategies vital to prevention of paediatric trauma.

#18951 : Utility of chronic obstructive pulmonary disease abcd classification as a predictor of exacerbation severity**Authors:**

Fatma Mejri (1), Sirine Keskes (1), Raja Fadhel (1), Hela Ben Turkia (1), Emna Ennouri (1), Moez Mougaida (2), Amel Ben Garfa (1), Sami Souissi (1)

1. Emergency department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA

2. Emergency department, Regional hospital of Ben Arous, Ben Arous, TUNISIA

Keywords: chronic obstructive pulmonary disease, scores

Abstract :**Introduction:**

The prevalence of chronic obstructive pulmonary disease (COPD) acute exacerbations is usually correlated to the disease severity. The GOLD ABCD classification offers a stable patients stratification and a morbi-mortality estimation based on spirometry, life-quality assessment and number of emergency department (ED) visits during the last 12 months.

Is this classification a good predictor of COPD acute exacerbation severity?

The aim of the study was to assess the utility of ABCD classification in patients admitted to ED with COPD acute exacerbation.

Methods:

A prospective observational study was conducted over one year. Inclusion of patients admitted in the ED with COPD acute exacerbation. Patients were divided into two groups according to ABCD 2018 GOLD classification. Epidemiological, clinical, therapeutic and evolutive characteristics were collected. Comparison of two groups: G1= D class; G2= non D class.

Results:

Inclusion of 202 patients. Group 1: n =89 (44) and group 2: n=113(56).

Comparison of 2 groups (G1 versus (vs) G2; p) founds: mean age years+/-SD (67+/-10 vs 63+/-11; p=0.033), treatment observance n(%) (79(88) vs 83(73); p=0.002); sputum purulence n(%) (47(53) vs 42 (37); p=0.026), mean respiratory rate (rpm+/-SD) (26+/-5 vs 23+/-5; p=0.01), mean peripheral oxygen saturation (%+/-SD) (89+/-9 vs 91+/- 7; p=NS), mean pH (7.33+/-0.13 vs 7.4+/-0.1; p=0,03), non invasive ventilation use n(%) (18(20) vs 10(10); p=0.021), intensive care unit admission n(%) (4(16) vs 2(15); p=NS).

Conclusion: The ABCD classification is an easy and fast tool to identify a severe acute exacerbation. Class D patients were older, had severe presentation and require more procedures such as NIV. They are more likely to develop severe exacerbations. This classification performed to detect severe outcomes in stable patients may be used during exacerbations to detect poor prognosis. It could be integrated into a management algorithm.

#18952 : Mass gathering medicine – a retrospective analysis of trending drug use at an annual outdoor electronic dance music festival in Belgium from 2007 - 2018

Authors:

Kris Spaepen (1), Ives Hubloue (1)

1. Research group in Emergency and Disaster Medicine, Vrije Universiteit Brussel, Brussels, BELGIUM

Keywords: Disaster medicine, Mass gathering medicine, Electronic dance music festival, Illicit drugs, New psychoactive substances (NPS)

Abstract :

Background: Within mass gathering events, electronic dance music festivals (EDMF) form a unique subset. They are linked with higher patient presentation rates (PPR), higher patient acuity, high levels of substance use and even death. Within the EDMF we see the “classic” drug usage (e.g. cocaine, MDMA, amphetamines) but also the rise in new psychoactive substances (NPS). With the rising use of NPS comes the need for onsite laboratories for drug testing and the knowledge for onsite medical teams on how to treat the intoxications with these new substances.

Relevance: this information could help predict factors influencing patient acuity, onsite medical staffing requirements and transport to hospital rates (TTHR).

Hypothesis: The use of “classic” illicit drugs, new psychoactive substances and alcohol use influence the severity of patient presentations at electronic dance music festivals.

Methods: A retrospective analysis of > 60,000 patient records was performed for patients who presented themselves to Het Vlaamse Kruis® who organise the first aid posts at the Tomorrowland® festival between 2007 - 2018. Data on patient presentations was obtained from Het Vlaamse Kruis®, information on the drug use was collected from the patient (or bystander), clinical presentation and/or toxicological testing.

Results: Between 2007 and 2018 over 2,5 million visitors attended Tomorrowland®. Congruent with existing literature on the use of illicit drugs and NPS, some patterns are observed. Patient demographics did not change through time, the acuity of intoxicated patients and the patterns in the use of drugs did. Although emergencies remain rare, there was a noticeable increase in the need for advanced treatment caused by combined drug and alcohol use and the increase in the use of NPS.

Conclusion: Analysis of drug and alcohol use correlates with the increased need for onsite medical expertise at EDMF. It highlights the need for knowing what is trending in drug use (inter)nationally and a multidisciplinary approach in the diagnosis and treatment of intoxications.

#18953 : Characteristics of low energy expenditure in the acute phase of sepsis**Authors:**

TAKESHI EBIHARA (1), KENTARO SHIMIZU (1), HIROSHI OGURA (1), TAKESHI SHIMAZU (1)

1. Department of Traumatology and Acute Critical Medicine, Osaka University graduate School of Medicine, OSAKA, JAPAN

Keywords: resting energy expenditure , indirect calorimetry, sepsis

Abstract :

Background: With regards to nutritional therapy in critical care, the guidelines recommend that hypocaloric nutrition (not exceeding 70% of the estimated needs) be administered in the early phase of acute critical illness. When indirect calorimetry (IC) was used to study resting energy expenditure (REE) in the acute phase of sepsis (within 72 hours of admission), it was found that patients showed lower energy expenditure than that calculated using simple weight-based equations (such as 20-25 kcal/kg/day). This study aimed to evaluate the characteristics of low energy expenditure in the acute phase of sepsis.

Method: This retrospective observational study included sepsis patients under ventilation in whom REE was measured using IC within the first 72 hours of admission. The patients were divided into two groups according to REE values: group A, REE <20 kcal/kg/day and group B, REE ≥20 kcal/kg/day. Age, sex, body mass index (BMI), comorbidities, Acute Physiology and Chronic Health Enquiry (APACHE II) score on admission, site of infection, causative microorganisms, ratio of positive blood culture, catecholamine administration, and corticosteroid therapy were compared between the two groups. The Wilcoxon rank-sum test and the Fisher's exact test were used for statistical analysis. A p-value <0.05 was considered statistically significant. We conducted this study in accordance with the Declaration of Helsinki, and the study was approved by the institutional review board at Osaka University Hospital (approval no. 14186). The board waived the need for informed consent because this was a retrospective study using clinical data.

Results: This study included 28 patients. Group A included 39.3% (n=11) of the study population. Median (interquartile range) age was significantly higher in group A than in group B (81 [74-87] vs. 72 [62-76] years; p=0.02). APACHE II scores were significantly higher in group A than in group B (24 [22-34] vs. 19 [14-25], p=0.04). Median BMI was significantly lower in group A than in group B (19.6 [17.6-24.9] vs. 23.6 [21.4-27.7] kg/m²; p=0.05). Microorganism culture showed gram-negative rods in the following cases: seven cases in group A (63.6%) and three cases in group B (17.7%) (p=0.02). Sex, comorbidities, site of infection, ratio of positive blood culture, catecholamine administration, and corticosteroid therapy did not differ significantly between the two groups.

Conclusion: Low energy expenditure in the acute phase of sepsis was observed in patients with higher APACHE II scores and lower BMI. The type of causative microorganism could also be related to for metabolism.

#18954 : Screening for pulmonary embolism in patients with chest pain in the emergency department: a retrospective multicenter study.**Authors:**

Antoine Lefevre-Scelles (1), Melanie Roussel (2), Paul Jeanmaire (3), Anne-laure Philippon (4), Luc-Marie Joly (5), Yonathan Freund (4)

1. Department of Anaesthesiology, Intensive Care and Emergency Medical Services (SAMU 76), Rouen University Hospital, Rouen, FRANCE
2. Emergency Department, Rouen University Hospital, ROUEN, FRANCE
3. Emergency Department, Elbeuf Hospital, Saint Aubin les elbeufs, FRANCE
4. Emergency Department, Pitié-Salpêtrière Hospital, Paris, FRANCE
5. Emergency Department, Rouen University Hospital, Rouen, FRANCE

Keywords: Pulmonary embolism, chest pain, emergency department

Abstract :

Introduction Chest pain is a common chief complaint in the emergency department. Among its associated differential diagnoses, pulmonary embolism (PE) remains a key concern for the clinician. There are no clear recommendations on which patients should undergo a formal work-up for PE diagnosis. The purpose of our study was to determine the percentage of chest pain patients who are investigated for PE diagnosis and to determine the clinical profile of these patients.

Methods We performed a retrospective multicenter study in 3 French Emergency Departments. We included all patients who visited these centers for a chest pain during a two month period. Patients were excluded if they were already treated for, or diagnosed with a thrombo-embolic event at the time of ED presentation. The primary outcome was the initiation of PE workup. This was defined by any evidence or mention in the chart of this diagnosis and reason for its rule-out or confirmation, namely order of D-dimers, CTPA, V/Q scan or lower limbs venous Doppler ultrasound. We also aimed to find factors associated to this outcome.

Results We included 881 patients with a chief complaint of chest pain. Mean age was 49 years and 481 (56%) were men. A total of 263 patients (30%, 95% confidence interval 27% to 33%) underwent a formal PE workup, 235 (89%) of them had a D-dimer testing and 50 underwent a CTPA. Four patients had a lower limb venous doppler, and PE was explicitly ruled out on the basis of a PERC score of zero in 22 (8%) patients. PE was ultimately diagnosed in 7 cases (prevalence of 2.6%, 95% confidence interval 1.1% to 5.3%). In the multivariate logistic regression model, five factors were identified as independently associated with a workup for PE diagnosis: female gender, young age, no ischemic heart disease, recent flight, and associated dyspnea.

Conclusion Among patients visiting the emergency department with a chest pain, 30% underwent work up for PE. We report five clinical variables independently associated with a higher probability of PE workup in our sample.

#18956 : Eligibility for organ donation: Is there a place in emergency department ?**Authors:**

Melanie Roussel (1), Antoine Lefevre-Scelles (2), Edgar Menguy (2), Mathieu Benhaddour (3), Luc-Marie Joly (3)

1. Emergency Department, Rouen University Hospital, ROUEN, FRANCE
2. Department of Anaesthesiology, Intensive Care and Emergency Medical Services (SAMU 76), Rouen University Hospital, Rouen, FRANCE
3. Emergency Department, Rouen University Hospital, Rouen, FRANCE

Keywords: organ donation, brain death, severe stroke, emergency medicine

Abstract :

Introduction: Actually, 60% of organ procurement is performed in patients who died of brain death due to a severe stroke, mainly haemorrhagic stroke (75%). The objective of this study is to identify patients in emergency departments for severe stroke who may be eligible for organ retrieval procedures.

Methods: We realized an epidemiological, descriptive, observational, monocentric, retrospective study at a university hospital emergency department for one year including all strokes with a Glasgow coma scale ≤ 12 and/or a NIHSS score ≥ 17 . We considered patients who died early (death < 3 days) and with no neoplasia as potentially eligible for organ donation and compared the characteristics of eligible patients to patients whose brain death has been confirmed.

Results: 1582 patients were hospitalized for stroke, 312 patients had a severe stroke. 201 patients, with severe stroke, was not managed in intensive care. In this cohort according to predefined criteria, 34 patients were considered eligible for multi-organ procurement. Fifteen (44%) had an ischemic stroke and 19 (56%) had a hemorrhagic stroke. The initial mean Glasgow coma scale was 6 (± 3). The median age was 84 years [77-89]. We compared patients with confirmed brain death (N=32) to potentially eligible donors (N=34). Age was significantly higher in potentially eligible patients (65 years vs 84 years; $p < 0.0001$). There was no significant difference in the Glasgow coma scale for antiaggregant or anticoagulant treatment between the 2 groups. 13 patients were cared for and died in neurology, 15 patients in the emergency department and 6 patients in short-term hospital units. Among potentially eligible patients, 75% of patients died within 48 hours. For patients with confirmed brain death, 75% of patients died within 72 hours.

Conclusion: The identification of patients who may be eligible for organ retrieval is difficult in the emergency department. A better awareness of practitioners could make it possible to better familiarize the management of these patients.

#18957 : New method to evaluate an oxygenation for emergency patients who cannot measure SpO₂ at the scene**Authors:**

Sakai Tomohiko (1), Shiozaki Tadahiko (1), Tachino Jotaro (1), Takegawa Ryosuke (1), Ohnishi Mitsuo (2), Shimazu Takeshi (1)

1. Department of Traumatology and Acute Critical Medicine, Osaka University Graduate School , Suita, JAPAN
2. ER, National Hospital Organization Osaka National Hospital, Osaka, JAPAN

Keywords: oxygenation, rSO₂, pre-hospital

Abstract :

Introduction: There are some critical ill patients who cannot measure oxygen saturation (SpO₂) by pulse oximeter at the pre-hospital settings. For example, among emergency patients who were treated by emergency medical service (EMS) personnel of Osaka Municipal Fire Department in 2016, there were 3,571 patients who had urgent conditions judged by on-scene EMS personnel but did not have cardiopulmonary arrest (CPA), but the measurement of SpO₂ at the scene could not be measured for 395 patients. On the other hand, the measurement of cerebral regional oxygen saturation (rSO₂) during resuscitation has been recently paid to attention.

Purpose: To evaluate whether rSO₂ could be measured for these patients.

Materials and methods: We developed portable rSO₂ monitors (weighs 600 g and can be carried easily by hanging it around the neck) and equipped them in nine ambulances (There are 63 ambulances in Osaka City). We measured serial changes in cerebral rSO₂ among emergency patients who had urgent conditions judged by on-scene EMS personnel and could not be measured SpO₂ at the scene from April 1st 2018 through March 31st 2019. "SpO₂ could not be measured at the scene" was defined as patients in whom SpO₂ could not be measured for at least 30 seconds from one finger and after attempting measurement on at least two or more fingers at the scene.

Results: During the study period, there were 14 patients who had evaluated serial changes in cerebral rSO₂ with incapable-measurement SpO₂ who had urgent conditions judged by on-scene EMS personnel but did not have CPA at the prehospital settings. In many cases, rSO₂ values were lower than normal but stable. There are two cases, rSO₂ value rose by the ventilation support of the EMS personnel.

Discussions: Even when SpO₂ cannot be measured, maintenance of a constant value of rSO₂ suggests that oxygen supply and demand in the brain are stable. Monitoring of cerebral rSO₂ is very useful for EMS personnel under the condition EMS could not evaluate their effort for patient's by SpO₂.

Conclusions: We could measure serial changes in cerebral rSO₂ among 14 patients without the measurement of SpO₂ at the scene. Our data suggest that pre-hospital monitoring of cerebral rSO₂ might be a new physiological monitoring for urgent patients during transport.

Trial Registration / Funding Information (only) :

This work was supported by JSPS KAKENHI Grant Number J P 19H03758.

#18958 : EVALUATION DE L'ANESTHESIE LOCOREGIONALE PERIPHERIQUE DANS LE TRAITEMENT DE LA DOULEUR POST-TRAUMATIQUE AUX URGENCES

Authors:

Mohamed Anass Fehdi (1), Mohamed Mouhaoui (2)

1. Réanimation chirurgicale polyvalente, CHU Ibn Rochd, casablanca, MOROCCO

2. SAMU Urgences 02, CH, casablanca, MOROCCO

Keywords: EVALUATION ANESTHESIE LOCOREGIONALE DOULEUR URGENCES

Abstract :

Introduction : Malgré qu'elle constitue une technique antalgique simple, rapide, efficace en absence de tout retentissement systémique, l'anesthésie locorégionale reste encore sous utilisée, en particulier aux urgences. Le but de notre travail est d'étudier sa place par rapport aux urgences.

Malades et méthodes : Nous avons réalisé une étude prospective ouverte s'étalant sur 3 mois incluant 103 patients qui se sont présentés aux urgences pour une douleur traumatique importante (EVA>40) intéressant les membres. Ont été exclus de l'étude tout patient ayant refusé la technique ou présentant une détresse vitale ou une contre-indication à l'ALR. Tous nos patients ont bénéficié d'un bloc plexique ou tronculaire des membres après repérage par technique de neurostimulation. L'efficacité des blocs était appréciée par les échelles d'évaluation de la douleur (EVA, EN, EVS) et le confort de l'opérateur subjectivement par une note/10. L'analyse statistique s'est basée sur les tests de Student et Khi2.

Résultats : Ont été réalisés 103 blocs, 63 au niveau du membre supérieur [7 plexiques et 56 tronculaires] et 40 au niveau du membre inférieur [tous tronculaires]. L'évolution des scores EVA, EN EVS est résumée dans le tableau suivant :

	Avant ALR	5 min après	10 min après	15 min après	p
EVA	75,1 ± 12,4	42,7 ± 22,1	25,2 ± 19,3	10,7 ± 10,5	<0,01
EVS	3,79 ± 0,74	2,68 ± 0,96	1,57 ± 1,03	0,81 ± 0,77	<0,01
EN	8,55 ± 0,96	5,19 ± 2,22	2,74 ± 2,00	1,31 ± 1,11	<0,01

Le taux de réussite était de 94,17% avec un confort moyen de l'opérateur estimé à 9,41. Les causes d'échec étaient une mauvaise indication (2 blocs cruraux pour des fractures de jambe) et l'agitation du patient (1 bloc au niveau du poignet). Aucune complication n'a été notée dans cette étude. Ceci est du probablement au faible nombre des malades recrutés.

Commentaires : Vu le rapport bénéfique/risque élevé et afin d'en faire bénéficier le plus grand nombre de patients, il est important d'enseigner certaines techniques d'ALR aux médecins non anesthésistes réanimateurs, notamment les urgentistes. Ceci n'empêche pas dans le contexte de l'urgence, d'imposer le respect des bonnes règles de la pratique de l'ALR.

#18959 : Brain death risk assessment in patients admitted to intensive care for severe stroke. Evaluation of the "PreME SCORE"**Authors:**

Melanie Roussel (1), Antoine Lefevre-Scelles (2), Edgar Menguy (2), Luc-Marie Joly (3), Benoit Veber (2)

1. Emergency Department, Rouen University Hospital, ROUEN, FRANCE
2. Department of Anaesthesiology, Intensive Care and Emergency Medical Services (SAMU 76), Rouen University Hospital, Rouen, FRANCE
3. Emergency Department, Rouen University Hospital, Rouen, FRANCE

Keywords: brain death, organ donation, stroke, intensive care unit

Abstract :

Introduction: Severe stroke is a disease with a poor prognosis. In France, this is the first cause of brain death (BD). In a growing context of "organ donor shortage", one of the new challenges is the early identification of severe stroke that could progress to BD. There is currently no validated score to predict this risk. The objective of this study is to propose a clinical-radiological score to identify patients at risk of progression to a state of BD as soon as they are admitted to intensive care.

Methods: We conducted an epidemiological, monocentric, retrospective study in surgical and neurosurgical intensive care in a university hospital in 2016, including all patients hospitalized for severe stroke defined by a Glasgow coma scale ≤ 12 and/or a NIHSS score ≥ 17 within the first 24 hours. The primary endpoint was the rate of progression to BD. The objective was to evaluate the statistical performance of the "PreME SCORE" for the assessment of the risk of transition into a state of BD. This score was created based on the literature data by collecting 7 potential criteria to be searched within 3 hours after admission to intensive care: (a) Glasgow coma scale < 7 , (b) abolition of brainstem reflexes (photomotor and corneal), (c) haematoma volume $> 65\text{cm}^3$ or infarction volume $> 150\text{cm}^3$, (d) hydrocephalus (e) sub-falcorial engagement, (f) hypertension $> 150\text{mmHg}$ and/or (g) anticoagulant treatment. Each item being rated by a point.

Results: During the study period, 104 patients were included. Fifty-nine patients (57%) had a hemorrhagic stroke, 5 (5%) an ischemic stroke and 30 (29%) a sub arachnoid hemorrhage. 32 (31%) patients had a brain death. The initial median Glasgow coma scale was 4 [3-8]. The mean age was 65 years (± 2). The "PreME SCORE" tool was available for all patients. The threshold is optimal when the score is strictly higher than 3 points. Its sensibility, to detect a risk of ME was 65% and its specificity was 86%. The positive predictive value was 85%.

Conclusion: The identification of patients who may be eligible for organ retrieval is difficult in emergency department. This tool for screening the risk of passing through the BD at the reception desk in the emergency room appears simple to implement. It provides a standardized and reproducible approach to ME risk assessment. The use of this score at the time of emergency department management, after validation by a prospective study, could make it possible to improve the identification of patients at risk of passing into an EM state justifying resuscitation management and the number of multi-organ samples.

#18967 : “Mind your Head” – a quality improvement project assessing the advice given to patients following a head injury in a London Emergency Department**Authors:**

Dominika Goroszeniuk (1), David Shackleton (1), Ashish Jhala (1), Patrick Quinn (1), Max Friedman (1)

1. , NHS, London, UK

Keywords: Head injury, Concussion, Emergency department, advice, return to play

Abstract :

Introduction

Head injuries and concussion have been highlighted for years in the media due to athletes sustaining either fatal or life changing consequences. Therefore, managing patients with head injuries is an essential skill of all Emergency Physicians. An extensive literature analysis identified several areas for improvement, one of which was the head injury advice given to those who had sustained an injury needs to be consistent and adequate in its explanation for patients regarding further care. A quality improvement project was undertaken at a District General Hospital Emergency Department (ED) in London, to improve the safety and long-term care of patients who have sustained a head injury (HI), by ensuring they have up-to-date written advice regarding concussion and partaking in sports and exercise after their injury.

Methods

There was concurrent analysis of the number of patients attending the ED with minor head injuries and review of the documentation by ED staff regarding the written HI and return to play (RTP) advice, over a six-month period. Three plan-do-study-act (PDSA) cycles were undertaken: doctors giving head injury and RTP advice, prompting patients to ask for advice and lastly empowering the triage nurses to give HI/RTP advice on first contact with the patient. The team analysed the numbers of documented written HI advice after each cycle and made modifications.

Results

National Institute for Health and Care Excellence (NICE) guidelines expect 100% of all patients to have written HI advice, therefore our aim was to have all patients given written HI advice, and 70% receiving RTP advice after an injury. Our results showed that with improving awareness, teaching and access to HI and RTP advice, the number of patients receiving written HI advice improved. Over 71% of patients received written head injury advice after the 2nd PDSA cycle, and our rate of written RTP increased to 13%, from a baseline of zero. The third cycle showed a decrease in patients receiving written HI (60%) and RTP (6%) advice.

Conclusions

The results demonstrate the positive outcome of regular teaching and awareness for staff as well as patients in a busy Emergency Department. Appropriately documented discharge advice to patients on head injuries, concussion and their day-to-day activities is good medical practice. Adequate explanation of concussive symptoms to patients with head injuries and advising them correctly about further exercise and activity is good medical practice, as well as documenting the advice given. Improving staff knowledge in early recognition and long-term management of head injuries increased staff confidence in supplying RTP/HI advice. Our next steps are to establish a head injury/concussion clinic within our ED, with due consideration of making an “App” designed for patient use during and after their attendance in the ED.

Trial Registration / Funding Information (only) :

none needed Registered with NHS trust Research team

#18970 : A RETROSPECTIVE STUDY ABOUT EMERGENCY MANAGEMENT OF ATRIAL FIBRILLATION (AF)

Authors:

Raquel Cantón Cortés (1), Nuria Vicente Gilabert (1), Francisco Manuel Rodríguez Rubio (1), Carlos Máximo Jaime Moreno (2), Marta Cañadilla Ferreira (3), Marta Vicente Gilabert (4), Jorge Escribano Poveda (5)

1. Emergency, Hospital Comarcal del Noroeste (Caravaca de la Cruz, Murcia), Murcia, SPAIN
2. Emergency, Hospital Universitario Mútua de Tarrassa (Barcelona), Barcelona, SPAIN
3. Preventive Medicine, Hospital Universitario Virgen de la Arrixaca, Murcia, SPAIN
4. Internal Medicine, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, SPAIN
5. Radiologic, Hospital Universitario de Torrevieja (Alicante), Alicante, SPAIN

Keywords: Atrial fibrillation, Therapeutics, Emergency service

Abstract :

Introduction. Atrial fibrillation is the most frequently found sustained arrhythmia in the emergency department. Its diagnosis requires monitoring of the heart rate by means of an ECG. Early detection will condition the treatment and improve the patient's prognosis. The treatment is focused on the prevention of the thromboembolic phenomena, control of the frequency and cardiac rhythm.

Objective. The aim of the present study was to describe the emergency management of atrial fibrillation.

Methods. A descriptive, observational and retrospective study in a Hospital Comarcal Del Noroeste Murcia (a rural Centre of Spain) was described. In this study were included all patients aged 18 years with atrial fibrillation as diagnosis in emergency room from the 1st January to the 31th December 2017.

Results. The sample under study was constituted by 209 patients. All patients were given the constants upon arrival at the emergency room: average heart rate 102.41 bpm, mean systolic blood pressure 130.52 mmHg, mean diastolic blood pressure 78.77 mmHg, average oxygen saturation 96.21%, and average temperature 35.99°C.

The physical examination performed on patients included: cardiac auscultation in 98.09% of the patients, pulmonary auscultation in 96.17%, neurological examination in 22.97%, and exploration of the lower limbs in 66.03%. The complementary tests performed were: blood biochemistry in 94.26%, blood count in 95.22%, cardiac enzymes in 79.43%, coagulation in 79.43%, electrocardiogram in 93.3%, and chest radiography in 75.6%.

The treatment used in the emergency department was: amiodarone in 18.19%, electrical cardioversion in 17.71%, bisoprolol in 17.71%, digoxin in 16.27%, flecainide in 6.71%, diltiazem in 5.27%, and other antiarrhythmics in 9.57%. CH₂DS₂VASc was calculated in 46.41% of patients and HASBLED in 27.27% to assess whether anticoagulation was indicated. 39.23% of the patients were already taking an anticoagulant due to previous diagnosis of AF or stroke.

59.64% of the patients had a sinus rhythm at discharge, and the remaining 40.36% remained in AF.

Conclusion. AF is a common cause in the emergency department, and for this reason it is important to know how to handle this pathology. When AF is suspected, a detailed examination should be performed, including taking a constant (very important heart rate) and an electrocardiogram. In our study, the heart rate was taken from all patients and an electrocardiogram was performed in more than 9 out of 10 patients.

In the treatment, we must control the rhythm (<48 hours of duration or hemodynamic instability) and the heart rate. In our study, the most used treatment was amiodarone, electrical cardioversion, bisoprolol and digoxin. In addition, the initiation or continuation of anticoagulation should be assessed with the CH₂DS₂VASc and HASBLED scales.

In almost 6 out of 10 patients, heart rate control was achieved at discharge.

#18971 : Treatment used in atrial fibrillation in patients with or without previous diagnosis of atrial fibrillation.

Authors:

Nuria Vicente Gilabert (1), Francisco Manuel Rodríguez Rubio (1), Raquel Cantón Cortés (1), Carlos Máximo Jaime Moreno (2), Marta Vicente Gilabert (3), Marta Cañadilla Ferreira (4), Jorge Escribano Poveda (5)

1. Emergency, Hospital Comarcal del Noroeste, Murcia, SPAIN
2. Emergency, Hospital Universitario Mútua de Tarrassa, Barcelona, SPAIN
3. Internal Medicine, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, SPAIN
4. Preventive Medicine, Hospital Universitario Virgen de la Arrixaca, Murcia, SPAIN
5. Radiology, Hospital Universitario de Torrevieja, Alicante, SPAIN

Keywords: Atrial fibrillation, emergencies, epidemiology.

Abstract :

Introduction. Atrial fibrillation (AF) is the most frequently found sustained arrhythmia in the emergency department. The presence of AF complicates the management of patients presenting as medical emergencies. The treatment is focused on the control of the frequency and cardiac rhythm. AF is associated with an important morbimortality in the form of stroke, thromboembolism and heart failure.

Objective. The aim of the present study is to evaluate the drugs used in treatment of atrial fibrillation in patients with and without prior atrial fibrillation in the emergency department.

Methods. A descriptive observational, and retrospective study in a Hospital Comarcal Del Noroeste Murcia (a rural Centre of Spain) is described. In this study were included all patients aged 18 years with atrial fibrillation as diagnosis in emergency room from the 1st January to the 31th December 2017. We analyzed the pharmacological treatment.

Results. The sample under study is constituted by 209 patients: 116 with previous diagnosis of AF and 93 no. The patients with previous diagnosis of AF had average heart rate 103.27 bpm and the patients without previous AF had average heart rate 101.31 bpm. The treatment used in the emergency department in the patients with previous diagnosis of AF was: electrical cardioversion in 4.3% (5 patients), bisoprolol in 19.83% (23 patients), amiodarone in 20.69% (24 patients), digoxin in 16.38% (19 patients), flecainide in 8.62% (10 patients), diltiazem in 3.44% (4 patients), and other antiarrhythmics in 8.62% (10 patients). The treatment used in the emergency department in the patients without previous diagnosis of AF was: electrical cardioversion in 8.61% (8 patients), bisoprolol in 13.98% (13 patients), amiodarone in 11.84% (11 patients), digoxin in 16.13% (15 patients), flecainide in 4.3% (4 patients), diltiazem in 7.53% (7 patients), and other antiarrhythmics in 12.9% (12 patients). About the patients with previously AF, 54.68% had a sinus rhythm at discharge, and 45.32% remained in AF. Regarding patients without previous diagnosis of AF, 66% had a sinus rhythm at discharge, and 34% remained in AF. The mean time of staying at the emergency room was 508.14 minutes in patients with previously AF and 510.63 minutes in patients without previously AF.

Conclusion. We detected differences in the treatment between patients with de novo AF and previously diagnosis AF but the mean time staying in emergency room was similar in both groups. There is a greater tendency to perform electrical cardioversion in patients without previous AF. About the drugs, greater use was of Bisoprolol, Amiodarone and Digoxin in both groups. Bisoprolol is used in a lesser proportion in patients with previously AF, with greater use of Amiodarone. Sinus rhythm control was obtained in greater proportion in patients without previous diagnosis of AF. The mean time of staying at the emergency room was similar in both groups.

#18972 : Management in the 6 months after a diagnosis of atrial fibrillation in the emergency department**Authors:**

Francisco Manuel Rodriguez Rubio (1), Raquel Cantón Cortés (1), Nuria Vicente Gilabert (1), Carlos Máximo Jaime Moreno (2), Marta Cañadilla Ferreira (3), Marta Vicente Gilabert (4)

1. Emergency, Hospital Comarcal del Noroeste, Caravaca, Murcia, SPAIN
2. Emergency, Hospital Universitario Mútua de Tarrassa, Barcelona, SPAIN
3. Preventive Medicina, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, SPAIN
4. Internal Medicine, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, SPAIN

Keywords: Atrial fibrillation, emergencies, anticoagulants, cardiovascular diseases

Abstract :**Introduction:**

Atrial fibrillation (AF) is the most frequently found sustained arrhythmia in the emergency department and is associated with increased morbidity and mortality. Atrial fibrillation is a leading cause of cardiovascular disease worldwide. Fundamentally oral anticoagulants have shown their ability to reduce this risk.

Objective:

The aim of the present study is to investigate the impact of diagnosed atrial fibrillation in the emergency room with future major adverse cardiac events

Methods:

A descriptive observational, and retrospective study in a Hospital Comarcal Del Noroeste Murcia (a rural Centre of Spain) is described. In this study were included all patients aged 18 years with atrial fibrillation as diagnosis in emergency room from the 1st January to the 31th December 2017. We analyzed the variables: average age, sex, CHA2DS2-VASc and HASBLED scores and finally the cardiovascular diseases in the first six months..

Results:

The sample under study was constituted by 209 patients: 49.28% men and 50.72% women, with average age was 73 years. The average of the CHA2DS2-VASc risk stratification score was 3.02 and the average of the HAS-BLED bleeding risk score was 1.71.

After an evaluation in the emergency room, of the 60.77% patients without oral anticoagulants therapies, 26.12% patients was prescribed oral anticoagulant therapies at discharge changed.

70.81 % went to cardiology consult and in 52.70% oral anticoagulant therapies were changed in the first six months. In the first six months some patients suffered cardiovascular events as following: 21.53% new episode of AF, 7.17% heart failure ,7.18% past away, 3.35% ischemic heart disease, 1.44% septic shock, 1.44% others events and 0.48% stroke.

Conclusion:

The association of AF with the risk of cardiovascular diseases has been confirmed in previous studies. The clinical benefit of initiating anticoagulant therapy is practically universal, with the exception of patients with very low risk (CHA2DS2-VASc). The majority of cases received the oral anticoagulant therapy at discharge based on the CHA2DS2-VASc score and HAS-BLED scales.

In almost 6 out of 10 patients consulted in cardiology and only 1 out of 4 the oral anticoagulant was changed. 1 out of 2 patients suffered cardiovascular diseases, new episode of atrial fibrillation was the more frequent.

#18973 : Methoxyflurane in the emergency department; a brief summary of our experiences.

Authors:

Richard Austin (1), Lakshmi Gangadharan (1), Nicholas Whitlock (1)

1. Emergency Department, Bedford Hospital NHS Trust, Bedford, UK

Keywords: methoxyflurane, pain relief, procedural sedation, time to discharge

Abstract :

Introduction

In the Emergency Department at Bedford Hospital methoxyflurane, a halogenated ether anaesthetic agent, has been used as an alternative to procedural sedation since December 2017. This study aimed to evaluate a number of factors relating to its scope of use, efficacy, adverse events and discharge time post procedure.

Method

A convenience sample of patients who received methoxyflurane for analgesia to allow a procedure had prospective data collected by the treating clinician from December 2017 to March 2019. A standard data collection sheet was used, collected and analysed by the researchers. Data collected included pain score prior to administration, at 1 minute after the administration of methoxyflurane started and at 15 minutes. Data on adverse outcomes, success or failure of procedure, administration and discharge times, and user comments was also collected.

Results

60 uses of methoxyflurane were recorded. The most common indication for use was shoulder dislocation (n=19), followed by reduction of colles fractures (n=13) and manipulation of ankle fracture/dislocations (n=10). 6 cases were deemed 'failure of procedure'. Of these 4 were shoulder relocations, 1 ankle fracture/dislocation, 1 hip dislocation. There was 1 adverse event, with a patient feeling 'dizzy'.

Pain score was recorded in 55 cases. The mean pain score prior to administration of pentrox was 8, the mean pain score at 1 minute following the start of administration was 5 and the mean pain score at 15 minutes following the start of administration was 2.

Mean time to discharge from administration in those cases not requiring admission (n=15), or a second procedure (n=6) was 53 minutes.

Conclusions and Discussion

Although this is a small data set from a single centre, we feel that methoxyflurane has proven itself an effective form of pain relief, allowing for a wide range of procedures to be carried out without the need for procedural sedation.

The failure rate seems acceptable at approximately 10% whilst it appears to be generally well tolerated by patients, with only 1 minor adverse event in our data set. Discharge post procedure is prompt and the average is below the minimum 1 hour timeframe recommended for procedural sedation

Trial Registration / Funding Information (only) :

Not a registered trial, no funding received.

#18976 : A Retrospective Chart Analysis of Early Postpartum Complications Resulting in Visits to the Emergency Department**Authors:**

Prabhpreet Hundal (1), Cassandra Quan (1), Shayan Assaie (2), Leila Salehi (3), Prashant Phalpher (3), Maher Abou-Seido (4), Rahim Valani (5)

1. Resident Physician, McMaster University, Brampton, CANADA
2. Student, Queen's University, Kingston, CANADA
3. Emergency Medicine, William Osler Health System, Brampton, CANADA
4. Obstetrics and Gynecology, William Osler Health System, Brampton, CANADA
5. Emergency Medicine, University of Toronto, Brampton, CANADA

Keywords: postpartum, emergency department, obstetrics

Abstract :

Background: With increasing fiscal restraints and the need for efficient delivery models, women are being discharged sooner postpartum. As a consequence, complications that would easily be dealt with are now being captured later. These patients present to the Emergency Department (ED) to access quicker care to manage these complications. The purpose of this study was to review the reasons that postpartum women present to the ED in the short term (≤ 10 days post delivery).

Methods: This was a retrospective study based out of a large community hospital, which has the highest birth rate in the province of Ontario, Canada. Research ethics approval was obtained. Women who delivered at William Osler Health Services (WOHS) between January 1, 2018 and December 31, 2018 and who presented to the ED within 10 days of delivery. Patient demographics, obstetrical parameters, type of delivery, time of ED visit, and management were all extracted. The primary outcome is the rate of and reasons for postpartum visits to the emergency department. The secondary outcome is to identify maternal characteristics that are associated with postpartum visits to the emergency department. Descriptive statistics were used to summarize the findings.

Results/Findings: In 2018, there were approximately 8000 deliveries across WOHS. There were 429 unique postpartum ED visits between January 1 and December 31, 2018, of which 382 were included in the analysis. The mean age was 31.21 years (range 19.00 to 43.00, SD 4.83). The mean gravidity was 2.28, and the median gestational age at delivery was 39.14 weeks (range 20.00 to 41.43, SD 2.29). Most of the patients delivered via spontaneous vaginal delivery (52.36%), and the rate of operative vaginal delivery and caesarean section was 7.85% and 39.79% respectively. Group B Streptococcus status was positive in 17.80% of all patients. The median time of presentation to the ED was 5.00 days (IQR 4.00 to 8.00, SD 2.51). The most common reasons for presentation were abdominal pain (17.02%), wound issue (13.09%), and fever or vaginal/rectal pain (9.95%). Only a quarter of cases required an obstetrical consultation, and 85.86% of all visits were discharged home. The rate of admission and transfer to another centre is 12.04% and 2.09% respectively.

Conclusion: This study was the first in a busy community setting that looked at return ED visits in the short-term postpartum period. Educating patients on pain management and wound care can potentially decrease the rate of ED visits by this patient population given the high incidence of patients presenting with this problem. Further studies are needed to review the role of patient education, home care, and the need for early obstetrical follow up to reduce ED visits.

#18977 : Study about the epidemiology of the novo atrial fibrillation vs previously atrial fibrillation in the emergency room**Authors:**

Francisco Manuel Rodriguez Rubio (1), Raquel Cantón Cortés (1), Nuria Vicente Gilabert (1), Carlos Máximo Jaime Moreno (2), Marta Cañadilla Ferreira (3), Marta Vicente Gilabert (4)

1. Emergency, Hospital Comarcal del Noroeste, Caravaca, Murcia, SPAIN
2. Emergency, Hospital Universitario Mútua de Tarrassa, Barcelona, SPAIN
3. Preventive Medicina, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, SPAIN
4. Internal Medicine, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, SPAIN

Keywords: Atrial fibrillation, emergencies, epidemiology

Abstract :**Introduction:**

Atrial fibrillation (AF) is the most frequently found sustained arrhythmia in the emergency department. About 25% of the world's population over 40 years age will suffer it across their life. It appears in all ages, being more frequent in the elderly.

Objective:

The aim of the present study is to describe the characteristics of patients attending a hospital emergency department for de novo atrial fibrillation versus previously diagnosed atrial fibrillation.

Methods:

A descriptive, observational and retrospective study in a Hospital Comarcal Del Noroeste Murcia (a rural Centre of Spain) is described. In this study were included all patients aged 18 years with atrial fibrillation as diagnosis in emergency room from the 1st January to the 31th December 2017. We recorded demographic information and data related to the acute episode.

Results:

The sample under study was constituted by 209 patients. 116 patients (55.5%) had diagnosis of previously AF whereas 93 patients (44,5%) had not diagnosis of previously AF. 51.61% of patients with previously AF were women, whereas in the novo AF were 50% women.

The distribution of personal risk history in the patients with previous diagnosis of AF was: 80.17% older than 60 years, 72.41% hypertension, 41.38% hypercholesterolemia, 20.69% diabetes, 31.03% heart failure, 22.41% ischemic heart disease, 22.41% valvulopathy, 15.52% renal failure, 16.37% thyroid alteration, 8.62% stroke, 5.17% cognitive impairment, 7.76% sleep apnea, 4.31% deep vein thrombosis and 6.03% venous insufficiency. And in the patients without previously AF was: 86.02% older than 60 years, 68.82% hypertension, 47.31% hypercholesterolemia, 33.33% diabetes, 11.83% cognitive impairment, 10.75% renal failure, 9.68% thyroid alteration, 8.6% heart failure, 7.53% stroke, 6.45% ischemic heart disease, 6.45% valvulopathy, 4.3% venous insufficiency, 3.23% sleep apnea and 3.23% deep vein thrombosis.

The reason for consultation in the patients with previously AF was palpitations (56.9%), dyspnea (27.59%), chest pain (18.97%), chance finding (18.28%), dizziness (11.21%) and syncope (0.86%). And in the patients without previous AF was: 32.26% palpitations, 27.96% dyspnea, 19.35% dizziness, 18.28% it was a casual finding, 9.68% syncope and 7.53% chest pain.

The average heart rate was 103.27 bpm in patients with previously AF, and was 101.31 bpm in the patients without previously AF.

Conclusion:

We detected differences between patients with the novo AF and previously diagnosed AF, but the clinical symptom of presentation of the two groups was similar. In both groups, the AF has a similar shape to both sexes, with the ratio being almost 1: 1 (men: women). Patients with previously AF were younger and had more rates of cardiovascular risk factors. Among the most frequent causes of consultation in the emergency room, the presence of palpitations or dyspnea was more prevalent in both groups. Finally the average heart rate was similar in both groups (around 100 bpm).

#18979 : Support for victims of terrorism by the Military SAMU Regulation Center

Authors:

saloua kacem (1), saloua kacem (1), sonia slimi (1), ichraf dridi (1), mekki ben salah (1)

1. Tunisian Military SAMU, Hôpital Militaire Principal d'Instruction de Tunis, Tunis, TUNISIA

Keywords: Military SAMU Regulation Center, victims of terrorism, medical support

Abstract :**BACKGROUND:**

The Tunisian military SAMU was created to support military troupes deployed and their families. The medical regulation center is confronted with the management of medical emergencies, military casualties in accidents and especially in terrorist attacks and then coordinate the intervention of physicians of the pre-hospital emergency medical services (SAMU-SMUR- AirEvac) in the field to transport the patients.

The objective of this study was to describe the various cases of casualties of terrorist attacks treated by military SAMU regulation center which organize their transport and repartition in several hospitals.

Materials and methods: We conducted a retrospective study using data collected over a period of one year between January 1 and December 31 2018. These data are based on call registry reports of calls received by the military SAMU regulation center of the for urgent medical assistance to victims of terrorist acts.

Results: We dealt with 12 cases of terrorist attacks that resulted in 88 victims, 58% of whom were military; 22% police officers; 10% national guard and 10% civilians. The agents of the National Guard, ambushed in Ghar Dimaou in the north west of Tunisia was the deadliest with 5 deaths and 4 seriously wounded. The bombing of Habib Bourguiba Avenue by a terrorist explosion caused the greatest number of casualties, 24 victims including 19 police officers and 5 civilians. Mines explosions in Kasserine at Mount Chaâmbi have caused military casualties. The Initial medical support for 27 victims (52%) was at the regional kasserine. In December 2018 an advanced medical post in kasserine(field hospital) was established and 12 victims of terrorist attacks were treated initially at this hospital, then transferred directly to the Military Hospital of Tunis. AIREVAC and SMUR Military were activated for the transfer of 16 most serious victims including 1 civilian. The Military SAMU participated in 60% of the victims' transfers.

Conclusion: This study reports an assessment of the cases handled by the Military Medical Regulation Center and has identified some deficiencies in data collection. More details are required which might help to develop prehospital emergency services in cases of victims of military operations specially with AIR evacuation.

#18980 : A retrospective study about atrial fibrillation in the emergency department in patients with previous diagnosis of atrial fibrillation**Authors:**

Marta Vicente Gilabert (1), Raquel Cantón Cortés (2), Nuria Vicente Gilabert (2), Francisco Manuel Rodríguez Rubio (2), Carlos Máximo Jaime Moreno (3), Marta Cañadilla Ferreira (4)

1. Internal Medicine, Hospital Universitario Virgen de la Arrixaca, Murcia, SPAIN
2. Emergency, Hospital Comarcal del Noroeste (Caravaca de la Cruz-Murcia), Murcia, SPAIN
3. Emergency, Hospital Universitario Mútua de Tarrassa, Barcelona, SPAIN
4. Preventive Medicine, Hospital Universitario Virgen de la Arrixaca, Murcia, SPAIN

Keywords: Atrial fibrillation, emergencies, epidemiology.

Abstract :

Introduction. Atrial fibrillation (AF) is the most frequently found sustained arrhythmia in the emergency department. Its diagnosis requires monitoring of the heart rate by means of an ECG. Early detection will condition the treatment and improve the patient's prognosis.

Objective. The aim of the present study is to describe the characteristics of patients, who are previously FA, attending a hospital emergency department for atrial fibrillation.

Methods. A descriptive, observational and retrospective study in a Hospital Comarcal Del Noroeste Murcia (a rural Centre of Spain) is described. In this study were included all patients aged 18 years with novo atrial fibrillation as diagnosis in emergency room from the 1st January to the 31th December 2017. We recorded demographic information and data related to the acute episode.

Results.

The sample under study was constituted by 116 patients: 50% women and 50% men with an average age of 72 years. The distribution of personal risk history in the sample was: 80.17% older than 60 years, 72.41% hypertension, 41.38% hypercholesterolemia, 31.03% heart failure, 22.41% ischemic heart disease, 22.41% valvulopathy, 20.69% diabetes, 16.37% thyroid alteration, 15.52% renal failure, 8.62% stroke, 7.76% sleep apnea, 6.03% venous insufficiency, 5.17% cognitive impairment and 4.31% deep vein thrombosis. The patients had previous diagnosis of atrial fibrillation: 62.07% paroxysmal AF, 30.17% permanent AF, 7.76% persistent AF. Some patients were taking drugs to control rhythm/heart rate, anticoagulants and/or antiplatelet agents. 56.03% beta-blockers: 41.38% bisoprolol, 10.34% sotalol, 2.59% propranolol, and 1.72% carvedilol. Other drugs for rhythm / frequency control: 15.52% flecainide, 9.48% amiodarone, 8.62% digoxin, and 5.17% verapamil. 69.83% anticoagulant treatment: 50% acenocoumarol, 9.48% dabigatran, 5.17% apixaban, and 5.17% other anticoagulants. 12.07% antiaggregant treatment: 11.21% acetylsalicylic acid, and 0.86% clopidogrel. The most frequent clinical symptom of presentation of all registered patients was palpitations (56.9%). Other common clinical symptoms on debut were dyspnea (27.59%), chest pain (18.97%), chance finding (18.28%) and dizziness (11.21%). Clinical presentations less prevalent in debut include syncope (0.86%).

Conclusion.

The epidemiology of AF in this series is comparable with previous publications. The AF has a similar shape to both sexes, being the ratio 1: 1 (men: women) in this serie. The prevalence of AF increases with age (in this series, 8 out of 10 over 60 years old). 6 out of 10 patients had a previous diagnosis of paroxysmal atrial fibrillation, 3 out of 10 diagnosed persistent AF, and almost 1 in 10 of permanent AF. Of the patients who took medication for the control of heart rate / frequency before their consultation in the emergency room, half of them took some beta-blocker (the most frequent was bisoprolol). Almost 7 out of 10 patients previously took anticoagulant treatment, with acenocoumarol being consumed by half of the patients. Regarding the reason for consultation, more than half of the patients reported palpitations.

#18981 : A retrospective study about epidemiology of de novo atrial fibrillation in the emergency department

Authors:

Marta Vicente Gilabert (1), Nuria Vicente Gilabert (2), Raquel Cantón Cortés (2), Francisco Manuel Rodríguez Rubio (2), Carlos Máximo Jaime Moreno (3), Marta Cañadilla Ferreira (4)

1. Internal Medicine, Hospital Universitario Virgen de la Arrixaca, Murcia, SPAIN
2. Emergency, Hospital Comarcal del Noroeste (Caravaca de la Cruz-Murcia), Murcia, SPAIN
3. Emergency, Hospital Universitario Mútua de Tarrassa, Barcelona, SPAIN
4. Preventive Medicine, Hospital Universitario Virgen de la Arrixaca, Murcia, SPAIN

Keywords: Atrial fibrillation, emergencies, epidemiology, treatment.

Abstract :

Introduction. Atrial fibrillation (AF) is the most frequently found sustained arrhythmia in the emergency department. About 25% of the world's population over 40 years age will suffer it across their life. It appears in all ages, being more frequent in the elderly. Atrial fibrillation is associated with an important morbimortality in the form of stroke, thromboembolism and heart failure.

Objective. The aim of the present study is to describe the characteristics of patients attending a hospital emergency department for the novo atrial fibrillation.

Methods. A descriptive, observational and retrospective study in a Hospital Comarcal Del Noroeste Murcia (a rural Centre of Spain) is described. In this study were included all patients aged 18 years with novo atrial fibrillation as diagnosis in emergency room from the 1st January to the 31th December 2017. We recorded demographic information and data related to the acute episode and the management.

Results. The sample under study was constituted by 93 patients: 45 men (48.39%) and 48 women (51.61%). The average age was 73 years, with a minimum age of 32 and a maximum age of 98. The distribution of personal risk history in the sample was: 86.02% older than 60 years, 68.82% hypertension, 47.31% hypercholesterolemia, 33.33% diabetes, 11.83% cognitive impairment, 10.75% renal failure, 9.68% thyroid alteration, 8.6% heart failure, 7.53% stroke, 6.45% ischemic heart disease, 6.45% valvulopathy, 4.3% venous insufficiency, 3.23% sleep apnea and 3.23% deep vein thrombosis. We analyzed the reason for consultation of the patients: 32.26% palpitations, 27.96% dyspnea, 19.35% dizziness, 18.28% it was a casual finding, 9.68% syncope and 7.53% chest pain.

Conclusion. The epidemiology of novo AF in this series is comparable with previous publications. The AF has a similar shape to both sexes, with the ratio being almost 1: 1 (men: women). The prevalence of AF increases with age (in this series, 8 out of 10 over 60 years old). Other risk factors related to AF are hypertension, hypercholesterolemia, diabetes, etc. Each of the risk factors cited occur in more than 3 out of 10 patients in this series. Among the most frequent causes of consultation in the emergency room, the presence of palpitations or dyspnea was more prevalent.

#18982 : The “no bed challenge experience” at the emergency department**Authors:**

Hamed Rym (1), Imen Mekki (1), aymen zoubli (2), Fatma Lamouchi (3), Badr Ferjeoui (3), Maaref Amel (1), safia Othmani (3), Bouhajja Béchir (1)

1. Emergency Department Charles Nicolle Hospital , tunisia, tunis, TUNISIA
2. Emergency department Charles Nicolle Hospital, Hospital, tunis, TUNISIA
3. Emergency department Charles Nicolle Hospital, Emergency department Charles Nicolle Hospital, Tunis, TUNISIA

Keywords: emergency, organization, patients, flow, hospitalization, evaluation

Abstract :**Introduction :**

Emergency department (ED) efficiency obey to metrics aiming to improve patient care process without compromising his safety. Overcrowding remains real in ED and waiting times are varying but trend to be high worldwide. This often impairs patient flow and delays in appropriate treatment for newly presenting cases. Hence emergency physician is faced to a double challenge of diagnosis with initiating treatment in time-sensitive complex broad of clinical diseases and the lack of hospitalization beds called “Exit block” when emergency making diagnosis process is finished. Moreover, studies showed the impact of high length of stay (LOS) on both mortality and morbidity rates and on disturbances in flow patients. The aim of this study was to evaluate and analyze the profile of “exit block” using the experience of No bed Challenge (NBC) in one emergency department.

Study design :

This was an observational prospective study in a teaching emergency department with 150.000 visits / year. Daily inclusion of patients who fulfill hospitalization criteria in a medical or surgical ward after a emergency making diagnosis process finished and still waiting for a hospitalization bed with a LOS over 6 hours. Other factors were studied : LOS, mortality rate at Day 7, hospitalization Ratio (HR) defined by the need of hospitalization compared to the real admission rate. We excluded all patients having a normal process management moved to inpatient beds.

Results:

Inclusion of 80 patients over 40 days. Mean age = 61 ± 17 years. Sex-ratio = 1,42; Medical history : hypertension n = 34 (42,5%); diabetes n= 34 (42,5%); coronary heart disease n =10 (12,5%); Chronic kidney disease n = 16 (20%); ≥ 2 past medical history events n = 43 (54%). Population characteristics : admission to the resuscitation room : n = 26 (32,5%); mean lactate level = $2,3 \pm 1,2$ mmol/l; extrarenal epuration n= 8 (10%); need to vasopressor support n = 5 (6%); mean LOS in the observational emergency unit = 30 hours ± 21 ; mean SOFA score = $4,2 \pm 3$; mortality at Day 7 n =6 (7,5%); Discharged home from ED after treatment while requiring ongoing long term observation n =29 (36%); final admission to inpatient bed n =18 (22,5%); Hospitalization rates RH (%) : orthopedics 3/4 (75%);urology 2/4 (50%); cardiology 5/14 (35%); Pneumology 2 / 11 (18%); Neurology 1/7 (14%); Nephrology 2/14 (14%); Gastroenterology 0/3 ; ICU 0/8; ED 32/3 (1100%).

Conclusion:

This study based on the experience of No Bed Challenge in the ED showed that “exit block” is real and highlighted the mismatch between the specificities needed to an efficient ED and the difficulties to improve the flow circuit of patients attending to the ED . This gap is a trigger leading to disturbances in ED function and may be avoided by implementing steps of evaluation in organization to improve prognosis patients.

#18988 : Effect of the floor level on a neurologically favorable discharge after cardiac arrest according to the event location**Authors:**

Choung Ah Lee (1), Han Joo Choi (2), Hyung Jun Moon (3), Won Jung Jeong (4), Gi Woon Kim (5)

1. , Hallym Univ. Dongtan Sacred Heart Hospital , Hwaseong, KOREA
2. , Dankook University Hospital, Cheonan, KOREA
3. , Soon Chun Hyang University Hospital, Cheonan, KOREA
4. , Catholic University of Korea, ST. Vincent's Hospital, Suwon, KOREA
5. , Soon Chun Hyang University Hospital, Bucheon, KOREA

Keywords: Cardiac arrest; Out-of-hospital cardiac arrest; Cardiopulmonary resuscitation; Emergency medical services

Abstract :**Background:**

Increases in the population concentrations in urban areas have led to increases in the numbers of people who live in high-rise buildings. Several studies reported the negative outcomes of patients who experience OHCA in high-rise buildings. Despite the above findings, we assumed that an increased vertical distance would always lead to a delayed EMS response time, as high-rise buildings tend to be densely populated and located in traffic center. This study aimed to compare the emergency medical service (EMS) response times and probability of a neurologically favorable discharge among patients who suffered an out-of-hospital cardiac arrest (OHCA) while on a high or low floor at home or in a public place.

Methods:

This retrospective analysis was based on Smart Advanced Life Support registry data from January 2016 to December 2017. Patients older than 18 years who suffered an OHCA due to medical causes were included in this study. Patients who were not resuscitated because of obvious signs of death, a refusal of CPR, do-not-resuscitation (DNR) state, or medically directed cessation of CPR; whose CA was witnessed by 911-initiated first responders; or who had incomplete data were excluded. A high floor was defined as the $\geq 3^{\text{rd}}$ floor above ground. We compared the probability of a neurologically favorable discharge according to the floor level and location (home vs. public place) of the OHCA event. Additionally, we calculated the call-to-scene and call-to-patient times after OHCA for patients classified into the high and low ($< 3^{\text{rd}}$) floor groups according to the CA event location.

Results:

Of the 6,335 included OHCA cases, 4,154 (65.6%) events occurred in homes. Rapid call-to-scene times for high floor events were reported in both homes and public places. A longer call-to-patient time was observed for home events. Among OHCA events that occurred on high floors, the likelihood of a neurologically favorable discharge was significantly lower if the event occurred in a public place (adjusted odds ratio [aOR]=0.58) but higher if the event occurred at home (aOR=1.49).

Discussion & Conclusions:

Both the EMS response times to OHCA events in high-rise buildings and the probability of a neurologically favorable discharge differed between homes and public places. The results suggest that the prognosis of an OHCA patient is more likely to be affected by the building structure and use rather than the floor height.

Trial Registration / Funding Information (only) :

Trial Registration: The study was not registered because of non-clinical work and secondary data usage. Funding: This study did not receive any specific funding.

#18989 : Electronic Triage Support System and Emergency Consultation using Artificial Intelligence Chat-bot System**Authors:**

Hiroshi Okudera (1), Masahiro Wakasugi (1), Mizuho Ii (2), Toshiomi Kawagishi (1), Tadaki Shibuya (1), Nozomu Seki (1)

1. Department of Crisis Medicine (Emergency and Disaster Medicine), Graduate School of Medicine, University of Toyama, Toyama, JAPAN

2. Department of Nursing, Graduate School of Medicine, University of Toyama, Toyama, JAPAN

Keywords: electronic triage, Japan Triage and Acuity System, Telephone Consultation, Artificial Intelligent, Chat-bot

Abstract :**Back Ground**

The number of patients in Japan's emergency care services continues to increase despite population decline. This is considered to be due to the diversification of the contents of emergency request due to the aging of the population. Therefore, we developed the Electronic Triage Support System (JTAS: Japan Triage and Acuity System) for use in Emergency Room as common language. JTAS has been used for 10 years in Japan and has achieved certain effects. Recently, based on the triage concept of JTAS, an emergency consultation system with a Chat-bot system by Artificial Intelligence (Ai) was developed.

Material and Method

JTAS was developed by a special committee of the Japanese Association for Emergency Medicine (JSEM). First version of JTAS as Electronic Triage Support System was the Web-based system. Based on 8-years experience and result on Web-JTAS system, we revised JTAS as iOS and Android Application called "JTAS2017" for use in Tablet. In this process, various corrections were made by some Ai analysis in Web-JTAS to make the triage algorithm of JTAS017 more clear and simple. With this analysis, an emergency consultation system with an Ai Chat-bot system was developed under supervision of JSEM. The emergency consultation system is free and public system, and anyone can access this chat-bot via the personal computer and smart phone. Using smart phone, the chat will be forwarded to public telephone consultant or "119" call, if necessary. From May 1 to 31 May, 2019, public trials are in progress in one prefecture in Japan.

Results

Outline of initial trial results and the issues for the full-fledged launch of Emergency Consultation using Artificial Intelligence Chat-bot System will be presented and discussed.

#18991 : Performance of pathogen-directed treatment for pneumonia in an emergency department short stay unit**Authors:**

Isabel Sia (1), Edison Goh (1), Rupeng Mong (2)

1. National University of Singapore, Yong Loo Lin School of Medicine, Singapore, SINGAPORE
2. Emergency Department, Changi General Hospital, Singapore, SINGAPORE

Keywords: pneumonia, short stay unit

Abstract :**Background**

An emergency department (ED) short stay unit (SSU) pneumonia protocol was implemented in 2017, providing an alternative to inpatient admission for patients with community-acquired pneumonia, assessed to require hospitalization. The maximum duration of stay was 23 hours. In addition to standard treatment, patients were evaluated for microbial aetiology with respiratory pathogens swab (BioFire® FilmArray®), pro-calcitonin and pneumococcal urinary antigen. These results guided treatment decisions (e.g. discontinuation/change of antibiotics/ Tamiflu® use) during their stay and subsequent discharge. We evaluate the safety and outcomes of this protocol, where management was based on microbial aetiology in addition to the patient's clinical condition.

Methods

This was a single centre, retrospective observational study, conducted in an acute regional hospital in Singapore. Only patients deemed likely for discharge within 23 hours are admitted to the short stay unit. Hence, patients with any of the following features were excluded from the protocol: i) significant hypoxia SpO₂ < 90%, ii) altered mental status, iii) significant renal impairment, iv) immunosuppression, v) suspicion of pulmonary tuberculosis, vii) multi-lobar involvement or presence of pleural effusion. All patients admitted under the pneumonia protocol during the study period were included in this study. Outcomes evaluated include conversion to inpatient, transfer to a higher acuity unit (high dependency, intensive care unit), re-attendances/re-admissions, and mortality.

Result

A total of 198 patients were evaluated. The median age was 53 (IQR 32-69), and 56% were male. The CURB-65 scores were as follows: CURB-65 0, 48%; CURB-65 1, 37%; CURB-65 2, 12%; CURB-65 3, 3%. The discharge rate from SSU was 67%, with 32% being converted to inpatient status. One patient was transferred to the high dependency unit. There were no transfers to the intensive care unit or mortalities. Fifteen out of 132 patients (11.4%) discharged from SSU re-attended within 30 days, of whom 4 (3.0%) required admission.

Respiratory swabs were done in 196 patients and were positive in 105 (54%) of them. Of the 105 patients, 68 were successfully discharged from SSU. Forty-one patients were discharged without antibiotics. The commonest viruses were Influenza A (17%), rhino/enterovirus (8.6%) and adenovirus (7.1%).

Twenty-one patients had atypical pathogens (16 had *Mycoplasma pneumoniae*, 4 had *Chlamydia pneumoniae*, 1 had *Bordetella pertussis*). Sixteen were successfully discharged from SSU. The majority (81%) of those discharged were treated with a macrolide. Of note, 20 of these patients had pro-calcitonin done, with 15 (75%) having levels ≤ 0.25ng/mL.

Urinary Streptococcal antigen was positive in 10 of 195 (5.1%) of patients tested. Four of these patients were successfully discharged from SSU, and treated with Amoxicillin/clavulanic acid or Amoxicillin.

Discussion and Conclusion

To our knowledge, a treatment approach guided by microbial aetiology has not been previously described in an SSU cohort of pneumonia patients. This approach appears to be safe, provides for targeted treatment, and allowed for selected patients with viral pneumonia to be discharged without antibiotics. There could potentially be improved antimicrobial stewardship and less adverse effects from unnecessary use of antibiotics. However, as this was a single-centre observational study, further data is required to validate our findings.

Trial Registration / Funding Information (only) :

Funding: There was no funding received for this study. Ethical approval: The Singhealth Institutional Review Board (Singapore) reviewed this study and deemed that ethical approval was not needed.

#18992 : Epidemiology and outcomes of trauma patients at The Indus Hospital, Karachi. Challenges and opportunities.**Authors:**

saima salman (1), anna yaffee (2)

1. Consultant EM/ Program Director, The Indus Hospital, Karachi, Pakistan, Karachi, PAKISTAN
2. Consultant EM, Grady Memorial Hospital, Emory University, Atlanta, atlanta, USA

Keywords: Pakistan, Injury, Trauma, Injury Severity Score (ISS), Low and middle income countries (LMIC)

Abstract :

Epidemiology and outcomes of trauma patients at The Indus Hospital, Karachi. Challenges and opportunities. Authors: Saima Salman, Syed Ghazanfar Saleem, Qurat ul Ain Sheikh³, Kaniz Farwa Haider⁴, Megan Rybarczyk⁵, Zayed Yasin⁶, Lubna Samad⁷, Anna Q Yaffee⁸. CONFLICT OF INTEREST: No conflict of interest FUNDING: No external funding was sought for this research work ABSTRACT: Introduction: Structured trauma care has been proven in literature to improve patient outcome. Many organized systems are established across the globe to familiarize and train Emergency Physicians with basic and advance trauma care. The need is more pronounced in low and middle income countries (LMICs) where limited resources and poorly structured health care systems add to the challenges of trauma care with increase in morbidity and mortality. Characterization of epidemiology of trauma helps in identification of risk factors, injury severity and outcomes and establishes the baseline upon which interventions can be structured. Objective: To characterize the epidemiology of trauma patients presenting to the emergency department (ED) at The Indus Hospital (TIH) in Karachi, Pakistan including demographics, presenting Injury Severity Score (ISS), interventions and disposition. Methodology: One year Retrospective chart review of all poly-trauma patients older than 14 years from July 2017 to June 2018 presenting to TIH ED was conducted. Results: Out of 972 trauma patients presenting to TIH ED, 663 (68.2%) were males and 309 (31.7%) were females. Road traffic accidents were the most common mode of presentation with 766 patients (78.8%) followed by 121 falls (12.7%). Injury Severity score (ISS) was calculated upon arrival and 528 (54.3%) were found to be critically injured. All 365 discharged patients (100%) were moderately injured with scores of 9-15 and there was 100% mortality of the maximally injured nine patients with scores of 75. However, only 3.4% of these patients received a Focused Assessment Sonography in Trauma (FAST) ultrasound and none received further helical imaging of chest or abdomen. 90% received intravenous fluids but only 3.4% received a blood transfusion. Industrial trauma (p value 0.01) and falls (p value 0.007) were more common in men whereas burn victims were mostly women (p value 0.0001). CONCLUSION: Given the unique position of TIH in terms of public-private partnership and philanthropy, the characterization of trauma patients presenting to TIH has strengthened our belief that patient outcomes can be improved through structured approach to trauma patients within the golden hour of trauma management through better inter specialty collaboration and lean utilization of resources. By identifying the gaps within patient management it is our hope that through interventions for capacity building, we will have a positive impact on patient outcome, specifically survival to discharge and stabilization/ diagnostic procedures received. KEY WORDS: Pakistan, Injury, Trauma, Injury Severity Score (ISS), Low and middle income countries (LMIC)

#18994 : The effect of watch-type haptic metronome on the quality of cardiopulmonary resuscitation: a simulation study**Authors:**

Boram Choi (1), Boram Choi (1), Taerim Kim (1), Sun Young Yoon (1), Eunjin Kang (1), Hee Yoon (1), Sung Yeon Hwang (1), Tae Gun Shin (1), Min Seob Sim (1), Ik Joon Jo (1), Won Chul Cha (1)

1. , Samsung Medical Center, Seoul, KOREA

Keywords: CPR, smartwatch, feedback device, simulation, chest compression, metronome

Abstract :

Introduction:

Good quality of chest compression is one of a principal element and an important for survival in resuscitation. Many CPR feedback devices allow effective chest compression. Recently, smartwatches have been introduced metronome applications providing silent haptic feedback. The aim of this study is to compare the effectiveness on the chest compression with or without the smartwatch application as the haptic feedback device (HFD) during CPR for medical professionals.

Methods:

This is a prospective, randomized crossover simulation study on a manikin (Ambu® Man) using Galaxy Gear S3 frontier smart watch (Samsung electronics Inc, Korea) with metronome application (Galaxy Store app Wearable Metronome®). The experiments were conducted at the Samsung Medical Center (Seoul, republic of Korea) from the 3rd to 12th of January 2019. Twenty experienced medical professionals volunteered and randomly divided into two groups. They asked to perform 2 minutes of chest compression continuously twice with an interval of 1 week for wash out period with or without the haptic feedback device. The data was analyzed with Mann-Whitney U test, χ^2 test, Fisher exact test, Generalized Estimation Equation (GEE), SAS version 9.4 (SAS Institute, Cary, NC) or R 3.5.1 as appropriate.

Result:

Demographic characteristics of the participants were no significant differences between the two groups regarding sex, age and experiences. Both groups showed mean interval of cardiac compression (CC) within optimal range (0.5-0.6 sec) but standard deviation was better in haptic group than control group (0.57+0.06 vs 0.56+0.13.) and $p = 0.535$. Number of adequate duration, defined as one compression within optimal range, did not showed significant difference (haptic assisted 2,918 (69.33%), non-haptic assisted 2,538 (60.09%), $p=0.286$). In subgroup analysis, haptic device feedback improved number of adequate duration in poor performance group (haptic assisted 1,341 (63.5%), non-haptic assisted 525 (25.4%), $p<0.001$). The odd ratio of haptic feedback group between better and poor performance was 5.34 (95% CI 2.16-13.18) respectfully.

Conclusion:

The Haptic Feedback Device improves chest compression quality performed by experienced medical professionals. The impact of using haptic feedback device was significantly higher in poor performance group.

Trial Registration / Funding Information (only) :

no appropriate register

#18996 : Non-conveyance within the emergency medical services – a descriptive study

Authors:

Erik Høglund (1), Agneta Schröder (1), Margareta Möller (1), Magnus Andersson-Hagiwara (2), Emma Ohlsson-nevo (1)

1. Örebro University, Örebro County Council, Örebro, SWEDEN

2. Borås University, Borås University, Borås, SWEDEN

Keywords: Emergency medical services, non-conveyance, observational study, patients

Abstract :

Background: Emergency medical services around the world are reporting that an increased proportion of patients are non-conveyed by the ambulance service to other levels of care. The proportion of patients which are non-conveyed differs between and within countries. The reason for this difference has been described to be both contextual and structural. It is questionable if the non-conveyance decisions are performed in a patient-safe manner since validated guidelines are lacking. Prior studies have highlighted the need for deeper knowledge surrounding the non-conveyed patients. Therefor the current study aims to describe the non-conveyed patient population.

Methods: A prospective observational medical record study was conducted using a consecutive sample of non-conveyed patients in the region during 2016-02-01 – 2017-01-31. Follow-up time was 168 hours (7 days). Descriptive statistics was used to describe the non-conveyed population.

Setting: The studied region is located in the central part of Sweden and has approximately 295 000 inhabitants. It consists of predominating rural areas and one middle sized city. There are three hospitals, one level one trauma center and two smaller hospitals with ICU capacity. The emergency medical service consists of three departments, one for each hospital, and has approximately 30 000 assignments per year. The majority of the ambulances are staffed with registered nurses and registered nurses with an additional year of university studies.

Preliminary results: In total 2695 patients were non-conveyed. The proportion of male versus female patients was similar. Small children, i.e. < 5, younger adults 18-30 and elderly 65-80 years of age, are more commonly non-conveyed than other age groups, $p < 0,05$. Approximately 18 percent of all patients visit the emergency department and/or in-hospital clinics within 7 days after being non-conveyed. The most common chief complaints among non-conveyed patients were chest and abdominal pain, respiratory disorders and unspecified disease.

Discussion & Conclusions: The most common group of patients to be non-conveyed by ambulance are the small children, young adults and the elderly. Almost one in five visited the emergency department within seven days after being non-conveyed. An increased knowledge of the non-conveyed patient population could lead to the development of clinical guidelines which may increase patient safety.

Ethical approval and informed consent: This study follows the ethical principles of the Helsinki Declaration and received ethical approval from the regional review board in Uppsala, Sweden, Dnr: 2015/465, amendment Dnr: 2015/465/1 and Dnr: 2015/465/3.

Trial Registration / Funding Information (only) :

Funding: This research received funding support from the Research Committee in the county council of Örebro grant numbers: OLL-674451, OLL-767301, OLL-811401, OLL-840471.

#18997 : Feasibility survey of the point-of-care ethanol test**Authors:**

Topi Mattila (1), Teemu Koivistoinen (1), Tuukka Tomminen (1), Markku Grönroos (1), Ville Hällberg (1), Ari Palomäki (2)

1. Kanta-Häme central hospital, emergency department, Kanta-Häme central hospital, emergency department, Hämeenlinna, FINLAND

2. Kanta-Häme central hospital, emergency department, Tampere University, faculty of medicine and health technology, Hämeenlinna, FINLAND

Keywords: Point-of-care, ethanol, test

Abstract :

Background

Alcohol is the most used drug in the world and its intake is an increasing problem worldwide. This leads to numerous emergency department admissions mainly due to trauma and intoxications. Paramedics, police forces and emergency departments use breathalyzer to estimate patients' ethanol intake fastly. However, breathalyzer cannot be used if patients' co-operation or lung function is insufficient. For example in the case of an unconscious patient it is not applicable and sometimes it may be vital to know immediately whether his/her condition is most likely due to massive alcohol abuse or could there be another underlying emergency. Analysis of intravenous ethanol samples takes more time and it is not applicable in the field circumstances.

Albio™ is, as far as we know, the first ethanol point-of-care test system. It measures accurately ethanol level in less than ten seconds from just a drop of blood and thus enables valuable and fast information of patients ethanol intake.

When starting to use Albio™, a test strip is placed into a meter which automatically turns it on. Blood sample can be taken from the fingertip and the volume needed is minimal. The blood drop is drawn to the test strip and the result can be read from the meters screen in a few seconds. Measurement units are per milles. The accuracy of Albio™ is 90% which is better than most breathalyzers. Albio™ measures only ethanol level of blood and other alcohols do not affect the result.

Methods

As a first hospital in the world, we started to use Albio™ in Kanta-Häme central hospital. Ten of our emergency physicians used the meter and evaluated feasibility of the device using a four point Likert scale (-2 =very difficult, -1 =difficult, +1 =easy, +2 =very easy). They also estimated the time that the whole measurement process took.

Results

All ten emergency physicians assessed that feasibility of Albio™ is very easy (+2). Mean time for the whole measurement procedure was 1 minute and 18 seconds.

Conclusions

Fast, easy and reliable ethanol test for all patient groups is essential when making life-saving decisions on treatment and medications in different operational environments. In our small feasibility survey, all emergency physicians evaluated Albio™ as very easy and fast to use. In the future, we presume that point-of-care ethanol test will be part of the evaluation of critically ill patients in hospitals and field work. More studies are needed for usability of Albio™ in field circumstances and in emergency departments.

#18998 : An artificial air pocket device prolongs survival and can allow intervention of emergency care providers in completely buried avalanche victims – an experimental, randomized crossover trial

Authors:

Federico Prato (1), Sandro Malacrida (2), Enrica Governo (3), Thomas Dal Cappello (2), Simon Rauch (2), Margherita Urgesi (2), Simona Mrakic-Sposta (4), Alessandra Vezzoli (4), Marika Falla (2), Alberto Cabarle (5), Martin Palma (2), Luca Cavoretto (3), Enrico Visetti (6), Guido Giardini (3), Hermann Brugger (2), Giacomo Strapazon (2)

1. Anesthesia and Intensive Care Unit, ASL BI, Biella, ITALY
2. Institute of Mountain Emergency Medicine, EuracResearch, Bolzano, ITALY
3. Mountain Medicine Center, AUSL VDA, Aosta, ITALY
4. Institute of Molecular Bioimaging and Physiology, National Research Council, Milano, ITALY
5. Corpo Nazionale Soccorso Alpino e Speleologico, CNSAS, Biella, ITALY
6. Department of Anesthesia and Intensive Care, Gruppo Policlinico di Monza, Monza, ITALY

Keywords: Avalanche, artificial air pocket device, survival

Abstract :

Background: Most of completely buried avalanche victims die within 35 min, generally due to acute asphyxiation; time, airway patency and air pocket size are important factors for survival of the victims (i.e., development of hypoxia and hypercapnia). The use of an artificial air pocket device (AAPD) that helps to separate inspired air from exhaled one under the snow, could prolong survival of completely buried avalanche victims and allows intervention of emergency care providers, as shown in sitting participants buried into the snow.

Objective: The aim of the study was to evaluate the influence of AAPD on the development of hypoxia and hypercapnia in supine completely buried and breathing participants into a closed artificial air pocket.

Methods: In this experimental, randomized crossover trial, thirteen healthy participants were fitted with a backpack and placed in supine position in a snow trench buried in avalanche debris. Each of the thirteen participants carried out two tests, one breathing into a 1 L artificial air pocket connected to the backpack and one breathing in an AAPD integrated in a backpack (Ferrino Airsafe®). Participants were buried in 30-50 cm of avalanche debris with continuous monitoring of vital signs including peripheral oxygen saturation (SpO₂) and end-tidal CO₂ (EtCO₂). O₂ and CO₂ concentration in the artificial air pocket or in the AAPD were continuously monitored. Criteria for test interruption were: SpO₂<84%, maximum test duration of 60 minutes or subject's request.

Results: For the event SpO₂<84%, the survival curves showed a difference between the test in the artificial air pocket and the test in the AAPD (log-rank test, p<0.05). All the 10 participants who interrupted for SpO₂<84% in the artificial air pocket increased the test duration with the AAPD (Wilcoxon signed-rank test, p<0.05). Despite the longer duration of the tests with the AAPD, the delta (difference between end and beginning of the test) of O₂ and CO₂ concentration did not differ when compared to the artificial air pocket (Wilcoxon signed-rank test, p≥0.05).

Conclusions: Breathing within an AAPD could allow adequate oxygenation for longer time in completely buried avalanche victims and extend the time for intervention of emergency care providers.

#18999 : PERCEPTION AND MANAGEMENT OF PAIN BY HEALTH PROFESSIONALS IN AN EMERGENCY SERVICE

Authors:

María Cuenca (1), Bernia Andres (2), Luis Manclus (3), Immaculada Tormos (3), Pedro Garcia (3), Jose Luis Ruiz (3), Luisa Tarraso (3)

1. Research department, Hospital Universitario de La Ribera, Alzira, SPAIN

2. , Universidad Católica de Valencia, Alzira, SPAIN

3. Emergency department, Hospital Universitario de La Ribera, Alzira, SPAIN

Keywords: PAIN, EMERGENCY

Abstract :

Introduction: Pain is one of the main reasons for consultation in the Emergency Department, reaching 42.8% of patients who require medical assistance.

Objective: To evaluate the perception and management of pain by healthcare professionals in the Emergency Department of the "Hospital Universitario de La Ribera" (Valencia-Spain)

Methodology: A descriptive, prospective and analytical observational study was performed. Data collection was carried out by means of a survey in which respondents were asked about the transmission of information to the patient on aspects related to pain, systems used to categorize pain, knowledge of protocols and their use in fixed and rescue guidelines, their registration, the system used for their evaluation in the patient, the need to prevent pain, the adequacy of pain treatment in the service and the possibility of improving its approach.

A univariate descriptive analysis and an analytical study were carried out in order to explore whether the professional category influenced the perception and management of pain.

Results: 74.25% of the service workers, mostly women, with an average age of 37.013 ± 10.85 years, were interviewed. The most representative group was nurses (52%). The transmission of information to the patient on aspects related to pain refers to being carried out mainly in a non-written form (always 16%, almost always 38.67% and sometimes 28%). The EVA and EVN scales were the most used to categorize pain in the communicative patient (52% and 41.3% respectively). 53.33% of the participants did not use any method to categorize pain in the non-communicative patient. 61.33% know pain control protocols and use them in both fixed and rescue guidelines. Pain is assessed more frequently by asking the patient than by physiological records. 57.3% consider that pain management in the unit is almost always adequate and 44% think it can always be improved.

Analysis by professional categories showed significant differences in the variables need to promote and prevent pain ($p=0.048$) (higher in the physicians and lower in the auxiliaries), a system used to categorize pain in the communicative patient ($p=0,001$) (doctors indicated the EVA scale and nurses the EVN scale), pain recording frequency ($p=0.016$) (nurses refer to always recording pain and doctors some or few times) and pain evaluation frequency asking the patient ($p=0.04$) (much higher in nursing assistants and lower in doctors).

Conclusions:

In the Emergency Department of the "Hospital Universitario de la Ribera" pain assessment and treatment should be improved in order to unify criteria among professional groups and establish a systematic way of dealing with pain according to the type, severity and characteristics of the patient, implementing and using protocols to improve the approach to pain in patients.

#19000 : Red cell distribution width in the acute mesenteric ischemia

Authors:

Mahboub Pouraghaei (1), Payman Moharamzadeh (1), Kavous Shahsavari Nia (1), Ali Taghizadieh (2), Ramin Majlesi (3)

1. Emergency medicine research team, Tabriz University Of Medical Sciences, Tabriz, IRAN, ISLAMIC REPUBLIC
2. , Tabriz University Of Medical Sciences, Tabriz, IRAN, ISLAMIC REPUBLIC
3. , Majlesi Health Institute, Tabriz, IRAN, ISLAMIC REPUBLIC

Keywords: Acute Mesenteric Ischemia, RDW, Intestinal Gangrene, Laparotomy

Abstract :

Acute mesenteric ischemia is one of the most important reasons for referral of patients with abdominal pain to the emergency department,

leads to immediate intestinal damage. High clinical suspicion for immediate diagnosis and treatment of this life-threatening illness is very important in ED.

In this study, all patients over the age of 18 with acute abdominal pain with one or more risk factors for acute mesenteric ischemia who did not have exclusion criteria and were candidates for abdominal CT scans or abdominal CT angiography or emergency laparotomy have been studied. All history findings, risk factors, WBC, RDW, serum bicarbonate and radiological findings from abdominal and pelvic CT scans with intravenous contrast with laparotomy results and surgical findings were evaluated and analyzed.

This study showed that there was a significant difference between the final and primary RDW in the patients with mesenteric ischemia, patients with gangrene and gangrene in the narrow or large intestine, and in patients with peritonitis without ischemic evidence during laparotomy. This result suggests that, in both of mesenteric ischemic patients group and controlled group (patients with acute abdomen without mesenteric ischemia)

, RDW increases with time and disease

progression, which is due to pathophysiologic reasons of RDW, can be guessed and predictable. RDW is not a good indicator of the causes of acute abdomen, but it also has a high predictive value in the mortality of patients with mesenteric ischemia.

#19001 : Application Medical Team Resource Management strategy to improve the rescue time of patients with ischemic stroke

Authors:

SHYH MIN LIN (1), WAN LING CHANG (2)

1. Radiology Technology Section Leader, Cardinal Tien Hospital An Kang District, NEW TAIPEI CITY, TAIWAN
2. Intensive Care Unit Head Nurse, Fu Jen Catholic University Hospital, NEW TAIPEI CITY, TAIWAN

Keywords: Team Resource Management, Emergency Medical Services, stroke, rt-PA <60 minutes

Abstract :

Background: According to the statistics of the Ministry of Health and Welfare of Taiwan, cerebrovascular accidents are the third leading cause of death among Chinese people in 2017. The computerized tomography of the Department of Radiology is the priority screening diagnostic tool for patients with suspected acute stroke, so the standardized path is The implementation of improvement measures such as benchmark cross-disciplinary teamwork, shortening the timeliness of treatment, and improving the proportion of rt-PA

Objective: The acute stroke rescue team is mainly composed of EMS (Emergency Medical Services), emergency department, laboratory, radiology department, and neurologists, so that each link can be interlocked to achieve the rescue within 60 minutes of gold. Timeliness, which in turn improves overall medical quality, shortens disposal time, and completes various treatments within the NINDS (National Institute of Neurological Disorders and Stroke) time standard, and immediately applies rt-PA.

Methodology: The emergency department doctor suspected a stroke case, immediately contacted the Department of Radiology and used the slogan "Suspected Stroke Patients" to quickly start the radiologist in place, complete the computerized tomography case and quickly provide images for collection in January 2016. From the beginning of the 1st to the 31st of December 2016, acute stroke cases, time spent in the treatment and treatment during the emergency department, analysis and formulation of the process, equipment, inspectors and other reasons. The cause is divided into three major facets, namely, insufficient knowledge, inconvenient equipment and no process, and improvement according to the three major facets. The knowledge level arranges acute stroke care, classification of injuries and NIHSS (National Institute of Health Stroke). Scale evaluates on-the-job education; standardizes the development of suspected stroke surgery procedures, develops and conducts inspections, rapid inspection of specimens, establishes a warning system for stroke patients, and develops a mechanism for starting strokes.

Results: The NINDS (National Institute of Neurological Disorders and Stroke) achieved an increase from 35% to 42%; the rt-PA rate increased from 75% to 100%.

Trial Registration / Funding Information (only) :

no

#19002 : Hand Hygiene Adherence of ED Physicians in Hamad General Hospital and its Importance in the Prevention of Healthcare-Associated Infection (HCAI) In Quality Patient Care and Safety**Authors:**

Elenor Canlas (1), Ma.Lueda Baldia-Torres (1), Carren Ybanez (1), Mark Bryan Banzon (1)

1. , Hamad Medical Corporation, doha, QATAR

Keywords: Hand Hygiene, Healthcare-Associated Infections, Quality Patient Care and Safety

Abstract :

Health-care associated infections (HCAI) has been noticeably increasing over the past few years. This has led the World Health Organization (WHO) to adapt the WHO Guidelines on Hand Hygiene in Health Care to address this problem. One of the many challenges is the importance of hand hygiene compliance, especially among Emergency Department Physicians who are mostly working at the frontline and are continuously in contact with the patients. Hand hygiene is a simple procedure and the project aims to increase awareness and improve the adherence to the practice of handwashing or use of hand rub in order to reduce the cases of health-care associated infections. This is a descriptive study using a non-biased survey method of data collection. It includes all ED Physicians assigned in Hamad General Hospital - Emergency Department. A survey was launched prior to the Hand Hygiene Adherence Campaign in order to gauge the ED Physicians' knowledge and skills about hand hygiene in their practice. After which, data were gathered using the WHO Hand Hygiene Compliance tool and collected by direct observation after the campaign. The post intervention data were compared with the hand hygiene adherence data gathered by the Quality Management Reviewer and Infection Control Practitioner in HGH ED in order to check for improvement on hand hygiene adherence of EM physicians during point of care. The survey that was conducted showed 94% of ED Physicians were aware of the indications of hand hygiene but only 61% have formal hand hygiene training. The use of alcohol base hand rub was preferred by most ED physicians (73%) since this method is more efficient to do compared to hand washing technique in relation to accessibility during point of care. The rigid Hand Hygiene Adherence Campaign which was conducted for the month of March, April, May 2018 has promoted the level of compliance among ED Physicians. Three months after the first monitoring, continuous campaign and observation were done and it showed sustainability of the ED Physician's adherence to hand hygiene at the point of care. Recommendations to continuously keep physicians aware about the benefits of proper hand hygiene in reducing health care associated infection has to be one of the main priority in any healthcare facility.

#19005 : NONURGENT PATIENTS in the EMERGENCY DEPARTMENT. What is happening?**Authors:**

Ruian Raluca (1), Moga Elisabeta (2), Sântimbreanu George-Mircea (3), Ganea Ramona (4), Boldis Alexandra (5), Ivan Sergiu (6), Nitescu Cristian (7)

1. student at Faculty of Medicine, volunteer at Emergency Department , Blaj, ROMANIA
2. Medical Assistant, Emergency Department, Blaj, ROMANIA
3. MD, Emergency Physician, Emergency Department, Blaj, ROMANIA
4. Faculty of Medicine, volunteer at Emergency Department, Blaj, ROMANIA
5. MD, Anesthesia and Intensive Care Physician, Blaj, Blaj, ROMANIA
6. student at Faculty of Medicine, volunteer at Emergency Department, Blaj, ROMANIA
7. Medical Asistant , Emergency Department, Blaj, ROMANIA

Keywords: Emergency Room, nonurgent patients, health system, retrospective study

Abstract :

Background:

In the last decades, overcrowding in emergency departments has become a main problem in several developed countries. The increased number of nonurgent patients in the EDs is nowadays a significant concern that requires preventive strategies.

This study intends to trace all the presented cases from Emergency Reception Compartment of Muncipal Hospital Blaj, over a 16 months period, revealing the problem of nonurgent visits.

Materials and methods:

The clinical statistic study is a retrospective epidemiological one, developed between 01.01.2018 – 30.04.2019, on a number of 19510 cases presented at Emergency Reception Compartment Blaj, clinical survey files having been analyzed.

Results:

The annual distribution of the cases is: in 2018 – 13010 presented cases (66,68%), in 2019– 6500 presented cases (33,32%). The average on a day is about 53 cases (0,27%).

Another major issue was the distribution of insured/uninsured patients. Data centralization revealed: 15608 cases of insured (80%) and 3902 cases of uninsured patients (20%).

Within previously mentioned time interval, from a total record of 19510 presented and diagnosed cases, 4491 patients were brought with the ambulance (23,01%), 344 patients were sent to a regional medical center (1,7%), 3717 have remained in the hospital (19,05%) and 10958 patients left the hospital after the clinical exam.(56,16%).

The study of presented cases distribution according to patients' social environment has highlighted the following data: 11472 patients(58,8%) were from urban environment and 8038 from country environment, (41,2%).

Another followed out aspect, was presented cases distribution on ages. Data centralization has shown up: 3370 patients of less than 18 years old (17,27%) and 16140 patients of more than 18 years old (82,72%).

During the studied time interval, the patients were screened according to the 5 color codes. So, they were 390 patients (25%) with red code, 3512 patients with yellow code (18%), 9560 patients with green code (49%), 5267 patients with blue code (27%) and with white code -781 patients (4%).

As regards codes distribution, it has been ascertained that 13461 (69%) patients needed medical specialized treatment and 6049 patients (31%) were successfully treated by the ED doctor

Regarding the time spent in the waiting room, data centralization has shown up the following situation: 390 patients were spending between 0-5 minutes, 13 072 patients between 15-60 minutes and 6048 patients between 120-240 minutes.

Conclusions:

The number of nonurgent visits is increasing based on the fact that more than 10000 patients left the hospital after the medical exam in the ED.

The statistic appearance based on social environment distribution prompts a higher frequency within urban environment.

Nonurgent visits occurrence might not be linked with the age.

Our study developed the increased incidence of patients cataloged with blue and white code and also showed up in the time that a nonurgent

patient has to wait.

This present study highlighted discrepancies between urgent and nonurgent visits at the ED. Understanding this problem is crucial, as it is the main determining factor in the utilization of health care resources, and provides promising insights into the phenomenon of ED usage increase.

#19006 : Critical trauma patients in republic of moldova

Authors:

Mihail Pestereanu (1), Boris Golovin (2), Natalia Catanoi (3), Tatiana Bicic (4)

1. Research and Implementation, National Centre of Prehospital Emergency Medicine, Chisinau, MOLDOVA, REPUBLIC OF
2. Director, National Centre of Prehospital Emergency Medicine, Chisinau, MOLDOVA, REPUBLIC OF
3. Medical Expert, Research and Implementation, National Centre of Prehospital Emergency Medicine, Chisinau, MOLDOVA, REPUBLIC OF
4. Deputy Medical Director, National Centre of Prehospital Emergency Medicine, Chisinau, MOLDOVA, REPUBLIC OF

Keywords: Polytrauma, Patients, Prehospital, Emergency, Therapy

Abstract :**Critical trauma patients in republic of moldova**

Mihail Pestereanu¹, Boris Golovin¹, Natalia Catanoi^{1,2}, Tatiana Bicic¹

¹*National Centre of Prehospital Emergency Medicine, Chisinau, Republic of Moldova*

²*Nicolae Testemitanu State University of Medicine and Pharmacy, Emergency Medicine, Chisinau, Republic of Moldova*

Introduction:

Trauma is a leading cause of death and disability worldwide and the number one cause of death for people aged 1 to 44. Approximately half of the deaths due to trauma occur on the scene, or before the patients reach the hospital. Another 30% of deaths occur in the first minute and make the difference between life and death. The objectives of the initial evaluation of the trauma patient are to stabilize patient, to identify life-threatening injuries and to initiate adequate supportive therapy, also to efficiently and rapidly organize the definitive therapy or transfer to a facility that provides definitive therapy. In Republic of Moldova, the incidence of trauma was 454.7 to 10 000 population in 2016 and 485.3 to 10 000 in 2017.

Materials and methods:

We studied retrospectively a group of 400 patients who suffered multiple trauma and who were treated at the pre-hospital stage by the emergency teams in 2018. The study included information about age, sex, education of the patients, the etiology of polytrauma and the treatment according to protocol.

Results:

The studied patients were between 18 and 80 years, a higher prevalence of those with ages between 31-40 years (28.25%), (the average age being 35.3 ± 1.6 years). More than half (61.5%) of the affected patients are under the age of 40 years. Regarding the gender distribution of the patients, men, with 74.25% compared to women with 25.75%, were at a greater risk of being subjected to trauma with a ratio of 3: 1. The results of our research have shown that from the total patients included in the study, only 15.75% was from rural areas and 84.25% from urban areas. The analysis of the studied patients shows that only 5.5% of patients have higher education, 34.0% have secondary education, 42.0% incomplete secondary education, 13.25% professional school and 5.25% are without any education. Depending on the mechanism leading to the occurrence of trauma, road accidents was 49.0%, after follow habitual trauma with 19.5%, industrial and agricultural trauma - 9.0%, traumatized by the aggression - 8.25%, and sports - 5.25%. Regarding the treatment, 86.3% of patients with polytrauma received emergency medical aid according to protocol and the rest of them received the incomplete one.

Conclusions:

Trauma is a public health problem in Republic of Moldova. More than half of the traumatized patients are under the age of 40 years with a higher prevalence between 31 – 40 years. Men / women ratio was 3:1. From urban areas was 84.25% patients. On the first place was road trauma. The complete emergency medical care according to protocol received 86.3% of patients with polytrauma. Emergency medical assistance at the pre-hospital stage for these patients should be quick to follow proper protocol nationwide.

Keywords: Polytrauma, Patients, Prehospital, Emergency, Therapy.

#19007 : In pursuit of the most efficient technique of improving feedback skills among emergency medicine residents- a randomized controlled trial**Authors:**

Khalid Bashir (1), Amr Mohammed Abdallah Elmoheen (2), Mohamed Ahmed Seif Mohamed (2), Saleem Farook (1), Shahzad Anjum (2), Kodumayil Ashid (1), Kumar Thirmoorthy Samy Suresh (1), Thomas Prof. Stephen (1)

1. , Hamad Medical Corporation, Doha, QATAR
2. Emergency Medicine, Hamad Medical Corporation, Doha, QATAR

Keywords: emergency medicine, feedback, core skill, randomised controlled trial,

Abstract :

Background: A good feedback should have certain attributes, as cited extensively in the literature. Appropriate and timely feedback is crucial in improving the clinical practice of the residents. In spite of its importance, the residents regularly express their displeasure with the quality of feedback. One of the important barriers to constructive feedback is a lack of appropriate training and skill of giving feedback. Accreditation Council of Graduate Medical Education has recommended feedback as a core skill for Emergency Medicine Residents (EMR).

Aim/Objectives: The primary aim of the study was to find the most efficient technique of teaching the skills of feedback to EMR. The secondary aim was to gauge their preferred educational technique.

Method: This was a prospective mixed method study that included 45 EMR in the current training program. A computer-generated block randomization with concealed and opaque envelopes. All residents were randomized to group A, B and C. Group A received no prior training, Group B read a brief document about the attributes of a good feedback and group C received one to one tutoring from one experienced faculty about the attributes of a good feedback. A brief 4 minute- teaching video on Rapid sequence intubation (RSI) was prepared by the teaching faculty which was assessed by two senior faculty and approved for this trial. Each resident was asked to watch the video and provide feedback on the skills of the physician performing RSI. An assessment form based on good feedback attributes cited in the literature was created and validated. The feedback techniques of EMR were audio recorded and assessed by two senior faculty blinded to the study. The study was approved by institutional research council and exempted from ethics review. The EMR preference for their preferred educational technique was obtained through a semi structured interview from a group of 7 volunteers.

Results: The baseline characteristics of the three groups were similar. With Group A set as the baseline, as compared to that baseline Group A score Group B subjects' total score was 1.3 points higher (95% CI 0.3 to 2.3, $p = .014$) and Group C subjects' total score was 2.7 points higher (95% CI 1.7 to 3.7, $p < .001$). (Overlapping 95% CIs between Group B and Group C suggested there was no statistically significant difference between those two groups' total scores). The residents favored self-reading and 1:1 tutoring equally.

Discussion: Learning a feedback skill is essential during EMR program. This skill can be acquired through either self-reading an appropriately written document or 1-1 teaching by appropriately trained faculty. The study may also have implications on the utilization of faculty time for teaching core skills to EMR.

Conclusion: Compared to Group A, Groups B and C scored significantly higher on the overall assessment and statistically similarly to each other. There was no sign of association between either sex or PGY year or total score. EMR preference for feedback technique was equally distributed between self-reading and 1:1 tutoring.

Trial Registration / Funding Information (only) :

Funded by MRC of Hamad Medical Corporation

#19008 : Interaction effect between mechanical chest compression device use and post cardiac arrest care on survival outcomes after out-of-hospital cardiac arrest**Authors:**

eujene jung (1)

1. , w, gwangju, KOREA

Abstract :

Objective: The aim of our study was to compare the performance of a mechanical chest compression device (meCC-device) and that of manual chest compression during transport after out-of-hospital cardiac arrest (OHCA) in Korea from 2014 through 2016.

Methods: This study used data from the national cardiac arrest registry of patients with OHCA of presumed cardiac etiology. The primary exposure was use of a meCC-device by an emergency medical service (EMS) provider while transporting a patient with OHCA to the emergency department. The primary end point was good cerebral performance category (CPC 1 and 2) at discharge. We compared survival and neurological outcomes between the meCC-device group and manual chest compression group. We additionally conducted a before-and-after analysis to assess changes in study outcomes after implementation of the meCC-device by each ambulance stations.

Results: Among 48,080 patients following OHCA with presumed cardiac etiology, a meCC-device was used in 1.6% (755) of patients. After adjusting for possible confounders, patients who were treated with a meCC-device had no significant differences compared with those who received manual chest compression, with respect to good neurological recovery (adjusted odds ratio (AOR) 1.06, (95% confidence interval (CI) 0.59-1.92) and survival to discharge (AOR 1.18, (95% CI 0.81-1.72)). In subgroup analysis, there was no difference in study outcomes

Conclusions: The meCC-device, which continuously maintains the chest compression rate and depth, did not show better study outcomes in this study. It is necessary to overcome weak aspects of meCC-device use by training EMS providers.

#19010 : Interaction effect between mechanical chest compression device use and post cardiac arrest care on survival outcomes after out-of-hospital cardiac arrest.**Authors:**

Kyuchul Choi (1), eujene jung (2)

1. , w, Gwangju, KOREA

2. , w, gwangju, KOREA

Abstract :

Backgrounds: The characteristics of OHCA patients are very diverse, and the potential benefits and risks of PCA care may not be the same among subgroups. We hypothesized that there were some interactive effect of PCA care on survival and neurological outcome after OHCA was observed across patients depending on the use of mech-device. This study aimed to investigate whether use of mech-device has any impact on the neurological outcomes of PCA care.

Methods: This study is a cross-sectional study using a nation-wide registry database of OHCA in Korea. The OHCA registry began in 2006 in collaboration with the Korea Centers for Disease Control and Prevention (CDC) and the National Emergency Management Agency (NEMA) of the Republic of Korea government to improve the outcome of cardiovascular disease in Korea.

The data were extracted between January 2016 and December 2017. The inclusion criteria were all OHCA adults who are older than 18 years with presumed cardiac etiology and survived to admission. Patients were excluded who achieved return of spontaneous circulation (ROSC) at the scene, those with cardiac arrest that occurred in the ambulance, and patients with missing information on neurological status at hospital discharge. The primary outcome was favorable neurological recovery at hospital discharge, defined as a cerebral performance category (CPC) of 1 or 2, [14] and the secondary outcome was survival to discharge.

Results:

After adjusting for other covariates in the interaction model, the aOR of TTM and CRT for survival to discharge was no different in patients with use of mech-device (aOR 2.28, 95% CIs 0.81-6.45, aOR 3.76, 95% CIs 1.44-9.80), respectively) and patients without use of mech-device (aOR 1.08, 95% CIs 0.76-1.54), aOR 8.02, 95% CIs 6.09-10.57), respectively). For good neurological recovery, the aOR (95% CIs) of TTM and CRT were 2.41 (1.90-3.06) and 3.40 (2.79-4.14) in patients without use of mech-device whereas the effect was statistically non-significant in patients with use of mech-device with aOR (95% CIs) of 1.89 (0.97-3.68) and 1.54 (0.79-3.01) (Table 5).

Conclusions:

Use of mech-device modified the effect of PCA care on neurological outcomes for OHCA patients. PCA care is significantly associated with good neurological recovery in non-mech-device group, but not in mech-device group in Korea.

#19011 : Risk of Hypertension on Incidence of Out-of-Hospital Cardiac arrest: A case Control study**Authors:**

yongsoo Cho (1), Sangwook Park (1), hyunho ryu (2)

1. , w, Gwangju, KOREA

2. , w, gwangju, KOREA

Abstract :

Background

This study aimed to determine the risk of hypertension (HTN) on incidence of out-of-hospital cardiac arrest (OHCA) and to investigate whether difference in effects of HTN between therapeutic methods was observed.

Methods

This study was a case-control study using the Cardiac Arrest Pursuit Trial with Unique Registration and Epidemiologic Surveillance (CAPTURES) project database and 2013 Korean Community Health Survey (CHS). Cases were defined as EMS-treated adult (18 year old and older) OHCA patients with presumed cardiac etiology collected at 27 emergency departments from January to December 2014. OHCA patients whose arrest occurred at nursing homes or clinics and cases with unknown information on HTN were excluded. Four controls were matched to one case with strata including age, gender, and county from the

Korean CHS database. Multivariable conditional logistic regression analysis was conducted to estimate the risk of HTN and treatment modality on incidence of OHCA.

Results

Total 1,386 OHCA patients and 5,544 community-based controls were analyzed. A total of

370 (26.7%) among cases and 860 (15.5%) among controls were diagnosed with HTN. HTN was associated with increasing risk of OHCA (AOR: 1.92 (1.65–2.24)). By HTN treatment modality comparing with non-HTN group, AOR (95% CI) was the highest in non-pharmacotherapy only group (4.65 (2.00–10.84)), followed by no treatment group (4.17 (2.91–5.96))

Conclusion

HTN decreased the risk of OHCA, which was the highest in the non-pharmacotherapy group and decreased in magnitude with pharmacotherapy.

#19012 : Coronary angiography is related to improved clinical outcome of out-of-hospital cardiac arrest with initial non-shockable rhythm**Authors:**

dongseop Kim (1), Sangwook Park (1)

1. , w, Gwangju, KOREA

Abstract :**Objective**

Coronary angiography (CAG) for survivors of out-of-hospital cardiac arrest (OHCA) enables early identification of coronary artery disease and revascularization, which might improve clinical outcome. However, little is known for the role of CAG in patients with initial nonshockable cardiac rhythm.

Methods

We investigated clinical outcomes of successfully resuscitated 670 adult OHCA patients who were transferred to 27 hospitals in Cardiac Arrest Pursuit Trial with Unique Registration and Epidemiologic Surveillance (CAPTURES), a Korean nationwide multicenter registry. The primary outcome was 30-day survival with good neurological outcome. Propensity score matching and inverse probability of treatment weighting analyses were performed to account for indication bias.

Results

A total of 401 (60%) patients showed initial non-shockable rhythm. CAG was performed only in 13% of patients with non-shockable rhythm (53 out of 401 patients), whereas more than half of patients with shockable rhythm (149 out of 269 patients, 55%). Clinical outcome of patients who underwent CAG was superior to patients without CAG in both non-shockable (hazard ratio (HR) = 3.6, 95% confidence interval (CI) = 2.5 ± 5.2) and shockable rhythm (HR = 3.7, 95% CI = 2.5 ± 5.4, $p < 0.001$, all). Further analysis after propensity score matching or inverse probability of treatment weighting showed consistent findings (HR ranged from 2.0 to 3.2, $p < 0.001$, all).

Conclusions

Performing CAG was related to better survival with good neurological outcome of OHCA patients with initial non-shockable rhythms as well as shockable rhythms.

#19013 : The Emergency Medicine Early Warning System (EMEWS) – a tool to assist in the detection of patient deterioration**Authors:**

Fiona McDaid (1), Fergal Hickey (2)

1. Health Service Executive, National Clinical Programme for Emergency Medicine, Dublin, IRELAND
2. Consultant in Emergency Medicine, Health Service Executive, Sligo, IRELAND

Keywords: Emergency Department, Patient deterioration, Early warning system

Abstract :

Globally, increasing attendances at Emergency Departments (EDs) exit block has caused worsening delays for patients to be seen by clinicians. These delays cause additional risk for patients; the risk of deterioration following triage but before being seen by a clinician. In an attempt to lessen this risk, Ireland has developed the Emergency Medicine Early Warning System (EMEWS) to improve the safety of patients where the number of patients waiting to be seen exceeds the EDs' capacity to see them within standard timeframes.

EMEWS was developed by the National Emergency Medicine Programme (EMP) in conjunction with the Irish Department of Health. The development of the Guideline was informed by a systematic review and the advice of a Guideline Development Group. EMEWS was launched as a National Clinical Guideline in October 2018 by the Minister for Health and mandates that EMEWS is used in all EDs to aid the recognition of and response to the deteriorating patient.

How does it work?

Following prioritisation using the Manchester Triage System (MTS), all adult patients (aged 16 years and over) are considered for inclusion on EMEWS. The triage category indicates the frequency of nursing review they should receive from the time of triage until they leave the ED to be discharged home or the decision to admit.

As their care needs are different patients prioritised as MTS Category 1 or Category 5 are excluded. Patients prioritised as MTS Category 3 or Category 4 who present with isolated non-life or limb-threatening injury and who require no more than over-the-counter analgesia are also excluded. This enables appropriate concentration of resources on the care of patients who are the most acutely ill and most likely to experience physiological deterioration.

The introduction of EMEWS generated "new work", primarily for nursing staff, due to the introduction of a formal mechanism for the re-assessment of patients in the waiting area. The nursing and medical resources required to implement EMEWS are determined locally based on patterns of attendance and patient flow using the Emergency Department Nursing workforce Planning Framework (2016) until the findings of the Department of Health Taskforce on Staffing and Skill Mix for Nursing - Phase II - Emergency Care Settings are released in late 2019.

Trial Registration / Funding Information (only) :

N/A

#19014 : The Effect of Emergency Department crowding on analgesis in patients with back pain**Authors:**

eujene jung (1), hyunho ryu (1)

1. , w, gwangju, KOREA

Abstract :

Objectives: The authors assessed the association between measures of emergency department (ED) crowding and treatment with analgesia and delays to analgesia in ED patients with back pain.

Methods: This was a retrospective cohort study of nonpregnant patients who presented to two EDs (an academic ED and a community ED in the same health system) from Jan 1, 2015, to Dec.31, 2017, with a chief complaint of "back pain." Each patient had four validated crowding measures assigned at triage. Main outcomes were the use of analgesia and delays in time to receiving analgesia. Delays were defined as greater than 1 hour to receive any analgesia from the triage time and from the room placement time. The Cochran-Armitage test for trend, the Cuzick test for trend, and relative risk (RR) regression were used to test the effects of crowding on outcomes.

Results: A total of 10,342 patients with back pain presented to the two EDs over the study period (mean \pm SD age = 47 ± 12 years, 54% female). Of those, 7,425 (79%) received any analgesia while in the ED. A total of 6,589 (81%) experienced a delay greater than 1 hour from triage to analgesia, and 2,985 (67%) experienced a delay more than 1 hour from room placement to analgesia. When hospitals were analyzed separately, a higher proportion of patients experienced delays at the academic site compared with the community site for triage to analgesia (77% vs. 54%) and room to analgesia (61% vs. 53%; both $p < 0.001$). All ED crowding measures were associated with a higher likelihood for delays in both outcomes. At the academic site, patients were more likely to receive analgesia at the highest waiting room numbers. There were no other differences in ED crowding and likelihood of receiving medications in the ED at the two sites. These associations persisted in the adjusted analysis after controlling for potential confounders of analgesia administration.

Conclusions: As ED crowding increases, there is a higher likelihood of delays in administration of pain medication in patients with back pain. Analgesia administration was not related to three measures of ED crowding; however, patients were actually more likely to receive analgesics when the waiting room was at peak levels in the academic ED.

#19015 : Survival outcomes following witnessed out-of-hospital cardiac arrests during nights and weekends □

Authors:

eujene jung (1), Kyuchul Choi (2)

1. , w, gwangju, KOREA

2. , w, Gwangju, KOREA

Abstract :

Background: The relationship between survival rate following out-of-hospital cardiac arrests (OHCA) and time of day or day of week is unknown.

Methods: A nationwide, prospective, population-based observational investigation of consecutive witnessed OHCA (

Results: A total of 3278 bystander-witnessed pediatric OHCA were registered. One month survival rate was significantly lower during nights than days (15.5% [95% CI: 13.8–17.2%] versus 23.3% [95% CI: 21.1–25.6%]; $P < 0.001$) and during weekends/holidays (15.7% [95% CI: 13.6–18.0%] than weekdays (20.4% [95% CI: 18.7–22.2%]; $P = 0.001$). Survival rate with favorable neurologic outcome was substantially lower during nights (7.5% [95% CI: 6.3–8.8%] than days (12.2% [95% CI: 10.6–14.1%]; $P < 0.001$), and during weekends/holidays (7.7% [95% CI: 6.2–9.5%] than weekdays (10.4% [95% CI: 9.2–11.8%]; $P = 0.012$). After adjusting for potential confounding factors, one-month survival rate remained significantly lower during nights compared to days (odds ratio 0.68; 95% CI: 0.56–0.82), and during weekends/holidays compared to weekdays (odds ratio 0.79; 95% CI, 0.65–0.97).

Conclusions: One-month survival rate following bystander-witnessed OHCA was lower during nights and weekends/holidays than days and weekdays, even when adjusted for potentially confounding factors

#19016 : Bacteraemia in patients with accidental hypothermia: a retrospective cohort study**Authors:**

Mayu Kuribayashi (1), Yoshinori Matsuoka (1), Koichi Ariyoshi (1)

1. Emergency Department, Kobe City Medical Center General Hospital, Kobe, JAPAN

Keywords: accidental hypothermia, bacteraemia, sepsis

Abstract :

Background

Accidental hypothermia is not only caused by environmental exposure but also by various medical conditions, including sepsis, endocrinologic disease, and multiple trauma. Bacteraemia in accidental hypothermia is considered to be associated with significant morbidity and mortality, but little is known about bacteraemia in patients with accidental hypothermia. We aimed to investigate the clinical characteristics of patients with both accidental hypothermia and bacteraemia.

Methods

We conducted a retrospective analysis of all adult patients with accidental hypothermia who were brought to an urban emergency department between July 2011 and March 2019 in Kobe, Japan. Hypothermia was defined as a body temperature below 35° C. We compared clinical characteristics (vital signs, comorbidities, and laboratory tests) between patients with and without bacteraemia. To assess whether bacteraemia was associated with in-hospital mortality, we analysed odds ratios using a logistic regression model. Based on biological plausibility and pre-existing knowledge, we selected the following confounding factors: age, sex, severity (the Swiss system), and Charlson comorbidity index.

Result

A total of 245 patients with accidental hypothermia were enrolled. Median age was 78 (interquartile range, 68 to 87) years, and 49% of patients were male. In the emergency department, blood culture samples were collected from 217 patients (89%); of these, 36 patients (16.6%) showed positive blood cultures. None of the patients for whom blood culture was not performed in the emergency department were diagnosed with bacteraemia after admission. Body temperatures were lower (28.9 vs 30.1° C, $p=0.009$) and C-reactive protein levels were higher (9.99 vs 3.76 mg/dL, $p<0.001$) in patients with bacteraemia than in those without bacteraemia. Other clinical characteristics were not different between the two groups. The mortality was 11/36 (31%) in patients with bacteraemia and 29/209 (14%) in patients without bacteraemia (adjusted odds ratio, 2.47 [95% confidence interval, 1.04–5.88]).

Discussion and conclusion

Our study demonstrated that bacteraemia was common in patients with accidental hypothermia and was a prognostic factor, even after adjusting for confounding factors. Furthermore, except for body temperature and one inflammatory marker, other clinical characteristics did not differ between patients with and without bacteraemia. High mortality has been reported in accidental hypothermia patients with bacteraemia, but limited information was available for correctly suspecting bacteraemia in the emergency department. Our results were clinically acceptable and also consistent with a multi-centre study that demonstrated that hypothermia was associated with higher mortality in sepsis patients. Although several previous studies have focused on the association between mortality and hypothermia from the standpoint of treating sepsis patients, we evaluated all patients who presented with accidental hypothermia. Therefore, the present study emphasizes the importance of suspecting bacteraemia in patients with accidental hypothermia who do not show signs of sepsis. In conclusion, our study found that bacteraemia was common in patients with accidental hypothermia and was associated with higher mortality. Based on these findings, we recommend that we take blood culture routinely and consider empirical antibiotic treatment in patients with accidental hypothermia.

Trial Registration / Funding Information (only) :

none

#19018 : Readmission of elderly medical patients after short term acute admissions in Denmark - a nationwide observational study**Authors:**

Mads Klinge (1), Martin Aasbrenn (1), Buket Öztürk (2), Christian Fynbo Christiansen (2), Charlotte Suetta (1), Eckart Pressel (1), Finn E. Nielsen (3)

1. Geriatric Research Unit, Department of Geriatrics, Bispebjerg-Frederiksberg University Hospital, Copenhagen, DENMARK
2. Department of Clinical Epidemiology, Aarhus University Hospital, Aarhus, DENMARK
3. Department of Emergency Medicine, Bispebjerg-Frederiksberg University Hospital, Copenhagen, DENMARK

Keywords: Elderly, short term admission, readmission, prognostic factors

Abstract :**Background**

The demand for efficiency in health care leads to short hospital stays for many patients. For older patients, early discharge may increase the risk of readmission. The aim of this study was to examine the readmission rate among elderly medical patients discharged ≤ 24 hours after admission, and to examine the impact of demographic factors, comorbidity and admission diagnoses on readmission.

Methods

All medical patients ≥ 65 years admitted acutely to Danish hospitals between 1 January 2013 and 30 June 2014 surviving a hospital stay of ≤ 24 hours were included. Readmission within 30 days, comorbidity, demographic factors and reasons for admission (discharge diagnoses) were registered using the Danish National Registry of Patients. We used Cox regression with adjustment for potential confounders to estimate adjusted hazard ratios (aHR) with 95% confidence intervals (CI) for readmission.

Results

Out of 93,306 patients, 18,958 (20.3%; 95% CI 20.1%-20.6%) were readmitted. Male sex (aHR 1.15; 1.11-1.18) and a Charlson Comorbidity Index ≥ 3 (aHR 2.28; 2.20-2.37) increased the risk of readmission. Other factors associated with increased risk of readmission were admission diagnoses of heart failure (aHR 1.26; 1.12-1.41), chronic obstructive pulmonary disease (aHR 1.33; 1.25-1.43), dehydration (aHR 1.28; 1.17-1.39), constipation (aHR 1.26; 1.14-1.39), anemia (aHR 1.45; 1.38-1.54), pneumonia (aHR 1.15; 1.06-1.25), urinary tract infection (aHR 1.15; 1.07-1.24), suspicion of malignancy (aHR 1.51; 1.37-1.66), fever (aHR 1.52; 1.33-1.73) and abdominal pain (aHR 1.12; 1.05-1.19).

Conclusions

One fifth of acutely admitted medical patients aged ≥ 65 years were readmitted within 30 days after early discharge. Male gender, the burden of comorbidity and several primary admission diagnoses were prognostic factors for readmission.

Trial Registration / Funding Information (only) :

Finn E Nielsen has received grants from Naestved-Slagelse-Ringsted Research Foundation, Region Zealand Health Research Foundation and Bispebjerg-Frederiksberg Hospital Research Foundation

#19019 : Major Trauma Management in an Emergency Department: the Pivot Role of Trained Emergency Medicine Specialists**Authors:**

Alessandro Lunardon (1), Maria Francesca Valastro (1), Chiara Alexopoulos (1), Giacomo Cimicchi (1), Rosa Laverda (1), Silvia Bogotto (2), Giulia Berti de Marinis (3), Roberta Volpin (3), Vito Cianci (3), Andrea Bortoluzzi (3)

1. Emergency Medicine Residency Program, University of Padova, Padova, ITALY
2. School of Medicine, University of Padova, Padova, ITALY
3. Emergency Department, Azienda Ospedaliera di Padova, Padova, ITALY

Keywords: trauma - injury severity score – injury – epidemiology - trauma system – outcome – mortality – emergency medicine – consultant

Abstract :

Aim. Aim of the present study is to provide reliable information about the features, the clinical and diagnostical management related to the outcome of critical major trauma patients admitted in our Emergency Department (ED) and handled by the emergency medicine specialist as team leader.

Methods. Data were obtained from a retrospective, single-center study including 176 adult patients assessed as Red Code (alteration of vital signs) in the Emergency Department of Padova from January 2017 to December 2018; according to the Injury Severity Score (≥ 15), we screened 108 major trauma patients (72.2% male; age $57,1 \pm 22,8$). We focused on diagnostic-therapeutics (invasive and non-invasive) procedures performed and on the following features of trauma: dynamics, type and intention. The outcome was defined in terms of mortality in the ED and during the following hospitalization. Other variables considered were: prehospital transport; vital signs; blood tests and ABG; imaging; specialist consultations required; hospitalization unit.

Results. We found that the large majority of injuries were blunt trauma (87.9%), accidental (65.7%) and caused mostly by falling (26.8%), followed by motorcycle incident (17.5%) and bicycle incident (12%). Nearly 40% had an active bleeding when admitted in the ED with 32.4% receiving blood transfusion. The percentage of prehospital endotracheal intubation was 48.1; the rate of intubations performed by the emergency physicians in-hospital was the 55.3% of prehospital not intubated patients (28.7% of all patients enrolled). We identified a mortality in the ED of 4.6%, while the one during the recovery reached the 25%. Among all specialists, neurosurgery consultant was requested in the 67.6% of cases, followed by general surgeon (39.8%). 43.5% of all patients were admitted in ICU after a primary stabilisation.

Conclusion. Our results show how the emergency medicine specialist, trained in international trauma protocols, is able to perform a holistic approach of critical major trauma, including invasive and non-invasive procedures, with a positive outcome on the mortality in the ED. Nonetheless, due to the complexity of trauma injuries and the potential deterioration that can occur, it's essential an interdisciplinary cooperation among the emergency physician and the specialist consultants, in order to ensure the patient to the most proper treatment pathway. Our future goal is to compare our experience with the national and international ones, so that we can assess the different way of managing a major trauma, promoting the role of the emergency physician as a central figure.

#19020 : Maturation of a Trauma Unit: 5 years of sweeping the floor**Authors:**

Thomas Geliot (1), Christopher Tattersall (1), Ben Warrick (1), Neil Roberts (1)

1. , Royal Cornwall Hospital, Truro, UK

Keywords: trauma, major trauma, performance improvement, maturation,

Abstract :**Background:**

Royal Cornwall Hospital (RCH) became a trauma unit in 2012, as part of the Peninsula Trauma Network. It covers a population of nearly half a million people, spread across a wide geographic area, and sees a wide range of trauma.

Performance improvement programmes are associated with better outcomes in trauma centres. They help cultural and structural change take place during the 'maturation' phase following any large scale organisational change. Regular and robust case review and learning represents a crucial part of performance improvement.

Aim:

This poster analyses the development of RCH major trauma performance improvement programme 'Tackling Trauma', over the last 5 years. It reflects on methods, growth, outcomes and lessons learnt for other trauma units looking to develop their own performance improvement programme.

Method:

Upon inception of RCH Trauma Unit the meeting originated as a small group of enthusiasts. This has developed into an educational meeting incorporating elements of journal club, education and performance improvement into a critical multidisciplinary meeting. This occurs weekly, with coffee and pastries provided. The meeting reviews two major trauma cases which generates frank, open multi-disciplinary team discussion. The cases are selected and presented by the Major Trauma Fellow (ED Trust Grade 80:20 time split ED:Fellow time). Inclusion criteria for discussion are based on hospital trauma calls that generate interest and highlight system flaws for improvement. Quality improvement outcomes are generated, logged and owned by individuals to ensure completion. At the meeting there is reinforcement of good practice. Following tackling trauma, information is disseminated into local guidelines, policy & inputted into regional teleconference.

Discussion:

Tackling trauma has evolved over 5 years. On average the attendance has grown, with representation from a growing array of specialities. This has allowed for case based discussions that have turned into tangible policy changes in RCH to improve the care of major trauma patients. For example, code red trauma calls, chest wall injury pathways, trauma CT transfer, student trauma scribes to name a few.

Lessons Learned:

Data is power. Use audit and information to solve controversial and political disputes. Set up your trauma calls and your review process to facilitate proper data collection and analysis. Feedback is everything – measure outcomes and feed them back to the team in a timely manner – 'Where are we now? Where should we be?'. Set gold standards and stick to them. Make it educational – people will attend if you make it

worth their while. Bribe them with coffee and buns! Invite outside agencies as you'll each learn a great deal by talking around the same table. Trainees and medical students are full of ideas, work on the frontline, and are keen to get involved in performance improvement. Give people projects, hold them accountable, show them tangible outcomes – the programme will snowball. Make it multidisciplinary, all are crucial to making things work. Review where you've come from every once in a while. You might be surprised how far you've come, and it gives added impetus to major challenges ahead.

Trial Registration / Funding Information (only) :

N/a

#19021 : Utility of Presepsin (PSP) in risk stratification of septic patients in Emergency Department (ED). A comparison with SOFA score.**Authors:**

Piero Pozzessere (1), Roberto Lovero (2), Mariangela Portaluri (3), Michela Nardacci (3), Riccardo D'uva (3), Paola Dell'Aquila (4), Vito Procacci (4)

1. Medicina e Chirurgia d'Accettazione e d'Urgenza , Azienda Ospedaliera Policlinico, Bari, ITALY
2. U.O.Complessa Patologia Clinica Ospedaliera, Policlinico Hospital Bari, Bari, ITALY
3. postgraduate school in Emergency Medicine, University of Bari Medical School Bari, Bari, ITALY
4. Medicina e Chirurgia d'Accettazione e d'Urgenza, Policlinico Hospital Bari, Bari, ITALY

Keywords: #presepsin #sepsis #sofa score #mortality

Abstract :

Presepsin is the soluble N-terminal fragment of the protein CD14, a receptor of the complex formed by the bacterial lipopolysaccharide and the bonding protein which is able to provide precise prognostic information for septic patients, since their admission in the ED.

The **aim of our study** is to evaluate the short term prognostic role of the presepsin (28 days) in septic patients in the ED. We also evaluated the ability of PSP to predict the mortality in comparison of SOFA score.

Results: it is a retrospective observational study. We have evaluated the values of presepsin in 375 adult patients referred to the our ED with a suspicious of sepsis from January 2017 to february 2018. Patients were classified in: negative (25; 0,06%), infected (71; 19%) septic (232; 61.8%) and septic shock (47; 0,12%) according to Sepsis-3 classification. The SOFA score was calculated for each patient. PSP median values was 366,2ng/ml for negative patients, 638,8 ng/ml for infected, 1580,8 ng/ml for septic and 2995,5 ng/ml for septic shock ($p=0,001$ according to ANOVA test between different groups). At day 28 the global mortality was 34,6% (130/375). In all patients we found a significant correlation between PSP values and eGFR (r of Pearson -0,34) and SOFA score ($p=0,001$ r of Pearson 0,41). Initial PSP values and SOFA score were predictive of mortality at 28 day (respectively AUC 0,76 and 0,83). Among 131 deceased patients, on the first day twelve had a SOFA score ≤ 1 ; eleven of them had a PSP's value greater than 600ng/ml.

Conclusions: the present study highlights the way in which PSP may be helpful to the septic patients' care in ED. Our data support his diagnostic and prognostic role in that setting, as demonstrated by the correlation with the SOFA score. Moreover in patients with normal SOFA score, high levels of PSP can predict a subsequent bad prognosis. The rational use of this molecule could lead to several advantages, such as faster diagnosis, more accurate risk stratification, and optimization of the treatment, with consequent benefit to the patient and considerably reduced costs.

#19023 : Variability of cardiac activity evaluation between physician sonographers: a validation study**Authors:**

Hirokazu Maeda (1), Hiroshi Okamoto (2)

1. Department of Emergency Medicine, Sugita Genpaku Memorial Obama Municipal Hospital, Fukui, JAPAN

2. Department of Critical Care Medicine, St. Luke's International Hospital,, Tokyo, JAPAN

Keywords: POCUS, Echocardiography, Resuscitation

Abstract :**Background:**

The absence of cardiac activity (CA) on point-of-care ultrasound (POCUS) during the cardiopulmonary resuscitation (CPR) is a known predictive factor for worse patient outcomes. However, the assessment of CA is challenging due to the urgency of the situation and lack of clear definition of CA. Although a previous study has shown the considerable variability in interpretation of CA among physician sonographers, it is not validated in different populations. The aim of our study is to examine the inter-person agreement of CA evaluation among physician sonographers.

Methods:

This was a cross-sectional questionnaire survey conducted between August 2018 and April 2019. The participants were recruited from 7 hospitals in Japan. All participants evaluated the 20 second echocardiographic video and answered the presence or absence of CA. This video consisted of 15 cases that were either CA positive (strong myocardial contraction, weak myocardial contraction, ventricular fibrillation) or CA negative (no cardiac motion, cardiac motion by bag valve mask ventilation, and valve flutter without myocardial contraction). Other questionnaire contents were as follows: speciality of the physician sonographer, self-reported general POCUS skill level, experience of echocardiography in CPR and post-graduated year (PGY). Our primary outcome was the overall inter-person agreement of CA evaluation. The inter-person agreement of CA evaluation was investigated using Krippendorff's alpha coefficient. Additionally, we conducted sensitivity analysis with different subgroups (specialty, self-reported general POCUS skill level, experience of echocardiography in CPR, PGY).

Results:

A total of 41 physician sonographers were recruited [23 emergency physicians (56.6%), 6 intensivists (12.2%), and 7 residents (17.1%)]. Self-reported general POCUS skill levels were basic (68.3%), advanced (29.3%), and expert (2.4%). The number of experiences of echocardiography in CPR was 0 (17.1%), 1-5 (17.1%), 6-10 (19.5%), 11-25 (14.6%), and >25 (31.7%). PGY was 1-2 (17.1%), 3-6 (36%), 7-10 (29.3%), and >11 (14.6%). The overall agreement rate of CA evaluation was moderate ($\alpha=0.53$). Sensitivity analysis showed similar results [Self-reported general POCUS skill levels: basic (0.53), advanced (0.48), and expert (NA). The number of experiences of echocardiography in CPR: 0 (0.58), 1-5 (0.64), 6-10 (0.5), 11-25 (0.48), and >25 (0.5). PGY: 1-2 (0.66), 3-6 (0.56), 7-10 (0.49), and >11 (0.44)].

Discussion & Conclusions:

Similar to the previous study, there was a considerable variability in interpretation of CA among physician sonographers. Hence, it may be difficult to use this finding as a guide to terminating CPR. A clear definition of CA is warranted to precisely detect cardiac arrest patients with poor outcomes.

Trial Registration / Funding Information (only) :

Trial Registration: This study wasn't registered because no patients involved. Funding: This study did not receive any specific funding. Ethical approval and informed consent: Not needed.

#19025 : Location Selecting of Automated External Defibrillator Deployment in Terms of Disability Adjusted Life Years Comparison
Authors:

Shih-Chiang Hung (1), Hung-Yi Chuang (2), Wen-Huei Lee (3), Kuan-Han Wu (3)

1. Department of Emergency Medicine, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan, Kaohsiung, TAIWAN

2. Department of Public Health, Kaohsiung Medical University, Kaohsiung, TAIWAN

3. Department of Emergency Medicine, Kaohsiung Chang Gung Memorial hospital, Kaohsiung City, TAIWAN

Keywords: cost-effectiveness, out-hospital cardiac arrest, disability adjusted life years

Abstract :

Objective:

Receiving early defibrillation is one of the major factors determining outcomes of out-of-hospital cardiac arrest patients. Widely siting public access automated external defibrillators (AED) is too costly to be executable. Therefore, we need to compare and chose a more cost-effectiveness location for AED deployment. Analysis with disability adjusted life years (DALY) is a common used methods for cost-effectiveness comparison. Objective of our study is to calculate and to compare the DALYs for out-of-hospital cardiac arrest (OHCA) patients, and the find the effectiveness of defibrillation between different types of locations.

Method:

The is a retrospective cohort study, from January 2015 to December 2016, under the help of OHCA registry of Fire Bureau of Kaohsiung City Government, using the template of Utstein resuscitation registry. DALYs is the sum of years of life lost (YLL) and years lived with disability (YLD). The YLL was calculated from the remaining standard life expectancy at the age of death. The YLD was calculated by multiplying the anticipated life duration and disability weight (DW). The DWs were assigned according to cerebral performance category (CPC) scores on the days of hospital discharge. Model of multivariate liner regression, adjusting age, sex, bystander resuscitation and defibrillation, in overall and different location types were performed. And the effect of defibrillation on DALYs were reported and compared.

Result:

After excluding 507 trauma-related events and 28 pediatric events (age < 18 years-old), there were 4600 non-trauma adult OHCA events in the study years. Among them, male 84.8%, mean age 69.3 +/-16.3, defibrillation rate 17.7%. The arrest occurrence numbers and defibrillation rate, mean age and good CPC result percentage (CPC score 1 and 2) of different locations were home/residence 2480 (14.19%), 70.76 y/o (0.89%); industrial/workplace 77 (45.45%), 52.39 y/o (9.76%); sports/ recreation 39 (58.97%), 59.40 y/o (14.29%); street/highway 146 (36.99%), 60.22 y/o (5.56%); public building 31 (32.6%), 56.46 y/o (0%); assisted living/nursing home 145 (10.34%), 77.77 y/o (0%); educational institution 9 (66.67%), 52.20 y/o (42.86%); other 150 (32.67%), 61.22 y/o (1.65%), unknown/not recorded 894.

The effect of defibrillation on DALYs in different location were: home/residence 1.06*; industrial/workplace 2.40; sports/ recreation 7.52*; street/highway 2.09*; public building 1.57; assisted living/ nursing home 0.03; educational institution 20.85*; other 1.95* (*, reaching statistical significance). Taking the occurrence numbers into considering, the avoiding DALYs attributed by defibrillation were home/residence 3388.91; sports/ recreation 315.66; street/highway; 376.38 educational institution 244.89.

Conclusion:

The effect of defibrillation on DALYs is most obviously in location of education institution. But taking into account the high occurrence numbers in home/residence, the more appropriate place to deploy AED is mass gathering high-rise apartment complex.

Reference:

- Ryan A. Coute, Brian H. Nathanson, Ashish R. Panchal, etc. *Disability-Adjusted Life Years Following Adult Out-of-Hospital Cardiac Arrest in the United States. Circ Cardiovasc Qual Outcomes. 2019;12:e004677. DOI: 10.1161/CIRCOUTCOMES.118.004677*

#19026 : Prominent ample "R" wave in right precordial, early sign of STElevation myocardial infarction of the anterior territory

Authors:

Ahmed Guesmi (1), Dorra Loghmari (2), Meriem Ben abdellaziz (3), Fedi Dziri (3), Mounir Naija (3), Rabeb Mbarek (4), Naoufel Chebili (3)

1. service d'aide médicale urgente (SAMU) 03 CHU sahloul sousse, CHU sahloul sousse, SOUSSE, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA

Keywords: STEMI,coronarography,electrocardigramme

Abstract :

Prominent ample "R" wave in right precordial, early sign of STElevation myocardial infarction of the anterior territory

A Guesmi,D Loghmari ,M Ben Abdelaziz,F Dziri ,M Naija ,R Mbarek ,N Chebili

Background:

Classically, in the event of an acute and complete occlusion of an epicardial coronary artery during ST elevation myocardial infarction "STEMI", electrical abnormalities begin at the rapid repolarization phase (most sensitive to ischemia), then slow repolarization and finally the depolarization phase.

In a series of 14 patients managed very early by our teams in prehospital care for STEMI of the anterior territory and whose coronarography showed an anterior inter-ventricular occlusion, we noticed that this sequence conventionally described may be different.

Observation:

- number of patients = 14
- Middle age: 56 ± 21 years [35-78].
- All our patients had either anterior or anterior-septal involvement or anterior involvement.
- The culprit coronary was the anterior inter ventricular in all our patients.
- The delay between the onset of chest pain and the diagnostic electrocardigramme (ECG) was on average 40 minutes [15-60].
- The repetition of ECG revealed in all our patients the increase or appearance of an ample R wave in V2 V3 associated with the large and symmetrical "T" wave of endocardial ischemia.

Conclusion :

In clinical practice, it is rare to have an electrocardiogram recorded during the first minutes of myocardial infarction. When the opportunity arises the clinician must be vigilant in the absence of ST segment elevation. Indeed we have seen that at this early phase of the STEMI anterior electrical anomalies can be summarized as a loose T wave of endocardial ischemia associated with a terminal distortion of the QRS complex. This will appear in the form of a giant "R" wave with decrease or disappearance of the "S" wave in V2 and V3 in case of occlusion of the anterior inter ventricular.

Trial Registration / Funding Information (only) :

no funding

#19027 : Disaster preparedness among Thai elderly emergency department patients: A survey of patients' perspective**Authors:**

Jiraporn Sri-on (1), Alissara Vanichkulbodee (1), Natchapon Sinsuwan (1), Anucha Kamsom (2), Rapeeporn Rojsaengroeng (1), Shan Woo Liu (3)

1. Emergency Department, Vajira hospital, Navamindradhiraj University, Navamindradhiraj University, Bangkok, THAILAND
2. Statistic department, Navamindradhiraj University, Bangkok, THAILAND
3. Emergency department, Massachusetts General Hospital, Massachusetts General Hospital, Boston, USA

Keywords: Disaster Elderly Emergency department

Abstract :

Introduction: In disaster situations, the elderly are considered to be a particularly vulnerable population. Preparedness is the key to reduce-post disaster damage. There is limited research in middle income countries on how well elderly emergency department(ED) patients are prepared for disaster situations. The objective of this study was to determine the attitudes and behavior of elderly ED patients toward disaster preparedness.

Methods: This study was a cross-sectional face to face survey at one urban teaching hospital in Bangkok, Thailand between 1st August and 30th September, 2016. Patients aged 60 and older who presented to the ED were included to this study. We excluded patients who had severe dementia [defined as Short Portable Mental State Questionnaire's (SPMSQ) >8], were unable to speak Thai, had severe trauma and/or needed immediate resuscitation. The survey instruction was adapted from previous disaster surveys. The study was approved by the hospital institutional review board (IRB).

Results: A total of 243 patients were enrolled. Most of them were female [154 patients (63.4%)]. The median age was 72 [interquartile range(IQR) 66-81 years] and the most common underlying disease was hypertension 148 patients (60.9%). The majority of patients [172patients(72.4%)] reported that they had had some teaching about disaster knowledge from healthcare providers and had experience a disaster [138 patients (56.8%)]. While 175/197 (81.8%) of patients who had underlying diseases reported that they had a medication supply for disaster situations, only 61 (25.1%) patients had an emergency tool box for disaster. Most 159(65.4%) patients did not know the emergency telephone number, and 133 (54.7%) patients reported transportation limitations.

Conclusion: While most Thai elderly ED patients reported having a medication supply for disaster situations, many lack comprehensive plan for disaster situation. Work need to be done to improve the quality of preparedness in disaster situations among elderly ED patients. Future research should focus on preparedness knowledge regarding evacuation and shelter/residence for elderly patients.

#19030 : Quality of tracheal intubation in out-of-hospital emergency medicine: measure of the rate of the failure of the first attempt - SMURIDS study**Authors:**

Marion Wrobel (1), Romain Boyer (2), paul Georges Reuter (3), Guillaume Debaty (4), Mirko Ruscev (5), Gilles Bagou (6), Kamelia Marouf (7), sybille Goddet (8), Juilane Bosc (9), Jean-Paul Lorendeau (10), Emilie Dehours (11), Michel Galinski (1)

1. Pôle Urgences adultes - SAMU 33, Hôpital Pellegrin - CHU de Bordeaux, Bordeaux, FRANCE
2. Pôle Urgences adultes - SAMU 33, Hôpital Pellegrin - CHU de Bordeaux, Bordeaux, FRANCE
3. SAMU 92, Hôpital Raymond Poincaré - APHP, Garches, FRANCE
4. SAMU 38, CHU de Grenoble, Grenoble, FRANCE
5. SMUR de Gonesse (95), CH de Gonesse, Gonesse, FRANCE
6. SAMU 69, CHU de Lyon, Lyon, FRANCE
7. SAMU 49, CHU d'Angers, Angers, FRANCE
8. SAMU 21, CHU de Dijon, Dijon, FRANCE
9. SMUR de Libourne (33), CH Robert Boulin - Libourne, Libourne, FRANCE
10. SAMU 24, CH de Périgueux, Périgueux, FRANCE
11. SAMU 31, Hôpital Purpan - CHU de Toulouse, Toulouse, FRANCE

Keywords: tracheal intubation; out-of-hospital emergency setting; first attempt failure.

Abstract :

Introduction

Orotracheal intubation could be difficult in out-of-hospital setting, in relation with austere clinical and environmental conditions. The duration increase of the intubation is associated with severe complications. Our objective was to measure the rate of the failure of the first attempt in the out-hospital setting and to evaluate factors associated with this failure.

Method

Multicentre retrospective study realized between march2017 and june2018 in 9 centers. Patients with age of 15 years old and more intubated in the out-of-hospital setting were included.

The qualitative variables were expressed in percentage and confidence interval of 95%. The association between the failure of the first attempt and variables was measured with a multivariate logistic regression model. Variables with a significance defined by $p \leq 0.2$ in univariate analyze have been included in the model. Results were expressed in odds ratio and confidence interval of 95%.

Results

During the period of the study 1517 patients have been intubated and 1285 patients have been analyzed (exhaustiveness rate of 85%). The rate of failure of the first attempt was 30% [IC 95% 27,5; 32,5], 385 on 1285. Risk Factors associated of this failure were limitation of mouth opening OR 2,4 [IC 95% 1,6-3,5], big tongue OR 1,9 [IC 95% 1,2-2,9], ENT tumor history 4,3 [IC 95% 1,0-17,6], prior number of intubations done by the operator < 5 OR 1,6 [IC 95% 1,2-2,2] and cardiac arrest indication OR 1,7 [IC 95% 1,1-2,5]. The rate of difficult intubation measured with IDS score > 5 was 11,8% [IC 95% 10,0; 13,6].

Conclusion

This study showed a failure rate of the first attempt comparable with the high levels of rates already described in the literature. In one hand, the knowledge of the different risk factors has to improve the preparation of the operator before the attempt and in the other hand we have to improve our training.

#19031 : Non st-segment elevation myocardial infarction in elderly patients: epidemiology, clinical features and prognosis**Authors:**

fatma Mejri (1), hela ben turkia (2), marwa mabrouk (2), ines chermiti (1), amel ben garfa (2), monia ngach (1), Sami Souissi (1), Hanan Ghazali (1), jamila Habli (3)

1. emergency department, regional hospital of ben arous, ben arous, TUNISIA
2. urgence-SMUR hôpital régional Ben arous, hôpital régional ben arous, ben arous, TUNISIA
3. cardiology department, regional hospital of ben arous, ben arous, TUNISIA

Keywords: acute coronary syndrome, elderly, epidemiology

Abstract :

Introduction: In this century, we have reached a progress in life expectancy, but it comes with an increase of elderly patients with several diseases, including non ST-segment elevation myocardial infarction (NSTEMI). Despite the high prevalence of elderly, a few trials were interested in assessing the prevalence and the specificities of NSTEMI in elderly.

Objective: To study the epidemiological, clinical and prognostic features of NSTEMI in elderly admitted in the emergency department (ED).

Methods: A prospective observational study was conducted over height years. Inclusion of patients (age \geq 65years) admitted to ED for NSTEMI. The diagnosis of NSTEMI was based on anamnestic, clinical, electrocardiographic and biological criteria. The demographics, co-morbidities, clinical and biological data and in-hospital procedures were collected. ST segment depression was measured and the cumulative sum of the ST-segment depression, in millimeters (mm) was calculated. Calculation of ischemic risk (TIMI and GRACE) and bleeding risk (CRUSADE) score. The prognosis was based on the evaluation of mortality at six months.

Results: Of 660 NSTEMI patients, 245 are aged over then 65 years (37 %) (NSTEMI: n=100, Unstable angina: n= 145). Mean age was 73 ± 6 with sex ratio of 1.16. Comorbidities (%): hypertension (72), Diabetes (50), dyslipidemia (34), coronary artery disease (31). The mean TIMI and GRACE scores were equal to 4 ± 1 and 135 ± 37 respectively. The mean CRUSADE score was 31 ± 16 . Electrocardiographic findings n (%): ST segment depression 121 (49), T wave depression 44 (18) and no ischemic changes 41 (18). Initial management in the ED n (%): anti-ischaemic agents 109(44), antiplatelet agents (Acetylsalicylic acid 152 (62), Clopidogrel 121 (49)) and anticoagulants 111(45). Coronary angiography was done in 123 patients: early in 89 patients (36%) and elective in 34 patients (14%). Mortality rate: 13 %. Multivariate analysis identified two factors independently associated with mortality: GRACE score $>$ 145 (adjusted OR = 6,11 ; 95% CI [2.17, 17.17], $P<0.001$) and cumulative ST depression $>$ 7mm (adjusted OR = 1.18, 95% CI [1.09, 3.23], $P=0.04$).

Conclusion: NSTEMI in elderly patients is frequent and is associated with increased morbidity and mortality. This confirms the important role of emergency department in the first hours of management of this pathology to improve survival.

#19034 : Acute myocarditis emergency department: epidemiology, clinical features and management

Authors:

sana tabib (1), dhekra Hosni (1), ines belgacem (1), ines chermiti (1), monia ngach (1), mahbouba chkir (1), Sami Souissi (1), Hanan Ghazali (1), jamila Habli (2), souad chkir (2)

1. emergency department, regional hospital of ben arous, ben arous, TUNISIA
2. cardiology department, regional hospital of ben arous, ben arous, TUNISIA

Keywords: myocarditis, emergency department, epidemiology

Abstract :**Introduction:**

Myocarditis is an uncommon acute inflammatory syndrome with a life threatening potential. Rapid diagnosis is necessary due to its frequent early complications like cardiogenic shock and even tamponade leading to sudden death.

However, the diagnosis could be difficult because of atypical clinical presentation and in our case the limited resources in our emergency department (ED) due to the lack of rapid access to cardiac ultrasound and angioplasty to rule out suspected myocardial infraction.

This is what makes this affection challenging to the emergency physician.

Objective: To describe the epidemiology, clinical features, management and outcome of patients with acute myocarditis in ED.

Methods: Retrospective study done in an ED over two years (2017-2019) involving 86 patients suspected of pericarditis. We focused on patients diagnosed with acute myocarditis (AM). We determinate their epidemiological, clinical characteristics, management and complications.

Results: Twelve patients were diagnosed with AM (14%). Mean age: 35 ± 10 years. Sex-ration: 3. Three patients were initially diagnosed with ST segment elevation myocardial infraction. Comorbidities (n): hypertension (1), Diabetes (2), Myocarditis (1), Smoking (2)

Clinical characteristics (n): Brutal onset of chest pain CP (7), angina CP (9), CP increases with deep inspiration (3), decreases with ante flexion (1), episodic pain (4), dyspnea (1), Vomiting (3), fever (11) and peripheral signs of shock (2).

Electrocardiogram Characteristics (n): Normal (1), ST segment elevation (8): concave aspect and an amplitude higher in D2 lead than in D3 in 5 patients, diffuse in 3, in inferior leads 2), negative T waves (3), spodik sign (6) and micro voltage (2).

All patients had positive HS troponin. 4 patients had hyperleucocytosis. Five had normal chest x-ray and 2 had cardiomegaly.

Cardiac Ultrasound was done for 11 patients (normal in 4 patients, pericardial effusion in 6 patients and cardiac tamponade in 2 patients). A coronary angiography was done in 9 patients and were normal. One patient with a high likelihood of STEMI had thrombolysis in absence of a rapid coronary angiography. Seven patients were treated with colchicine. Eight had acetylsalicylic acid. We administrated beta blockers to 3 patients and ACE inhibitors in 6. The main complications were :1 case of heart failure , 1 case of brain hemorrhage ,one death and 2 cases of cardiac tamponade.

Pericardiocentesis was performed in 2 patients: one was successful done in a cardiology center and the other in the ED during a resuscitation of an abrupt cardiac arrest.

Nine patients were transferred to a cardiology ward and 2 were hospitalized in the ED.

Seven patients were contacted at one month of AM: 4 recovered well and 3 had relentless chest pain.

Conclusion:

AM is a life threatening potential pathology and it is frequently observed in ED. To know its epidemiological profile and clinical characteristics can identify quickly the diagnosis and optimize its management.

#19035 : Improving Emergency Department flow: implementation of consultant based triage in a tertiary university hospital**Authors:**

Stefano Sartini (1), Luca Castellani (2), Marta Castelli (2), Ludovica Ceschi (2), Luca Colombo (2), Irene Maratona (2), Luca Moisio Corsello (2), Andrea Lorenzo Poggi (2), Chiara Ricco (2), Ombretta Cutuli (1), Paolo Barbera (1), Roberto Tallone (3)

1. Consultant in Emergency Medicine, University Hospital San Martino, Genoa, ITALY
2. Emergency Medicine Trainee, University Hospital San Martino, Genoa, ITALY
3. Director of the Accident&Emergency Department, University Hospital San Martino, Genoa, ITALY

Keywords: emergency department, length of stay, model of care, streaming, interventions

Abstract :BACKGROUND

Improving patients flow throughout the Emergency Department(ED) is a desirable goal to reduce overcrowding, morbidity and mortality, and to improve patients and operators satisfaction. Several interventions can be made to reduce the throughput patient flow. Our ED is provided with a rapid assessment area (RAA) after standard first level nurse-led triage. Since November 2018 a senior doctor, so called facilitator, was placed in the RAA. The aim of this study was to compare the waiting-to-be-seen time and ED length of stay (LOS) before and after this intervention.

METHODS

This is a retrospective cohort study conducted in the ED of the San Martino University Hospital, a tertiary referral centre located in Genoa, Italy, accounting of 90.000 annual visit rates. We analysed data of all ED presentations during 5 months before (from November 2017 to March 2018) and 5 months after (from November 2018 to March 2019) the facilitator implementation. Using our local software, waiting-to-be-seen time (from triage registration to first medical contact) and LOS (from triage to ED discharge) of all patients were analysed. The intervention consisted of the presence of the facilitator in the RAA from Monday to Friday for 6 hours/day meeting the peak demand periods since 1st November 2018. Before this date RAA was nurse-led. His function was to commence a diagnostic and treatment plan then reviewed by other physicians. We analysed the times according to the four-grade priority scale attributed at triage as RAA manage the two middle grade of the scale (yellow and green codes) leaving the higher and lower grade (red and white codes respectively) to other pathway. Ethical approval was not needed as non clinical study. Waiting-to-be-seen time and LOS (in minutes) were normally distributed and compared with Student's t-test.

RESULTS

We analysed 38.402 and 44.204 ED visits from pre and post-facilitator implementation respectively. Waiting-to-be-seen time for yellow and green codes was reduced of 21,3% (from 103 to 81 min, $p<0.05$) and of 23,1% (from 157.5 to 121min, $p<0.05$) respectively. LOS for yellow and green codes was reduced of 23.2% (from 328 to 251.7 min, $p<0.05$) and of 17.3% (from 303.6 to 250.8min, $p<0.05$) respectively. Red codes waiting-to-be-seen time increased from 6.6 to 10.6min whilst their LOS reduced from 205,6 to 181min (-17.9%). Similarly white codes waiting-to-be-seen time increased from 120.1 to 122.3 and LOS reduced from 205,6 to 181min and from 197.3 to 172.6 min(-14.6%).

DISCUSSION & CONCLUSION

We found a reduction of both waiting-to-be-seen time and LOS during facilitator implementation period for yellow and green codes whilst red and white codes didn't seem to be affected in their waiting-to-be-seen time but we found a reduction in their LOS. This may be related to a beneficial indirect effect of the facilitator on the other physicians reducing their workload for each patient. Even if many other variables should be taken into account, according to these results facilitator helped to significantly boost ED patients' process. Management of ED patients flow is an important instrument to reduce overcrowding and further strategies should be sought and implemented.

Trial Registration / Funding Information (only) :

TRIAL REGISTRATION: not required as non-clinical work FUNDING: This study did not receive any specific funding ETHICAL APPROVAL: not needed

#19036 : The use of medical applications by interns within emergency departments.**Authors:**

Dorra Loghmari (1), Chrifa Aouini (2), Rabeb Mbarek (3), Dhia Ammari (2), Farrouk Douma (2), Mounir Naija (2), Naoufel Chebili (2)

1. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
2. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA

Keywords: intern,emergency departements,medical application,smartphone

Abstract :**The use of medical applications by interns within emergency departments.**

D Loghmari,C Aouini,R Mbarek ,D Ammari, F Douma ,M Naija,N Chebili.

BACKGROUND : Nowadays we count 2.6 billion users of smartphone worldwide. According to a study published by Ericsson (Mobility report) in 2015 , it's previewed that this number will passe to 6.1 billion by 2020. Half of these users search on their phones informations about health.

There is no doubt that using smartphone and applications industry will be more developed but which applications might be useful for Emergency Physicians?

Aim: our objective was to describe and quantify the use of applications of Smartphone by Emergency interns as a part of their medical practice .

METHODS: Descriptive , transversal and multicenter study realized over a period of one month ;December 2017; using a questionnaire served hand to hand to emergency interns.

RESULTS: 82 emergency interns participated in this study with a response rate at 100% . In our population, 78% had smartphone , which mean a rate at 95% . The majority of the interns who had Smartphone confirmed they use it when working .

The mostly used medical applications by the responders were prescription help applications (84%), practical sheets (83%) , score calculators (94%).

The reasons for using applications were help with diagnostic and therapeutic (90%) as well as self-study (80%) .

The Smartphone was never used as medical device.

CONCLUSION : the study we led shows that a big proportion of emergency interns uses applications on their smartphone as a professional help. The smartphone allows them to have the possibility to find quick answers especially at any time and at any place they are.

Trial Registration / Funding Information (only) :

no funding

#19039 : Economic value of a clinical pharmacist at the Emergency Department: a retrospective observational study.**Authors:**

Saskia Van Kemseke (1), Ellen Oudaert (1), Hilde Collier (2), Stephane Steurbaut (2), Koen Putman (3), Door Lauwaert (4), Ives Hubloue (4)

1. Pharmacy Department and Emergency Department, University Hospital Brussels, Brussels, BELGIUM
2. Pharmacy Department, University Hospital Brussels, Brussels, BELGIUM
3. Department of Medical Sociology and Health Sciences, Vrije Universiteit Brussel, Brussels, BELGIUM
4. Emergency Department and Research Group on Emergency and Disaster Medicine, University Hospital Brussels, Brussels, BELGIUM

Keywords: Emergency Department, clinical pharmacist, medication errors, drug related problems, economic value, cost-benefit

Abstract :

Background. Medication errors (MEs) and other drug related problems (DRPs) are common issues on hospital admission. These MEs and DRPs can cause preventable adverse drug events (pADEs) resulting in patient harm with a significant additional cost. A clinical pharmacist (CP) dedicated to the Emergency Department (ED) can improve medication safety by performing medication reconciliation and review, and hence avoid additional costs.

Objective. The aim of this study was to determine the economic value and the cost-benefit of a CP in the ED by applying a theoretical model (University of Sheffield School of Health and Related Research – SCHARR¹).

Setting and Methods. This retrospective, single-centre, observational study was carried out in the ED of a tertiary care university hospital. Since October 2016, 1 FTE CP is dedicated to the ED. Patient-specific recommendations recorded by the CP during a 1 month period were observed. On admission to the ED, the CP had carried out a standardized medication reconciliation and medication review in order to determine pADEs. The most important pADE for each patient was selected and classified for its potential to cause harm using severity rating methods. An expert panel of senior ED physicians evaluated the pADEs for clinical significance. The net cost avoidance was calculated according to the SCHARR model¹. We took into account the lower cost limit of the SCHARR model and current inflation. Statistical analysis was done using Graphpad Prism[®] and Microsoft Excel[®].

Results. During 1 month (18 weekdays), the CP recorded recommendations for 136 patients (>18 years) admitted to the ED. On ED admission, medication reconciliation was performed for 98 patients with a median of 4 (IQR 2-7) discrepancies/patient. A medication review for both chronic medication and medication prescribed at hospital admission was performed ($n=109$ and $n=98$ respectively). Only the CP' interventions leading to the most important pADE for each patient were taken into account for the calculation of the cost avoidance. We classified 18 (14.8%) DRPs, 66 (54.1%) DRPs, 37 (30.3%) DRPs and 1 (0.8%) DRP as a pADE with minor or no harm, significant pADE, serious pADE and at least as a severe, life-threatening or fatal pADE, respectively. According to the SCHARR model, this contributed to a net cost avoidance of €40 940. We documented 5 (4.1%) discrepancies without DRP, 53 (43.4%) discrepancies linked to a DRP and 64 (52.5%) DRPs without discrepancy with a cost avoidance of respectively €303, €17 734 and €31 003. The benefit:cost ratio was 5.05:1. Furthermore, the pharmacist carried out a total of 722 interventions.

Conclusion. A CP, integrated in a multidisciplinary ED team, has an important economic value. Furthermore, the CP enhances medication quality and safety by preventing discrepancies in the chronic medication and by the identification of DRPs on admission at the ED.

¹ Campbell F, Karnon J, Czoski-Murray C, et al. *A systematic review of the effectiveness and cost-effectiveness of interventions aimed at preventing medication error (medicines reconciliation) at hospital*. Report for the National Institute for Health and Clinical Excellence as part of the Patient Safety Pilot. 2007

#19040 : Gender differences in presentation and management in patients with syncope

Authors:

ines belgacem (1), hajer touj (2), morsi ellouz (1), ines chermiti (1), hela ben turkia (2), najla elheni (3), mahbouba chkir (1), Sami Souissi (1), Hanan Ghazali (1), jamila Habli (4), souad chkir (4)

1. emergency department, regional hospital of ben arous, ben arous, TUNISIA
2. urgence-SMUR hôpital régional Ben arous, hôpital régional ben arous, ben arous, TUNISIA
3. , regional hospital of ben arous, ben arous, TUNISIA
4. cardiology department, regional hospital of ben arous, ben arous, TUNISIA

Keywords: syncope, gender, difference

Abstract :**Introduction:**

Syncope is a major health care problem that accounts for many emergency departments (ED).Syncope affects both men and women. There are several predisposing factors and etiologies that favor the onset of syncope.

Objective: The aim of our study was to compare the incidence, risk factor, etiology of syncope between genders.

Methods:

Prospective, observational study over six years. Inclusion of adult patients admitted to the ED with a diagnosis of syncope. Exclusion criteria: no consent, neurological deficit suggestive of stroke, previous recruitment into the study, collapse related to alcohol consumption, trauma, or seizure activity. A physical examination, an electrocardiogram (ECG) and an orthostatic hypotension test were performed. Patient's management was based on the EGSYS (evaluation of guidelines in syncope study) score. All patients were explored in the cardiac unit. The final cause of the syncope has been determined after investigations.

Results: Inclusion of 384 patients: 239 (62,4 %) men and 144 (37,6 %) women. Mean age: 50 ± 21 years. Compared with women , men were generally older (53 vs. 50 years) ,more likely to have a history of diabetes mellitus (24 vs.20%) , cardiopathy (6 vs. 2%) , known rhythm disorder (2.5 vs.1.5 %) and vavulopathy (0.8 vs. 0.3%), but had lower prevalence of hypertension (18 vs.12%) and The clinical presentation before syncope in women was dominated by palpitation (30 vs.15%). The ECG was normal in 23% of women vs. 33% in men ($p= 0.003$). Women had lower prevalence of ventricular hypertrophy (1 vs. 5 % , $p=0.038$), bradycardia (1 vs. 8.4% , $p=0.031$) and heart infraction (0 vs. 5% , $p=0.011$) in ECG. There was no difference in heart rates and EGSYS score. Syncope reflex was frequent in women (14,5 vs. 32% in men , cardiac syncope was frequent in men 30 vs. 27% in women .

Conclusion:

In our study, men were older and less symptomatic. Syncope reflex was more frequent in women than in men but cardiac syncope was more frequent in men than in women.

#19043 : Risk Stratification and Age-Adjusted D-Dimer Test: Are They Satisfactory in Acute Pulmonary Embolism?

Authors:

Attila Pandur (1), Balint Banfai (1), Agnes Pandur-Sarkany (2), Henrietta Banfai-Csonka (1), Bence Schiszler (1), Jozsef Betlehem (1), Balazs Radnai (1)

1. , University of Pecs, Pecs, HUNGARY

2. , Emergency Department, University of Pecs, Pecs, HUNGARY

Keywords: Acute pulmonary embolism, risk-assessment, emergency care

Abstract :

PURPOSE: Pulmonary embolism (PE) is associated with high morbidity and mortality and often has a nonspecific clinical presentation. The use of diagnostic testing to reduce the risk of missing a potentially life-threatening diagnosis increases both the cost of care and the use of medical resources. Various score systems exist to evaluate the probability of PE, which can also be used for risk stratification to obtain the most accurate diagnosis. The aim of our study was to review the evidence for existing prognostic models in acute PE and determine their validity and usefulness for predicting patient outcomes. We also determined the accuracy of an age-adjusted D-dimer threshold to detect PE.

METHODS: The study involved the retrospective application of an age-dependent D-dimer cut-off (age/100 in patients aged >50 years) in 659 consecutive patients, both in and outpatients, aged ≥ 18 years who had undergone CT pulmonary angiogram for suspected PE according to the European Society of Cardiology (ESC) guidelines. We included individuals who presented to an emergency department with a suspicion of PE and who were then referred for objective testing; all participants included were capable of providing informed consent. This study was performed in three emergency departments in Hungary between January 2016 and September 2018. We retrospectively collected information regarding symptoms (dyspnoea, unilateral leg swelling, and haemoptysis), vital signs, and medical and social history (cancer, recent surgery, medication, history of deep vein thrombosis or PE, and chronic obstructive pulmonary disease). We calculated test characteristics, including sensitivity and specificity. We applied three different D-dimer approaches to the low and moderate-probability patients. The primary outcome was exclusion of PE with each D-dimer approach, while the secondary objective was to estimate the negative predictive value for each rule. Data were analysed using SPSS 24.0 statistical software.

RESULTS: In the 659 cases (407 women and 252 men), a total of 105 D-dimer assays, 51 CT angiograms, and 212 chest X-ray examinations were carried out redundantly; if these procedures were not carried out, it could have saved money for the hospitals and reduced radiation exposure for patients. The age-adjusted D-dimer threshold was more specific (70% versus 60%) but less sensitive (95% versus 98%) than risk stratification. The sensitivity of the combined technique (risk stratification and age-adjusted D-dimer test) was 100%.

CONCLUSION: Our study showed that Geneva score (which was calculated from the patients' complaints, medical history, and physical examination) had the closest correlation with the true diagnosis. An age-adjusted D-dimer limit has the potential to reduce the need for diagnostic imaging and is more accurate than the standard threshold of 500 ng/dL. The combination of risk stratification and age-adjusted D-dimer can be used to safely diagnose PE. Finally, we can conclude that risk evaluation in acute PE is indispensable and the appropriate use of guidelines results in lower healthcare costs. Our data support the use of age-adjustment and perhaps adjustment for other factors also seen in patients evaluated for PE.

#19049 : Sepsis in the emergency care

Authors:

Attila Pandur (1), Balint Banfai (1), Henrietta Banfai-Csonka (1), Agnes Pandur-Sarkany (2), Bence Schiszler (1), Jozsef Betlehem (1), Balazs Radnai (1)

1. , University of Pecs, Pecs, HUNGARY

2. , Emergency Department, University of Pecs, Pecs, HUNGARY

Keywords: Sepsis, emergency care, biomarker,

Abstract :

Sepsis is life threatening organ dysfunction caused by a dysregulated host response to infection. Sepsis is a global public health emergency, affecting millions of people worldwide, and representing one of the largest causes of death across the world. The purpose of our research was to examine the incidence of sepsis, it's main complaints and the frequency of diagnosis before intensive care.

#19052 : Implementation of Dispatcher-assisted CPR was associated not only with better survival rates but also with increased number of cardiac arrest patients found by EMS with ventricular fibrillation

Authors:

Ondrej FRANEK (1), Jaroslav PEKARA (1)

1. EMS, EMS Prague, Praha, CZECH REPUBLIC

Keywords: OHCA D-CPR survival rate

Abstract :

Background

Many studies confirmed that dispatcher-assisted CPR (D-CPR) could improve survival from out-of-hospital cardiac arrest (OHCA) by significant improvement of bystander-CPR (B-CPR) rates. The aim of this study was to confirm relation between D-CPR implementation, incidence of cardiac arrest patients found by EMS with ventricular fibrillation (VF OHCA) and survival from VF OHCA from long-term (15 years) perspective.

Method

This is a retrospective analysis of Prague Utstein-style OHCA registry from the beginning of D-CPR implementation (2003) until the end of 2018. Survival from cardiac arrest was defined as survival with cerebral performance category 1 or 2 during 30 days follow-up after OHCA.

Results

During first ten years of D-CPR implementation, B-CPR rates increased from 13,6% to 81,0% ($p < 0,0001$) and then remained more or less stable for following 6 years. This process was in strong correlation with VF OHCA incidence (Pearson R score = 0,684; P-Value = 0,003) as well as with VF OHCA survival rate (Pearson R score = 0,782; P-value = 0,00011).

Conclusion

VF OHCA incidence as well as VF OHCA survival rates were in a strong correlation with D-CPR implementation as measured by B-CPR ratios. This supports the hypothesis that D-CPR increases survival from OHCA not only by improving survival rates, but also by keeping more patients with ventricular fibrillation running until EMS arrival.

#19054 : Anaphylaxis in an emergency department: Epidemiology, clinical features and management**Authors:**

raja fadhel (1), emna rezgui (1), ines chermiti (2), syrine keskes (2), sawsen chiboub (2), monia ngach (2), sana tabib (2), Sami Souissi (2), Hanan Ghazali (2)

1. urgence-SMUR hôpital régional Ben arous, hôpital régional ben arous, ben arous, TUNISIA

2. emergency department, regional hospital of ben arous, ben arous, TUNISIA

Keywords: anaphylaxis, epidemiology, emergency department

Abstract :**Background:**

The rate of occurrence of anaphylaxis is increasing in the Emergency Department (ED).

Understanding potential triggers and patient-specific risk factors for severity and fatality is the key to performing appropriate risk assessment in those who have previously experienced an acute anaphylactic episode.

Objective:

To describe the epidemiology, clinical features, management and outcome of patients with anaphylaxis in ED.

Methods:

Prospective, monocentric study over six years. Inclusion criteria: patients aged over 14 years presenting consecutively to ED with the diagnosis of anaphylaxis. Collection of epidemiological, clinical and therapeutic parameters.

Results:

A total of 687 patients were included. The mean age was 40 ± 15 years. Sex ratio=0,74. A history of anaphylaxis was reported in 40 % of cases. Cutaneous features were present in 96% of patients. Respiratory, cardiovascular, gastrointestinal and neurologic features were found respectively in 27, 22, 16 and 2%. Causative agent was known in 84% of cases. Most common category of causes n (%): drugs 363 (52,8%), food 170(24,7%) and insects 37(5,4%). No causes were apparent in 16,2% of cases. An anaphylactic shock was recorded in 336 patients (49%). Five factors were identified to be predictive for anaphylactic shock occurrence: history of anaphylaxis, anaphylaxis induced by antibiotics, parenteral administration, neurologic features and time elapsed between symptoms onset and the first medical contact equal to one hour. Adrenaline was used in 42% of patients, intravenously in 16,2%, via a breathing mask in 177 patients (25,8%). Fluid resuscitation was given to 610 patients (89%). 409 patients (59,5%) received histamine H1 antagonist, 658 patients (95,8%) received corticosteroids. **86%** of patients were discharged directly from ED after a mean period of observation of 5 hours. Biphasic reactions were reported in 13 patients. There was no death cases registered. Patients with drugs anaphylaxis were all referred to the allergy clinic.

Conclusion :

Anaphylaxis requires prompt recognition and management to improve patient outcomes.

#19055 : Early complications of ST segment elevated myocardial infarction in pre-hospital.**Authors:**

Rabeb Mbarek (1), Meriem Ben abdellaziz (2), Elee sghaier (2), Dorra Loghmari (3), Abdoulghani Abdouraman Meigag (2), Mounir Naija (2), Naoufel Chebili (2)

1. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA
2. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA
3. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA

Keywords: STEMI, complication, ECG, MECU

Abstract :**Early complications of ST segment elevated myocardial infarction in pre-hospital**

R Mbarek, M Ben Abdelaziz ,E Sghaier, D Loghmari, A Meigag, M Naija, N Chebili

BACKGROUND : ST- elevation myocardial infarction (STEMI) is the first diagnosis posed in front of chest pain. The early cardiovascular complications of a STEMI is a main problem in pre-hospital. The objective of our study was to determine initial complications of STEMI attended by medical team of the mobile emergency care unit.

METHODS :

This is a descriptive, prospective study including 305 patients with STEMI taken in charge by the mobile emergency care unit (MECU) in our regions over a period of 12 months from January 2018 to December 2018.

RESULTS: Among the 305 patients with STEMI , 105 (34%) had complications during the transport before reaching the hospital . The average age of these patients was 64 years. 74.46% of them were male. The average time from the appearance of the chest pain to pre-hospital diagnosis was 2 hours.

Ten of these patients had presented cardiopulmonary arrest and five of them had survived. 11 patients had cardiogenic shock, 21 presented with left ventricular failure and 26.59% of them developed heart rhythm disorders (atrial fibrillation in 6 cases, ventricular fibrillation in 5 cases, and ventricular tachycardia in 4 cases).

Conduction disorders were presented in 35% of cases including a third degree atrio-ventricular block in 7 cases, 2nd degree atrio-ventricular block in 8 cases and first degree atrio-ventricular block in 3 cases. Other types of complications occurred in 4 cases (right ventricular extension (2), right coronary dissection(1) and ventricular extra-systoles (1).

CONCLUSION :

Our investigation shows that one patient out of four with STEMI presented early complications in the pre-hospital. This highlights the importance of the precocity of the diagnostic since the show of early signs of STEMI , along side with an adequate pre-hospital care.

Trial Registration / Funding Information (only) :

no funding

#19056 : Symptoms related to spontaneous subarachnoid haemorrhage in an emergency system telephone triage – a retrospective cohort study**Authors:**

Asger Sonne (1), Jesper B Andersen (2), Vagn Eskesen (2), Frans B Waldorff (3), Freddy Lippert (4), Nicolai Lohse (5), Lars S Rasmussen (1)

1. Department of Anaesthesia, Rigshospitalet, University of Copenhagen, Copenhagen, DENMARK
2. Department of Neurosurgery, Rigshospitalet, University of Copenhagen, Copenhagen, DENMARK
3. Department of Public Health, University of Southern Denmark, Odense, DENMARK
4. Emergency Medical Services Copenhagen, University of Copenhagen, Copenhagen, DENMARK
5. Department of Anaesthesiology and Intensive Care, Hillerød Hospital, University of Copenhagen, Hillerød, DENMARK

Keywords: Subarachnoid haemorrhage, prehospital, triage, symptoms, decision support system, telephone visitation

Abstract :**Background:**

Spontaneous subarachnoid haemorrhage (sSAH) is a neurosurgical emergency. Clinical characteristics may vary from sudden onset of thunderclap headache or loss of consciousness to diffuse and mild symptoms. The European emergency telephone number 1-1-2 is supposed to be used for potential life-threatening injuries and illness. To assist in the triage, electronic decision support systems such as Criteria Based Dispatch (CBD) is often used.

We aimed to determine which dispatch criteria were used in patients with sSAH. Secondly, we sought to determine the positive predictive value (PPV), negative predictive value (NPV), sensitivity (SE) and specificity (SP) of these criteria.

Methods:

This was a retrospective cohort study conducted in March 2019. Data were extracted from the Danish National Patient Register on all patients aged 18 years or older, admitted to any hospital in the Capital Region of Denmark between May 1, 2011 and December 31, 2013 and discharged with a primary diagnosis of sSAH. Diagnoses were verified by medical record review. We merged these with CBD data from the Emergency Medical Service Copenhagen (EMS). Proportions, PPV, NPV, SE and SP were reported with 95% confidence intervals (CI).

Results: A total of 200 patients with sSAH were admitted within the study period. Sixty-two had not contacted the EMS. Of the remaining 138 patients, 36 had called a non-urgent medical helpline or ambulances had been requested by general practitioners. Thus, 102 patients had called the emergency number 1-1-2 but complete data were only available in 98 patients. The EMS received a total of 282,898 emergency calls during the relevant time period. The dispatch criterion "thunderclap headache" was recorded in 17 patients with sSAH (17.4%, 95% confidence interval (CI): 10.4-26.3) and 224 patients without sSAH (PPV 7.6% (CI: 4.5-11.9), NPV 100%, SE 17.4% (CI: 10.4-26.3), SP 99.9% (CI: 99.9-99.9)). Any form of severe headache was recorded in 22 sSAH cases (22.5%, CI: 14.6-32.0), (PPV 4.5% (CI: 2.9-7.0), NPV 100%, SE 22.4% (CI: 14.6-32.0), SP 99.8% (CI: 99.8-99.9)). The third most common criterion was unconsciousness, 14 cases. Other stroke symptoms (paralysis, impaired speech or visual disturbances) were found in 13 cases. In addition, a total of 36 other dispatch criteria were recorded including chest pain, seizures, traffic accident, diabetes, intoxication, gastrointestinal conditions, breathing difficulties, and unclear symptoms.

Discussion and conclusion: We found that numerous different dispatch criteria were recorded in patients with sSAH assessed via telephone. Typical symptoms like classic thunderclap headache are not commonly reported and the positive predictive value is low. sSAH should be considered as a possible diagnosis in a variety of patient groups during telephone triage.

Trial Registration / Funding Information (only) :

ClinicalTrials.gov ID: NCT03786068. Ethics committee approval was not needed. Funding was received from the Danish foundation Trygfonden.

#19057 : Stroke incidence and usage rate of fibrinolytic therapy in emergency department**Authors:**

raja fadhel (1), marwa mabrouk (1), siwar jerbi (2), ines chermiti (2), sana tabib (2), monia ngach (2), amel ben garfa (1), Sami Souissi (2), Hanan Ghazali (2)

1. urgence-SMUR hôpital régional Ben arous, hôpital régional ben arous, ben arous, TUNISIA
2. emergency department, regional hospital of ben arous, ben arous, TUNISIA

Keywords: stroke, fibrinolytic therapy, emergency department

Abstract :**Background:**

The Stroke is a diagnostic and therapeutic emergency and is responsible for heavy morbidity and mortality. Thrombolysis is currently the treatment of choice for ischemic stroke. It has been proven in terms of efficiency and safety by reducing the rates of morbidity and mortality of stroke. In our country, the practice of fibrinolytic therapy is still a subject of controversy and its use remains underestimated.

Objective: To obtain fundamental information on patients with acute stroke in an emergency department (ED) and to investigate the rate of fibrinolytic therapy in patients with acute ischemic stroke.

Methods: A single-center, prospective, observational study was conducted in emergency department (ED) during four years. Inclusion criteria: patients (>18 years of age) presenting to ED with a suspicion of recent stroke. Epidemiological characteristics and the management of those patients were described. Stroke severity was evaluated with the National Institutes of Health Stroke Scale (NIHSS). Disability was evaluated with the modified Rankin Scale (mRS) at 30 days.

Results:

Inclusion of 553 patients with a mean age of 66 ± 14 years, sex ratio = 1.3. The percentage of stroke: ischemic (74%) and hemorrhagic (26%). Patients' history and cardiovascular risk factors: hypertension 338 (61%), Diabetes 194 (31%), dyslipidemia 106 (19%), Atrial fibrillation 80 (14%), history of stroke 141 (25%), transient ischemic attack 21 (4%) and Tobacco 127 (23%). The clinical and prognostic features of ischemic stroke: Consultation period <4.30 hours: 192 (58%), the presence of prior anticoagulation: 129 (39%), patients with NIHSS <7: 146 (44%), NIHSS score > 15: 46 (14%), patients with high systolic blood pressure ≥ 180 mmHg: 72 (22%), median Glasgow score = 13, median capillary glucose = 1.7 g/dl. Three hundred and six patients (93%) were transferred to the neurology department, 4 patients to the intensive care unit (4%), 14 patients were hospitalized in the emergency room. The average transfer time in hours: 2.3 hours. Thrombolysis has been done only in 28 patients (6,4%) although 121 patients were candidate for thrombolysis. The modified Rankin Scale score at 30 days : 0 to 2 was observed in 29,3% of the patients, 3 to 5 in 25,9%, and the mortality rate was 3,13%.

Conclusion:

For 409 ischemic strokes, 6,4% benefit from thrombolysis. Establishment of ideal emergency system and arrangement of stroke units including emergency physician, neurologist and radiologist are also awaited for better management and improvement of patients' outcome.

#19058 : Adjustment of Early Warning Score by clinical assessment to improve detection of acute deterioration in hospitalized patients, a feasibility study**Authors:**

Pernille B. Nielsen (1), Martin Schultz (1), Caroline Langkjaer (2), Niels Egholm Pedersen (3), Anne Marie Kodal (4), Michael Dan Arvig (5), Christian S. Meyhoff (6), Bibi Hølge-Hazelton (7), Morten Bestle (4), Gitte Bunkenborg (8), Anne Lippert (9), Ove Andersen (10), Lars Simon Rasmussen (11), Kasper K. Iversen (12)

1. Dept. of Cardiology, Herlev and Gentofte Hospital, University of Copenhagen, Copenhagen, DENMARK
2. Dept. of Emergency Medicine, Nordsjaellands Hospital, University of Copenhagen, Hilleroed, DENMARK
3. Dept. of Anaesthesia, Center of Cancer and Organ diseases, Rigshospitalet, University of Copenhagen, Copenhagen, DENMARK
4. Dept. of Anaesthesiology, Nordsjaellands Hospital, University of Copenhagen, Hilleroed, DENMARK
5. Dept. of Emergency Medicine, Slagelse Hospital, University of Copenhagen, Slagelse, DENMARK
6. Dept. of Anaesthesiology, Bispebjerg og Frederiksberg Hospital, University of Copenhagen, Copenhagen, DENMARK
7. Research Centre, Zealand University Hospital, Roskilde, DENMARK
8. Dept. of Clinical Research, Holbaek Sygehus, University of Copenhagen, Holbaek, DENMARK
9. , Copenhagen Academy for Medical Education and Simulation, Copenhagen, DENMARK
10. Clinical Research Centre, Amager and Hvidovre Hospital, University of Copenhagen, Copenhagen, DENMARK
11. Dept. of Anaesthesia, Center of Head and Orthopedics, Rigshospitalet, University of Copenhagen, Copenhagen, DENMARK
12. Dept. of Cardiology, Herlev and Gentofte Hospital, University of Copenhagen, Copenhagen, DENMARK

Keywords: Early Warning Score; Rapid Response Systems; Clinical deterioration patient; vital signs; Risk assessment.

Abstract :

Background: Serious Adverse Events in hospitalized patients, such as unanticipated admission to Intensive Care Unit and cardiac arrest, are often preceded by deteriorating vital signs. Early Warning Scores (EWS) are used to allow detection of deterioration. EWS systems is implemented based on the strong association between vital sign abnormalities and poor outcomes shown in several retrospective studies. Only few studies have examined the clinical impact of EWS.

Individual Early Warning Score (I-EWS) is a newly developed track and trigger system where the assessment of vital signs by EWS is combined with a clinical assessment of the patient. This combination has in a previous randomized study improved triage of acutely admitted patients. Prior to comparing I-EWS to the already implemented National Early Warning Score (NEWS) in a prospective cluster-randomized crossover multicenter study, a feasibility study was performed. The aim was to test the use of I-EWS in a clinical setting and to explore the nursing staff's experience with I-EWS.

Methods: We performed a feasibility study of the implementation of I-EWS. I-EWS is integrated as a mandatory part of the electronic health care journal. Vital signs are registered, and an aggregated score calculated. Nursing staff is asked to revise the score based on their clinical assessment. The score can be adjusted with a maximum of -4 or +6 points or kept unchanged if the score matches the patient's clinical presentation. We recorded the number of I-EWS scores and the proportion of up- and down adjustments of the scores. A questionnaire was sent electronically to the staff subsequently to assess the level of information about I-EWS and the applicability of I-EWS. As well as to assess the nursing staff's perception of I-EWS as a track and trigger system. Data was collected at Herlev and Gentofte Hospital, a 949-bed University Hospital in the Capital Region of Denmark. Eight medical and surgical wards with a total of 250 beds used the I-EWS for a 2-week period in June 2018. Ambassadors from every ward, participated in an introduction course prior to initiation of the study. The Ambassadors introduced their colleagues to I-EWS.

Results: We recorded 5669 observations during the study period. I-EWS was used in 4585 (80.9 %) of the observations by the end of the second week. Of these scores 876 (19.1 %) were downgraded and 116 (2.6 %) were upgraded. Eighty-one of the 181 questionnaires (45%) were returned and 65.4% were very satisfied/satisfied with the level of information and 16 % answered neither nor. 80.3 % found the registration of I-EWS easy. Less than 6.7 % found no clinical relevance of I-EWS.

Conclusions: The possibility to adjust EWS was feasible and well received among hospital staff. The effect of I-EWS being tested in an ongoing multicenter study that is ongoing.

Trial Registration / Funding Information (only) :

The feasibility study was not registered, but the following clinical multicentre study is registered at clinicaltrials.gov NCT03690128. The study has received grants from the following: Herlev and Gentofte University Hospital The Foundation of Director Kurt Boennelycke and wife Ms. Grethe Boennelyckes The Gangsted foundation Candys Foundation The Research Council of the Capital Region of Denmark

#19059 : Utility of s-tryptase in Emergency Department patients with possible anaphylaxis.**Authors:**

Karolina Hansen (1), Hjalti Mar Bjornsson (2), Maria I Gunnbjornsdottir (3)

1. , University of Iceland, Reykjavik, ICELAND

2. Department of Emergency Medicine, Landspítali-University Hospital, Reykjavik, ICELAND

3. Department of allergy and immunology, Landspítali-University Hospital, Reykjavik, ICELAND

Keywords: Anaphylaxis, Tryptase

Abstract :

Background: Diagnosing anaphylaxis is straight forward in typical cases but can be challenging if the presentation is atypical. Generally it requires that patients have acute symptoms from more than one of the following systems; skin or mucosa, respiratory, cardiovascular or gastrointestinal. In addition to clinical diagnosis it has been shown that in patients with vague or atypical symptoms considered possibly due to an acute allergic reaction, evaluating s-tryptase can give additional diagnostic information, ideally if done within 30-180 min from onset of symptoms. Measuring s-tryptase also has the potential to diagnose mastocytosis, a rare but probably underdiagnosed condition of mast cell proliferation.

In our emergency department (ED), staff has been educated since 2011 on obtaining a s-tryptase level in cases where a patient could possibly be having an acute allergic reaction but a definitive diagnosis cannot be made based on clinical evaluation. Further evaluation by an allergist during an outpatient follow up is also recommended. The aim of this study was to assess how useful obtaining a s-tryptase level was on the work up of patients with possible anaphylaxis in the ED.

Methods: With institutional review board approval, all cases where a s-tryptase level was obtained from ED patients during the period from 2011-2018 were retrospectively reviewed. A database was collected including information on patient demographics, presenting symptoms and signs, treatment given, diagnosis, s-tryptase level and follow up.

Results: During the study period a total of 214 patients in the ED had s-tryptase measured. Females were 131 (61.2%) and average age 40.6 years (range 11-88). When evaluating patients, 60 (28.0%) of patients had only symptoms from one organ system, 70(32.7%) from two, 55(25.7%) from three and 26(12.1%) of the patients had symptoms from four organ systems. Three patients (1.4%) did not have symptoms from any of the four target organ systems. Of the patients, 86.4% had skin or mucosal symptoms, 47.7% cardiovascular symptoms, 49.5% respiratory symptoms and 36.0% had gastrointestinal symptoms. Blood was drawn for s-tryptase analysis within the recommended time frame in 133(62.1%) of the cases. Serum tryptase was elevated ($>12\mu\text{g/l}$) in 36 (16.8%) cases.

Of the 214 cases, 126 returned for further evaluation by an allergist and 65 (51.6%) of those were considered to have had an episode of anaphylaxis.

When evaluating the cases where blood samples for s-tryptase analysis had been collected within the recommended time frame of 30-180 minutes and returned for further evaluation by an allergist, the sensitivity of s-tryptase to diagnose anaphylaxis was 40,91% (95% CI 26,34% - 56,75%) and specificity 96,30% (95% CI 81,03% - 99,91%). No case of mastocytosis was identified in the patient cohort.

Discussion and conclusions: Obtaining a s-tryptase level on ED patients with possible anaphylaxis is specific but not sensitive in diagnosing atypical cases of anaphylaxis. No cases of mastocytosis were identified in the patient cohort suggesting that mastocytosis is uncommon among ED patients in our community.

#19060 : Are we providing appropriate advice to patients discharged post head injury?**Authors:**

Christopher Kelly (1)

1. NHS, NHS, Glasgow, UK

Keywords: Concussion, driving, head injury,

Abstract :

After a departmental teaching session it was identified that there was a gap in knowledge, among various members of staff across a range of grades, in regards to the appropriate advice to give patients who had presented to the emergency department with a head injury. In particular on the issue of driving after a head injury. A study carried out in 2010 by Headway showed 35% of EDs in the UK failed to give out advice on post concussion syndrome. Given around 1 million people present to ED with a head injury each year in the UK this would result in a significant number not receiving adequate medical advice; this could potentially lead to further accidents and injuries or really in a patient driving while uninsured. While our department has a post head injury leaflet to give to patients this leaflet contains no advice regarding driving.

Our emergency department is split across two sites at District general hospitals in the West of Scotland caring for both adult and paediatric presentations.

A search of electronic records was carried out for all patients presenting to the ED over the course of one week in December 2018 using the diagnostic codes for head injury, head wound and concussion. The notes were reviewed looking for evidence that the patient had been advised not to drive if they had persistent symptoms of a head injury and whether they received the ED's written advice on head injury.

This showed that no patient had been advised not to drive while they had ongoing symptoms of a concussion. However almost every patient had received a head injury leaflet.

The intervention was to update the leaflet with appropriate advice on driving after a head injury and to alter the head injury proforma to include driving advice in the discharge checklist. Members of staff in the department were provided with teaching and informed of the updated leaflet.

The same search was carried out following the teaching for a one week period in May. This demonstrated that > 80% of patients now received adequate advice.

Ensuring we give our patients the best and most accurate advice for management of post concussion syndrome is vital to empower them to make the best choices for their health and wellbeing.

Trial Registration / Funding Information (only) :

N/A

#19061 : Early lactate clearance and intra- hospital mortality in patients admitted in the emergency department**Authors:**

siwar jerbi (1), chiraz ben slimene (2), sana tabib (1), ines chermiti (1), syrine keskes (1), sawsen chiboub (1), najla elheni (3), Sami Souissi (1), Hanan Ghazali (1)

1. emergency department, regional hospital of ben arous, ben arous, TUNISIA
2. urgence-SMUR hôpital régional Ben arous, hôpital régional ben arous, ben arous, TUNISIA
3. , regional hospital of ben arous, ben arous, TUNISIA

Keywords: lactate, clearance, mortality

Abstract :

Introduction: Lactate clearance (LC) is defined as the reduction of lactate concentrations with interventional strategies. It has been demonstrated that patients with rapid LC were more likely to survive than those with slow LC. Many studies demonstrated the use of LC as a useful biomarker in the prediction of mortality among patients with severe sepsis or septic shock. However, these results are conflicting in the other causes of mortality.

Objective: To explore the diagnostic accuracy of lactate clearance in predicting mortality among patients admitted in the intensive care unit (ICU) of the emergency department (ED).

Methods: A prospective monocentric study conducted between January 2015 and Mars 2019. Inclusion of patients older than 18 years admitted in the intensive care unit (ICU) of ED with systematic measurement of blood lactate level. Serial lactate levels in ED admission and 6 hours later were measured. Lactate clearance, percent decrease in lactate level in 6 h $((\text{lactate admission} - \text{lactate 6 hours}) \times 100 / \text{lactate admission})$ was calculated. The main outcome measure was intra-hospital mortality.

Results: Inclusion of 354 patients. Mean age= 58 ± 19 years. Sex-ratio=1.44. Lactate clearance was measured in 97 patients. The intra hospital mortality was 18.3 %. Survivors compared with non survivors had a median lactate clearance of 47 [20, 71] vs. 31 [0, 53] respectively ($p=0.02$). Based on Area Under the Curve in receiver operating characteristic analysis, lactate clearance have a significant inverse relationship with short-term mortality (0.61, 95% CI [0.55 to 0.80], $p=0.02$), with a cut-off at 20%.

Patients with a lactate clearance $<20\%$ relative to patients with a lactate clearance $>20\%$, had a higher short-term mortality rate ($p = 0.01$). The main etiology leading to in hospital mortality was acute respiratory failure (59 vs. 31%, $p=0.01$). For the other etiologies such us toxic, septic, cardiac or neurological disease the mortality rate was low.

Conclusion: Lactate clearance appears to correlate with short-term survival among critically ill patients. Lactate clearance could serve as an efficient tool for mortality risk-stratification and could potentially provide critical information about response to treatment.

#19062 : The sum of st segment depression and severity of coronary artery disease in non-st segment elevation acute coronary syndrome**Authors:**

hela ben turkia (1), syrine keskes (2), wided bahria (2), ines chermiti (2), mahbouba chkir (2), Sami Souissi (2), Hanan Ghazali (2), jamila Habli (3), souad chkir (3)

1. urgence-SMUR hôpital régional Ben arous, hôpital régional ben arous, ben arous, TUNISIA

2. emergency department, regional hospital of ben arous, ben arous, TUNISIA

3. cardiology department, regional hospital of ben arous, ben arous, TUNISIA

Keywords: st segment depression, sum, prognosis

Abstract :

Background: The electrocardiogram (ECG) remains central in the risk stratification of non ST-segment elevation acute coronary syndrome (NSTEMI). The ST segment depression appears to be the most predictive marker of mortality at day 30 and at one year. Recently, many studies had demonstrated that the sum of ST-segment depression provides much more information than the simple qualitative assessment of ST-segment depression > 0.5 mm.

Objective: To find out the association between the sum of magnitude of ST segment depression and angiographic severity in NSTEMI patients.

Methods: A prospective observational study was conducted over six years. Patients with the diagnosis of NSTEMI and an ST segment depression > 0.5 millimeters (mm) in at least one lead were included. ST segment depression was measured and the cumulative sum of the ST-segment depression, in mm was calculated. The location, the number of leads with ST segment depression was also measured in all ECG leads. The prognosis was based on the evaluation of major adverse cardiac event (MACE) at six months.

Angiographic severity was assessed by a validated vessel score. The sum of the magnitude of ST segment depression was correlated with angiographic severity of coronary artery disease.

Results: Inclusion of 287 patients. Mean age was 62 ± 11 years. Sex ratio = 1.7. Comorbidities (%): hypertension (59), diabetes (45), dyslipidemia (33), coronary artery disease (28). Mean sum of ST segment depression was 5 [1,28].

Mean delay of door to balloon = 4 hours [1, 72]. Twenty seven percent of patients developed a MACE. In multivariate analysis a cumulative sum of ST-segment depression > 7 mm (adjusted OR = 5.34, $p < 0.001$, 95% CI [2.71 to 10.51]) was independently associated with MACE at six months.

Positive correlation was found between the sum of ST segment depression, the number of leads with ST segment depression and the severity of coronary artery disease with ($r=0.352$; $p < 0.0,1$) and ($r= 0.361$; $p < 0.001$) respectively.

Conclusion: This study shows that the sum of ST segment depression in all ECG leads is a powerful predictor of severity of coronary artery disease.

#19063 : Pleuritic chest pain. Diagnosis of pulmonary embolism with lung ultrasound. US Wells Project

Authors:

cosimo Caviglioli (1), Francesca Romana Ermini (2), Chiara Gigli (1), Angelika Reissig (3), Alessandro Becucci (1), Peiman Nazerian (1), Giuliano De Stefano (4), Giovanni Volpicelli (5), Stefano Grifoni (6)

1. Emergency Department, Careggi University Hospital, Firenze, Florence, ITALY
2. Emergency Department, Careggi University Hospital, Firenze, florence, ITALY
3. Emergency Department, University Hospital Friedrich Schiller University, Jena, GERMANY
4. Internal Medicine Department, Federico II University Hospital, Naples, ITALY
5. Emergency Department, San Luigi Gonzaga University, Turin, ITALY
6. Emergency Department, Careggi University Hospital, Florence, ITALY

Keywords: chest pain, pulmonary embolism, ultrasound

Abstract :**Background**

Pleuritic chest pain is a common presentation in ED and it could sometimes be related to pleural irritation due to pulmonary infarct in pulmonary embolism (PE). Lung ultrasound (LUS) can detect pulmonary infarct, however its diagnostic accuracy for PE in a selected population presenting with pleuritic chest pain is unknown. The aim of the study is to analyze the performance of LUS in the diagnosis of PE in patients complaining of pleuritic chest pain.

Methods

We combined individual patient data from three prospective cohort studies (one monocentric and two multicentric) involving patients evaluated for suspected PE in which LUS was performed at presentation. We extrapolated data regarding patients with and without pleuritic pain, and re-assessed the performance of LUS in the two populations for comparison.

Results

Among the 872 patients suspected of PE considered in the three studies, 217 (24.9%) presented with pleuritic chest pain and 655 (75.1%) without. Overall, 279 patients (32%) were diagnosed with PE. Pooled sensitivity of LUS in patients with and without pleuritic pain was respectively 81.5% (95%CI 70-90.1%) and 59.3% (95%CI 38.8-77.6%) ($p < 0.01$). Specificity of LUS was similar in the two groups, respectively 95.4% (95%CI 90.7-98.1%) and 94.8% (95%CI 92.3-97.7%) ($p > 0.05$). In patients with pleuritic pain, a diagnostic strategy combining Wells score with LUS performed better in terms of sensitivity (93%, 95%CI 80.9-98.5% vs 90.7%, 95%CI 77.9-97.4%), negative predictive value (96.2%, 95%CI 89.6-98.7% vs 93.3%, 95%CI 84.4-97.3%) and efficiency (56.7%, 95%CI 48.5-64.9% vs 42.5%, 95%CI 34.3-50.7%), than the conventional strategy based on Wells score and d-dimer.

Conclusion

In a population of patients suspected for PE, LUS for PE showed better sensitivity when applied to the subgroup complaining of pleuritic chest pain. In these patients, a diagnostic strategy based on Wells score and LUS performs better to exclude PE than the conventional rule based on clinical scoring and d-dimer.

#19064 : Time from Emergency Medical Service contact to neurosurgical admission for patients with spontaneous subarachnoid haemorrhage – a retrospective cohort study**Authors:**

Asger Sonne (1), Jesper B Andersen (2), Vagn Eskesen (2), Frans B Waldorff (3), Freddy Lippert (4), Nicolai Lohse (5), Lars S Rasmussen (1)

1. Department of Anaesthesia, Rigshospitalet, University of Copenhagen, Copenhagen, DENMARK
2. Department of Neurosurgery, Rigshospitalet, University of Copenhagen, Copenhagen, DENMARK
3. Department of Public Health, University of Southern Denmark, Odense, DENMARK
4. Emergency Medical Services Copenhagen, University of Copenhagen, Copenhagen, DENMARK
5. Department of Anaesthesiology and Intensive Care, Hillerød Hospital, University of Copenhagen, Hillerød, DENMARK

Keywords: Subarachnoid haemorrhage, symptoms, telephone visitation, prehospital, triage, delay, transfer

Abstract :

Background: Longer time to neurosurgical admission may increase mortality and morbidity for patients with spontaneous subarachnoid haemorrhage (sSAH).

We aimed to determine the time from first telephone contact to the Emergency Medical Services (EMS) in Copenhagen to admission to a neurosurgical department. Secondly, to determine if the absence of the textbook symptom “thunderclap headache” was a predictor for late admission.

Methods: This retrospective cohort study was performed in March 2019. From the Danish National Patient Register data were extracted on all patients aged 18 years or older, admitted to any hospital in the Capital Region of Denmark between May 1, 2011 and December 31, 2014 with a primary discharge diagnosis of sSAH. Medical record review was performed to verify diagnoses. Time of the emergency telephone call was extracted from the EMS-database. Predictors for late admission to the neurosurgical department were analyzed in a logistic regression model adjusting for age and sex. Time interval was reported as median with inter-quartile range (IQR) and range. Proportions and odds ratios (OR) were reported with 95% confidence intervals (CI). Late admission was defined as being above the median value.

Results: Of 262 patients admitted with sSAH, no information was found on admission pattern in 96 patients, 34 patients had been admitted via general practitioners, and one was excluded due to a non-transparent pattern of admission. Thus, 131 patients had called either the European emergency number 1-1-2 or the non-urgent medical help line in Copenhagen both operated by EMS Copenhagen.

Data on initial hospital arrival were available for 119 patients and information about neurosurgical admission was available for 124 patients. Data on symptoms at the time of contacting the emergency telephone line was available for the period May 1, 2011 thru December 31, 2013 for 98 of the 102 patients admitted through the EMS.

Median time from EMS contact to neurosurgical admission was 207.5 minutes (IQR 147-305, 37-5,634). Eighty-six (72.3%, CI: 63.3-80.1) patients were initially admitted to a hospital without neurosurgical facilities and secondarily transferred. For these patients, the median time from arrival at the referring hospital to neurosurgical admission was 186.5 minutes (IQR 128-328). In comparison, in a hospital with neurosurgical facilities, the corresponding time interval between arrival to the hospital and admission to the neurosurgical department was 85.0 minutes (IQR 73-111). Seventeen (17.4%, CI: 10.4-26.3) patients had presented to the emergency telephone line with thunderclap headache. The crude OR for late admission in the absence of thunderclap headache was 5.1 (CI: 1.3-19.3). Adjusting for age and sex, the OR was 4.66 (CI: 1.2-18.1), $p=0.0259$.

Discussion: We found a median time from initial EMS contact to neurosurgical admission of 207.5 minutes in patients with spontaneous subarachnoid haemorrhage. The absence of thunderclap headache was a predictor for late admission.

Trial Registration / Funding Information (only) :

ClinicalTrials.gov ID: NCT03786068. Ethics committee approval was not needed. Funding was received from the Danish foundation Trygfonden.

#19065 : Quality of stroke patient documentation

Authors:

Aku Paavola (1), Ville Hällberg (2), Markku Grönroos (3), Teemu Koivistoinen (3), Ari Palomäki (4)

1. Resident of Emergency Medicine, Kanta-Häme Central Hospital, Hämeenlinna, FINLAND
2. Kanta-Häme Central Hospital, Specialist of Emergency Medicine and Internal Medicine, Hämeenlinna, FINLAND
3. Kanta-Häme Central Hospital, Specialist of Emergency Medicine, Hämeenlinna, FINLAND
4. Tampere University, Kanta-Häme Central Hospital, Professor of Emergency Medicine, Hämeenlinna, FINLAND

Keywords: Stroke, documentation, quality

Abstract :Introduction

In 2013, Kanta-Häme Central Hospital (KHCH) introduced an emergency physician driven treatment of acute ischemic stroke (AIS). This reorganization has been shown to be both fast and effective. In the present study we wanted to assess the quality of documentation of stroke patients.

Methods

KHCH is a secondary care hospital in Finland with a catchment population of 175 000. Data of AIS patients including possible intravenous thrombolysis is transferred to electric patient record and further to local and national databases. We reviewed all cases of AIS stored in the electric patient records in 2018. Then we assessed the quality of documentation of diagnoses and procedural codes.

Results

We had totally 420 stroke patients in 2018. Of them, 84% were AIS and 16% hemorrhages. 12% of the AIS patients were treated by tissue plasminogen activator.

We found, that in more than half of the cases, there were some inadequacies in documentations stored in the databases. Inadequacies consisted of missing diagnosis or procedural codes being only documented on medical report. In some cases, working diagnosis has remained as the final one or non-acute ischemic stroke has been documented as AIS. In general, there were more problems with the documentation of correct procedural code than that of definitive diagnosis.

Discussion

Adequate documentation provides important and comparable data for scientific community and helps to put both national and international guidelines into practice. To further improve the documentation, we would recommend further training, national incentives and systematic control of documentation.

It is worth to note that our earlier publications were based on the verified individual patient data, not the information found in sole database.

Conclusion

Even though treatment of AIS in KHCH is both fast and effective, more effort must be put into accurate documentation of diagnosis and procedural codes

#19066 : CPR IN RARE CASES

Authors:

Moga Elisabeta (1), Ruian Raluca (2), Sântimbreanu George-Mircea (3), Nitescu Cristian (4), Ganea Ramona (5), Boldis Alexandra (6), Ivan Sergiu (7)

1. Medical Assistant, Emergency Department, Blaj, ROMANIA
2. student at Faculty of Medicine, volunteer at Emergency Department , Blaj, ROMANIA
3. MD, Emergency Physician, Emergency Department, Blaj, ROMANIA
4. Medical Asistant , Emergency Department, Blaj, ROMANIA
5. Faculty of Medicine, volunteer at Emergency Department, Blaj, ROMANIA
6. MD, Anesthesia and Intensive Care Physician, Blaj, Blaj, ROMANIA
7. student at Faculty of Medicine, volunteer at Emergency Department, Blaj, ROMANIA

Keywords: cardio-pulmonary resuscitation, Marfan syndrome, cardiac arrest, pregnancy

Abstract :**Background:**

Marfan Syndrome is a rare, connective tissue disease, autosomal dominant transmission due to mutations in the FBN1 gene on chromosome 15, essential for the biogenesis and maintenance of elastic fibers that are all over the body, particularly abundant in the aorta, ligaments and the ciliary area of the eye.

The name of the syndrome is given by the French pediatrician Antoine Marfan, who first described it in 1899. The syndrome has an incidence of 1 in 5,000 individuals, affects men and women equally, all races, the mutation does not have a particular geographical distribution. There is 50% risk that a person with Marfan syndrome will transmit the specific mutation to his offspring.

Case report:

We present the case of a 21 year old female patient brought by her mother in emergency department with her own means for loss of consciousness. When taking an unconscious patient, do not breathe ,label the case of cardiac arrest and start the resuscitation maneuvers according to the CPR protocol.

From the mother's history we find that the current state was preceded by dyspnea, headache, dizziness, fatigue, severe chest pain.

Medical history reveals Marfan's disease, prolapse of the mitral valve with mitral regurgitation high blood pressure, myopia, a fetal birth at 7 months since 3 years ago. The patience following treatment with beta blocker and conversion enzyme inhibitors.

As a heredo-collaterals, the father died suddenly two years ago at the age of 40.

Clinical examination: crowded teeth, sternum excavated, high waist, arachnodactylum, flat leg, enlarged abdomen.

Paraclinical examination: respiratory acidosis (ph = 7.028, pco2 = 115.6mmHg, pO2 = 32mmHg, BE = 19mmol / L), ctHb = 8.9, Glycemia = 92mg, cardiac markers without significant alterations.

The ultrasound examines aortic dilatation root greater than 40mm, cardiomegaly and the 20th week pregnancy, the biparietal fetal perimeter of 19 cm, 2GP1.

The presumptive diagnosis of the cause of cardiopulmonary arrest was dissection or aortic rupture based on medical history ,clinical and paraclinical data and pregnancy.

During resuscitation, the respiratory and circulatory function was not resumed, the medical team declaring death after 60 minutes of resuscitation.

Conclusions:

The life expectancy of patients with Marfan syndrome that is evaluated periodically and follows appropriate medical and surgical guidelines has increased over 70 years.

In the absence of a documented medical history, medical staff risk not recognizing Marfan syndrome.

The most common causes of cardio-respiratory arrest are aneurysm, rupture and aortic dissection

Pregnancy increases by 50% the risk of cardio-respiratory arrest.

Most cardio-respiratory arrest come at home

The high pressure of the intraresuscitatory case on the team, the desire to achieve CPR of quality has led to the creation of a good practice in resuscitation, the development of a resuscitation routine in rare cases and developing an informatic medical system at the hospital level.

#19067 : Diagnostic accuracy of conventional chest radiography for acute aortic syndromes: results from ADVISED prospective multicenter study**Authors:**

alessandro becucci (1), peiman nazerian (1), Simona Veglia (2), edoardo cavigli (3), Soeiro Alexandre de Matos (4), Christian Mueller (5), Leidel Bernd A. (6), cosimo caviglioli (1), emanuele pivetta (7), giovanni albano (1), stefano grifoni (8)

1. Department of Emergency Medicine, , Careggi University Hospital, Firenze,, firenze, ITALY
2. Radiology Department, , A.O.U. Città della Salute e della Scienza, Molinette Hospital, Torino, Italy, torino, ITALY
3. Radiology Department, , Careggi University Hospital, Firenze,, firenze, ITALY
4. Emergency Care Unit, Heart Institute,, University of São Paulo, São Paulo, Brazil, sao paulo, BRAZIL
5. Cardiovascular Research Institute Basel (CRIB) and department of cardiology, , University Hospital Basel, University of Basel, Switzerland, basel, SWITZERLAND
6. Department of Emergency Medicine,, Campus Benjamin Franklin, Charité – Universitätsmedizin, Berlin, Germany, berlin, GERMANY
7. S.C.U. Medicina d'Urgenza, Department of Emergency Medicine, , A.O.U. Città della Salute e della Scienza, Molinette Hospital, Torino, Italy; , torino, ITALY
8. Department of Emergency Medicine,, Careggi University Hospital, Firenze,, firenze, ITALY

Keywords: acute aortic syndromes, chest radiography

Abstract :**ABSTRACT**

Purpose. Guidelines recommend chest radiography (CR) in the workup of suspected acute aortic syndromes (AAS), if the pre-test clinical probability is low. However, the diagnostic impact of CR integration for rule-in and rule-out of AAS is unknown.

Methods. We performed a secondary analysis of the ADvISED multicenter study. Emergency Department (ED) outpatients were eligible if AAS was clinically suspected. Clinical probability was defined with the aortic dissection detection risk score (ADD-RS). CR was evaluated blindly by a radiologist, who judged on mediastinum enlargement (EM) and other signs.

Results. 1030 patients were analyzed, including 48 (4.7%) with AAS. The sensitivity and specificity of CR (any sign) were 54.2% (95%CI 39.2-68.6%) and 92.4% (95%CI 90.5-93.9%), with moderate inter-observer agreement between attending physician and radiologist for EM ($k=0.44$). CR integration increased the diagnostic accuracy over ADD-RS (AUC 0.87 vs 0.66; $P<0.001$). The sensitivity and specificity of a CR-integrated strategy were 68.8% (95%CI 53.6-80.9) and 76.5% (95%CI 73.7-79.1). CR-integrated rule-in (ADD-RS>1 or CR-positive) applied to 264 vs 130 patients with ADD-RS>1 alone, including 15 with AAS and 119 false positives. CR-integrated rule-out (ADD-RS≤1 and CR-negative) applied to 766 (74.4%) patients, including 15 with AAS (31.3% of cases).

Conclusions. In this observational study, CR integration with clinical probability assessment showed modest rule-in efficiency and insufficient sensitivity for conclusive rule-out. The pragmatic impact of CR on the workup of AAS appears questionable.

Trial Registration / Funding Information (only) :

Clinical Trial Registration. <https://www.clinicaltrials.gov>. Unique identifier: NCT02086136.

#19069 : Control of diabetic patients in Emergency Department

Authors:

Carmen Chanca (1), Blanca Balonga Tomas (1), Maria de la O Garcia Sánchez (1), Carmen Navarro Bustos (1), Fernando Oltra Hostalet (1), Jose Luis Galvez Sanroman (1)

1. Servicio de Urgencias , Hospital V Macarena. SAS, Sevilla, SPAIN

Keywords: Diabetes, Emergency

Abstract :

Control of Diabetic Patients in Emergency Department

Introduction:

Diabetes mellitus for many years has been treated by professionals of Emergency Department (ED) as a secondary issue, 30-40% of patients who consult in the emergency room are diabetic and about 22-26% of adults hospitalized are diabetics. Despite not being the glycemic alteration, the main reason for consultation of diabetic patients in ED, its detection, treatment and control, are markers of severity. If we add to this the high prevalence and the enormous current therapeutic arsenal, it is imperative to update and manage all the information at our disposal for a better management of the diabetic patient.

Objective:

Describe the characteristics, management and resolution of the diabetic patient in an emergency department

Material and methods:

A descriptive observational study was carried out in the emergency department of the Virgen Macarena University Hospital from June to December 2018, in patients arriving on random days between 12 and 2 pm. Diabetic patients were collected and those in whom it was observed in the altered glycemia triage consultation, determining the glycemia at the time, at two hours and at 4 hours of be stay in the waiting room. Clinical-demographic characteristics, causes of admission, management and final destination of the patient were also determined.

Results

Data were collected from 53 patients with a median age of 75 years (96-34), 50% being men and 49% women. The BMtest in triage was on average 159 mg / dl with a maximum peak of 448 mg / dl and a minimum of 84 mg / dl, with a 35,84% of them above 180 mg / dl. In the controls performed at 2 hours of emergency room stay, these values decrease to 123 mg / dl of median with maximum peak of 304 mg / dl and 65 mg / dl, something similar we find if the patient stays at 4 hours in the emergency room. The 26% of our patients required admission to observation, with 69% of them being discharged from consultations, in one case direct admission to the ward was made. 28% of them presented associated infectious symptoms, respiratory infections being the most frequent with 11%. In only 13.20% some type of anti-diabetic treatment was established in consultations and it does not reach 10% of patients in those cases in which home treatment is modified. We found 2 diabetic debuts that were resolved and treated.

Conclusions

Emergency services are a fundamental point for the detection of poorly controlled diabetic patients as well as for their initial diagnosis, since they are often the patient's first contact with the health care system. The control of decompensated DM, in patients who do not attend for it, is very deficient. We must be more up to date in the management of these patients, each time with more complex treatments, given that they also cause a high percentage of urgent admissions, and must modify the treatments that require it.

#19070 : Electrocardiograph in General Practice, National Tunisian epidemiological study, including 100 general practitioners in 2018.

Authors:

Ahmed Guesmi (1), Dorra Loghmari (2), Meriem Ben abdellaziz (3), Rabeb Mbarek (4), Farrouk Douma (3), Mounir Naija (3), Naoufel Chebili (3)

1. service d'aide médicale urgente (SAMU) 03 CHU sahloul sousse, CHU sahloul sousse, SOUSSE, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA

Keywords: Electrocardiograph,general practitioners,legal

Abstract :**Electrocardiograph in General Practice, National Tunisian epidemiological study, including 100 general practitioners in 2018**

A Guesmi,D Loghmari,M Ben Abdelaziz, R Mbarek, F Douma,M Naija,N Chebili.

BACKGROUND: Electrocardiography is not subject to any legal requirement in Tunisian medical practice, only an obligation of means is dependent on responsibility of the practitioner. With the advent of many recommendations, the use of the electrocardiograph is growing because of the increased incidence of cardiovascular disease.

Aims: The aims of this work were:

- To determine the equipment rate of electrocardiograph medical offices
- To define factors limiting the electrocardiography provision in General Practice.

METHODS: This work was a descriptive epidemiological study including General Practitioners who filled in on-line survey (<https://www.askabox.fr/>), between 29 June 2018 and 31 August 2018. Different variables were studied such as demographics Practitioners criteria's, the rate of ownership electrocardiograph, the factors limiting its ownership.

RESULTS: 100 general practitioners were included in this study. 76% were equipped. The main limiting factor for 50% of non-equipped doctors was a financial cause and profitability. Then, training with a doubt in their ability to interpret an electrocardiogram and the fear of legal proceedings for wrongful interpretation (42%, n=10). Factors associated with the no

possession of an electrocardiograph was rural practices ($p < 0.001$), and existence of nearby cardiologist ($p < 0.001$).

CONCLUSION: The main factors limiting the provision of electrocardiograph in Tunisian General Practices are financial causes and the lack of training in the interpretation of electrocardiogram that beget fear of legal proceedings for wrongful interpretation.

Trial Registration / Funding Information (only) :

no funding

#19072 : The effectiveness of teaching limited compression ultrasound for diagnosing lower extremity DVT in primary health care**Authors:**

Ossi Hannula (1), Harri Hyppölä (2), Suvi Rautiainen (2), Ritva Vanninen (3)

1. MD, University of Eastern Finland, Kuopio, FINLAND

2. PhD, University of Eastern Finland, Kuopio, FINLAND

3. PhD, professor, chief radiologist, Institute of Clinical Medicine, School of Medicine, University of Eastern Finland, Kuopio, FINLAND

Keywords: Pocus, DVT, point-of-care ultrasound, limited compression ultrasound, primary health care, ultrasonography

Abstract :

Background: According to current literature a limited compression ultrasound (LCUS) protocol is safe to diagnose or exclude lower extremity deep venous thrombosis (DVT). It is a good option to a whole leg ultrasound performed by a radiologist especially in remote health care units where the availability of radiological services is limited and also in emergency department performed by emergency physician (EP).

Objective: To determine whether teaching LCUS to general practitioners (GP) reduces the number of patients with a suspected lower extremity DVT referred to a hospital for US examination safely.

Methods: During 2015-2016, a physician with 5 years of experience in diagnostic US (author Hannula) trained the GPs (n=13 working in Saarikka Primary Care Public Utility (catchment area 18.000 inhabitants) to use LCUS. The number of annual referrals due to a suspected DVT from Saarikka to the closest hospital were evaluated before and after training. The incidence of DVT was considered to be constant, thus the reduction of referrals was interpreted to happen because these patients were diagnosed and treated in primary health care without referring them to hospital. Safety was evaluated by examining all patients from Saarikka area who were diagnosed pulmonary embolism (PE) in nearest hospital during study years and following 3-month periods. Also patients referred to consultant radiologist were examined to find any possible false negative DVTs in LCUS.

Results: In 2014, the number of annual referrals due to a suspected DVT was 60. In 2017 the amount had reduced to 16 with a decrease of 73,3%. The incidence of referrals per 1000 person-years decreased from 3.21 to 0.89. (IRR 3.58, 95% CI 2.04 – 6.66, p<0.001). The annual numbers of PEs were 12 and 23 respectively. None of PE patients had a LCUS performed prior to diagnosis. There were 13 and 16 referrals to consulting radiologist respectively with no false negative DVTs found.

Conclusions: Teaching a LCUS protocol to GPs seems to effectively and safely reduce the number of referrals to hospital due to a suspected DVT.

Trial Registration / Funding Information (only) :

Ethical permission is obtained. Informed consent was not required by the ethical board.

#19073 : Prognostic value of neutrophil lymphocyte ratio in stroke disability assessment**Authors:**

amal baccari (1), lotfi boukadida (1), asma boukadida (2), Asma bouhoula (2), marwa talbi (2), asma zorgati (1), riadh boukef (1)

1. emergency department, sahloul university hospital, sousse, TUNISIA

2. emergency department of Sahloul, sahloul hospital, sousse, TUNISIA

Keywords: stroke_prognosis_assessment_ratio

Abstract :

Introduction :

Stroke is a major public health problem. It constitutes the second cause of death in the category of cardiovascular diseases. They are also the cause of dementia and depression in the elderly. The study of prognostic factors is interesting to organize the management of these patients and predict their prognosis regardless of the achievement or not of intravenous thrombolysis

OBJECTIVE :

The aim of our study is to evaluate the functional prognosis of stroke in patient alerted to receive intravenous alteplase at one year according to the neutrophil -lymphocyte ratio.

Methods :

We conducted a retrospective study involving patients with ischemic stroke admitted to the emergency department. these patients were assigned to receive intravenous alteplase . Data were collected from medical records. Follow-up was done at one year. A good prognosis was a score of 0 or 1 on the modified Rankin scale, on which scores range from 0 (no symptoms) to 6 (death). A bad prognosis was considered for patients with a rankin scale of 3 to 6 , at one year .

Results:

124 was enrolled in this study. The mean age of the population was 69 ± 11 years old . a female predominance was noticed with a sex ratio 42/82. 64 patients received intravenous alteplase. It was noted that the difference in the neutrophil lymphocyte ratio between the 2 groups , G1 good prognosis G2 poor prognosis at one year , is significant when considering the averages of this ratio (2.9 ± 2.15 VS 7.2 ± 7.6 ; $p=0.001$) ;

Conclusion:

We concluded that a low lymphocyte neutrophil ratio is an indicator of good functional prognosis at one year.

#19074 : An Evaluation of Procalcitonin, CRP and Lactate Levels of Critical Patients Admitted to Intensive Care Unit of Emergency Medicine Clinic through SOFA and APACHE-II Scores**Authors:**

dilek atik (1), başar cander (1), bensu bulut (1), hilmi kaya (1), ramiz yazıcı (1), ramazan güven (1)

1. emergency department, kanuni sultan suleyman research and training hospital, istanbul, TURKEY

Keywords: Procalcitonin, CRP, lactate, SOFA, APACHE-II, Critical Patients

Abstract :

Background:Critical patient is a term expressing the patients with higher rates of morbidity and mortality rates who need developed monitoring and treatment due to one or multiple organ or system failure. Different scoring systems such as APACHE-II and SOFA were developed for early detection and treatment planning of these patients because of higher morbidity and mortality rates. Laboratory parameters such as procalcitonin, CRP and lactate also support these scoring systems in terms of mortality and morbidity in recent studies. **Aims of the study:**The aim of the present study was to search the efficiency of procalcitonin, CRP and lactate parameters on mortality as biochemical markers with scoring systems during clinical practice in critical patients admitted in Intensive Care Unit. **Method:**The present study was conducted by review of demographic characteristics, procalcitonin, CRP and lactate levels as well as APACHE-II and SOFA scores of the patients in our emergency intensive care unit from patient files, retrospectively. As statistical analysis Spearman's rank correlation was used for non-parametric data whereas Pearson's correlation methods were used for parametric data. **Findings:**53 patients were enrolled into the present study. A correlation analysis was performed to detect whether a significant correlation exists between CRP, procalcitonin and lactate among laboratory parameters and APACHE-II and SOFA. A positive and weakly significant association was detected between APACHE-II and procalcitonin. Furthermore, a positive and moderately significant association was detected between SOFA and lactate as well as procalcitonin. **Discussion:**Prolongation of the life period and improved healthcare services caused a trend of increase in critical patients recently. Sensitive and specific scoring systems and laboratory tests are required to guide monitoring of treatment response in critical patients. In the present study, the value of prognosis-determining scores including APACHE-II and SOFA was compared in association with procalcitonin, CRP and lactate levels in terms of clinical progression and correlation. The association between lactate level and SOFA scoring was moderately significant and it was shown as an important factor on mortality. There is not any linearity between CRP levels and the scores. It was considered that procalcitonin presents a positive correlation with the scores; and it is a useful laboratory parameter for monitoring and treatment. **Conclusion:**In consideration of the importance of prompt treatment on mortality in critical patients, we believe that procalcitonin and lactate would provide an insight to further studies with larger data sets for prognosis determination. In addition, SOFA and APACHE-II can be updated with procalcitonin and lactate.

#19076 : Epidemiological and clinical characteristics of children victims of public road accidents**Authors:**

Elee sghaier (1), Sarra Chaouch (2), Dorra Loghmari (3), Sami Ben Ahmed (1), Ahmed Guesmi (4), Mounir Naija (1), Rabeb Mbarek (2), Naoufel Chebili (1)

1. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA
2. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA
3. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 CHU sahloul sousse, CHU sahloul sousse, SOUSSE, TUNISIA

Keywords: road accidents,children,epidemiology,pre-hospital

Abstract :**Epidemiological and clinical characteristics of children victims of public road accidents**

E Sghaier,S Chaouch,S Ben ahmed,A Guesmi,D Loghmari,M Naija,R Mbarek,N Chebili.

BACKGROUND:Despite the different action plans of road safety, road accidents remain a serious threat for health. Over 1.25 million people die each year on roads, which 186300 are kids.The prevalence of children victims of public road accidents had an obvious increase on summer 2018 .

Our goal was to review the pre-hospital clinical and epidemiological data and to evaluate the support of these victims by our mobile emergency care unit (MECU).

METHODS: This is a retrospective descriptive study enrolled in an Emergency Medical Assistance Service , about 42 children and infant cases (age under 14) victims of public road accidents.Data was collected over a period of 3 months from july1st 2018 to September 30th 2019 .

RESULTS: We collected 42 children victims of public road accidents supported by our Mobile Emergency Care Unit.A clear predominance masculine was noticed with a sex-ratio at 2.3 .The average age was $8,2 \pm 0,3$ years old. In 21 % of the cases, these kids were accompanied by members of their families along the accident. Speed excess was the major etiology of accidents in 87% of cases.The majority of cases were reported on Mondays (19%) followed by Saturdays (16%).The mean time of call to MECU intervention was 14 minutes. are the most frequent incidents was Isolated cranial trauma (61.5%) followed by abdominal injuries (37.2%). 37% of these victims required a pre-hospital respiratory support and catecholamine was administred in 12% of the cases.02 children died (that is 4.76 %) before their arrival in hospital structure. the pre-hospital team expressed difficulties in supporting children victims of public road accidents in more than third of the cases. They reported therapeutic and diagnosis problems.

CONCLUSION: The statistics of Emergency Medical Assistance Service over the period of summer 2018 shows an alarming increase of the number of children victims of public road accidents. We should motivate the set of urgent preventive measures which are controlling the speed excess and providing continuous training of the MECU team in pediatric traumatology.

Trial Registration / Funding Information (only) :

no funding

#19077 : Airways management in the emergency department: difficulties and adverse events according to physician experience**Authors:**

fatma Mejri (1), ihsen hnen (1), ines chermiti (1), emna ennouri (1), Mohamed Mguidich (1), amel ben garfa (2), Sami Souissi (1), Hanan Ghazali (1)

1. emergency department, regional hospital of ben arous, ben arous, TUNISIA
2. urgence-SMUR hôpital régional Ben arous, hôpital régional ben arous, ben arous, TUNISIA

Keywords: airway mangment, difficulties, physician experience

Abstract :

Introduction:

The tracheal intubation in the emergency department is unpredictable and needs essential skills to manage the airways of a critically ill patients.

Objective:

The aim of our study is to investigate the procedure of intubation and its complications according to the physician experience in the emergency department (ED).

Methods:

We conducted a prospective observational, monocentric study, involving adult endotracheal intubation over one month. Emergency physicians were divided according to their intubation experience into 3 groups: group (well experienced: emergency resident more than 3 years of exercise); group (moderate experienced: emergency resident between 1 and 2 years); group (low experienced: emergency resident less than one year). Intubation duration defined as the time elapsed between insertion and removal of the laryngoscope blade from the patient's mouth in minutes and per intubation. Hypoxemia defined as an oxyhemoglobin saturation less than 90% or if the attempt began with a saturation <90% with absolute decrease in saturation more than 10%.

Results:

Inclusion of 34 patients. Mean age 62 ± 19 years. Sex ratio= 1.6. Indications for intubation n (%): Neurological disorder 13(38); cardiac arrest 10 (29) and respiratory distress 8 (24).

Rapid sequence intubation was the first method attempted in 59% of patients, 9% needed a second rapid sequence intubation. Ethomidate was used in 59%, succinylcholine in 50% and ketamine in 3 % of cases.

Over the 34 intubations, 67 % were performed by group (moderate experienced n=23) and 35% by group (well experienced n=10). The comparative study of intubation performed with group (moderate experienced) versus (vs). Group (well experienced) found n (%) (p): attempt intubation number: first attempt 16(70) vs. 7(64) (NS); second attempt 3 (13) vs. 4(36) (0.03); more than two attempt 4 (17) vs. 0 (0.02); the need of a second operator 6 (23) vs. 1(9) (0.04); hypoxemia per intubation 6 (26) vs. 3(27) (NS); the need of Eichmann guide 10(43) vs. 3(27) (NS). The main intubation's complications were n (%) (p): hypotension 8(35) vs. 5(45) (NS), desaturation 4(17) vs. 2 (18) (NS) and cardiac arrest 11(48) vs. 8 (73)(0.04).

Conclusions: It's clear that the lack of experience in the emergency physician is associated with a labor procedure and high risqué of complications.

#19078 : An Evaluation on Procalcitonin/Albumin Values of Critical Patients Through SOFA and APACHE II Scores

Authors:

dilek atik (1), bařar cander (1), bensu bulut (1), hilmi kaya (1), ramiz yazıcı (1), ramazan güven (1)

1. emergency department, kanuni sultan suleyman research and training hospital, istanbul, TURKEY

Keywords: Procalcitonin/Albumin, Critical Patients, SOFA, APACHE II

Abstract :

Introduction:Critical patient is a term expressing the patients with higher rates of morbidity and mortality rates who need developed monitoring and treatment due to one or multiple organ or system failure. Different scoring systems such as APACHE-II and SOFA were developed for early detection and treatment planning of these patients. Laboratory parameters such as procalcitonin, CRP are used currently to guide and support these scores. **Methods:**The study was conducted in our Emergency Intensive Care Unit from patient files retrospectively. As Statistical Analysis, Spearman's rank correlation was used for non-parametric data whereas Pearson's correlation methods were used for parametric data. **Results:**A negative and moderately significant association was detected between SOFA and albumin. A positive and weakly significant association was detected between SOFA and Procalcitonin/Albumin ratio. Assesment of APACHE-II score as well as albumin, procalcitonin and procalcitonin/albumin ratio revealed a weakly positive association between APACHE-II and procalcitonin and procalcitonin/albumin ratio. A negative and moderately significant association was detected between APACHE-II and albumin. **Conclusion:**Considering the effect of early treatment on mortality in critical patients; albumin is an important parameter, procalcitonin and procalcitonin/albumin ratio are effective on mortality.

#19079 : The Efficacy of a Herbal Supplement in the Prevention of posttraumatic stress disorder (PHYTeS Study): randomized double-blind study**Authors:**

Fatma boukadida (1), lotfi boukadida (2), amal baccari (2), oussama acheche (3), kaies zaydi (4), kaies mansouri (4), asma zorgati (2), riadh boukef (2)

1. emergency department of sahloul , sahloul hospital, sousse, TUNISIA
2. emergency department, sahloul university hospital, sousse, TUNISIA
3. emergency department, sahloul hospital, sousse, TUNISIA
4. emergency department of Sahloul, sahloul hospital, sousse, TUNISIA

Keywords: post traumatic stress disorder_prevention_herbal supplement

Abstract :

INTRODUCTION: Post-traumatic stress disorder (PTSD) is the most common psychopathological consequence of exposure to traumatic events. Several interventions have been evaluated: psychological and pharmacological but remain controversial. Herbal medicine can be an alternative for secondary prevention of PTSD. **OBJECTIVE:** evaluate the efficacy and the tolerance of a treatment based on herbal medicine versus placebo in patients who have a high risk of developing a state of post traumatic stress.

MATERIAL AND METHODS: double-blind, placebo-controlled, single-center, randomized and controlled clinical trial conducted in the Sahloul Emergency Department over a period from March 2018 to June 2018. We included patients who had been exposed to a traumatic event that could cause an acute PTSD and a PDI score and / or PDEQ 15 and / or Immediate Stress Questionnaire (L. Crocq) > 50 calculated between Day1 and Day3 after the traumatic event. After obtaining free and informed consent, each patient included in our study is randomized into one of two groups: Group A: The intervention group will have a phytotherapy treatment (ALEOZEN) according to the usual prescription schedule (1 cell x3 / d) for 10 days. And Group B: The placebo group will have a placebo treatment with identical shape and packaging with the same treatment regimen. The randomization is done according to a 4:4 random survey. The follow-up of the patient is carried out on the tenth day, 1 and 3 months after the randomization via a telephone consultation whose main objective is to evaluate according to the post-traumatic stress disorder checklist scale-version PCLS-5 (PCLS-5 scale). The primary endpoint is The second endpoints are the improvement of the symptomatology retained on stabilization or decrease of the PCLS-5 score by 50%, psychiatric follow-up and the use of another psychotropic or anxiolytic treatment or other treatment intolerance.

RESULTS: Demographic characteristics data were comparable between the 2 groups. According to the PCLS-5 instructions 85 patients of all the population study represented PTSD: 53 patients (62%) in the placebo group versus 32 patients (38%) in the Aleozen group with a significant $p=0.04$. The 50% decrease in the total rate of PCLS-5 was revealed in 88 patients with a significant difference between the two groups ($p<0.05$). There were no significant differences in the PCL5 scale at 30 days of inclusion. However, there is a significant difference in the PCLS-5 scale after 90 days of following up. The variation of PCLS-5 (PCLS-5 at 90 days –PCLS-5 at 10 days) scale was noted significant after 90 days. The comparison between the 4 items of PCLS 5 showed a significant difference between the two groups of studies after 90 days of inclusion. No major adverse events and no treatment-related complications were observed during and after the study.

CONCLUSION: Post-traumatic stress disorder is a relatively common and debilitating condition. Early administration of a herbal supplement prevents the occurrence of PTSD in patients at high risk.

#19081 : A comparison of the SOFA quick score (qSOFA) and a local triage score to predict the mortality of septic patients**Authors:**

asma boukadida (1), lotfi boukadida (2), Fatma boukadida (3), ines khelifa (1), fatma lihiou (1), randa dhaoui (1), asma zorgati (2), riadh boukef (2)

1. emergency department of Sahloul, sahloul hospital, sousse, TUNISIA
2. emergency department, sahloul university hospital, sousse, TUNISIA
3. emergency department of sahloul , sahloul hospital, sousse, TUNISIA

Keywords: score_mortality_sepsis_emergency department

Abstract :**Introduction**

The new 2016 definitions of sepsis suggest using the SOFA quick score (qSOFA) for risk stratification of patients with sepsis. Our goal was to compare it to our local triage score to predict mortality.

Methods This is a retrospective cohort study based on data from our local sepsis registry. Our local triage score is consisting mainly of 8 variables (age, pulse, arterial pressure, temperature, respiratory rate, oxygen saturation, Glasgow score and pain scale). We retrospectively calculated qSOFA, our local triage score for all patients admitted to our center with the diagnosis of sepsis. **Results** 268 patients were included in the study. The mean age was 63.6 ± 16.8 years with a sex ratio of 1.3 (56.7% of patients were men). 42.5% were diabetics. The hospital mortality was 7.5%. Based on our results, we showed that qSOFA's performance in predicting mortality was lower than our triage score. The area under curve of our local score was 0.745 vs 0.664 for qSOFA. Our triage score was more sensitive and specific in predicting the mortality of these patients compared to the qSOFA score. **Conclusion** In conclusion, we found that in our contexts, our triage score was greater than q SOFA in predicting mortality. Additional studies are needed to re-evaluate the qSOFA score.

#19082 : Shock index and early detection of severe sepsis in the emergency department**Authors:**

kaies zaydi (1), lotfi boukadida (2), amal baccari (2), chawki el marzougui (3), ines khelifa (1), fatma lihiou (1), asma zorgati (2), riadh boukef (2)

1. emergency department of Sahloul, sahloul hospital, sousse, TUNISIA

2. emergency department, sahloul university hospital, sousse, TUNISIA

3. urgences, chu sahloul, sousse, TUNISIA

Keywords: sepsis_shock index_emergency_diagnosis

Abstract :**Introduction**

Sepsis is a common pathology whose incidence has doubled in ten years. It is burdened with significant mortality. For this reason it is essential to quickly recognize patients whose evolution can be unpredictable. The q SOFA score is used for early detection of sepsis in emergencies.

The Aim

The purpose of this study was to evaluate the value of the shock index (SI), defined as heart rate / systolic blood pressure, to predict the outcome of lactatemia as an objective indicator of disease severity and mortality.

Materials and methods

This is a retrospective study of patients presenting to the emergency department for sepsis. Study carried out between January 2015 and November 2018. The collection of the epidemio-clinical, biological, therapeutic and evolutionary characteristics of patients was made from our register. Follow-up was done at 1 month.

Result

Our study identified 332 patients (mean 64.2 years), including 56% men and 44 % women who 35.7% of patients are diabetic. The pulmonary infections are 35.2 % of cases, urinary are 25% of cases and digestive are 3% of cases.

Hyperlactatemia upper than 2 was observed in 55.6% of patients, in these patients the SI is calculated at 0.89 ± 0.3 . Lactate levels of less than 2 were observed in 44.4% of patients, with SI calculated at 0.79 ± 0.2 . A significant difference was noted between these two groups ($p = 0.009$). In patients with an IS at triage of less than 0.7, the mortality rate at one month is 25%, whereas for those with an IS above 0.7 the mortality rate at one month is 75%.

Conclusions:

The SI appears to be a simple tool that can be used to triage and guide the management of patients with sepsis.

**#19084 : Pulmonary ultrasound (PU) in the diagnosis of acute dyspnea in the emergency department: nurse VERSUS doctor
Emergency Department CHU Sahloul. Tunisia****Authors:**

riadh meddeb (1), lotfi boukadida (2), marwa talbi (1), asma boukadida (1), Fatma boukadida (3), kaies mansouri (1), asma zorgati (2), riadh boukef (2)

1. emergency department of Sahloul, sahloul hospital, sousse, TUNISIA
2. emergency department, sahloul university hospital, sousse, TUNISIA
3. emergency department of sahloul , sahloul hospital, sousse, TUNISIA

Keywords: pulmonary ultrasound_diagnosis_dyspnea_nurse

Abstract :**Introduction :**

Acute dyspnea is a common reason for emergency department consultation and the aetiological diagnosis is sometimes difficult for the emergency physician. Pulmonary ultrasonography is a simple, non-invasive procedure that can be performed at the patient's bedside, which may be useful for diagnosing heart failure.

Objective:

To evaluate the concordance of results of a PU, performed by a paramedical and a physician who received both a training on this subject, of a patient consulting for acute dyspnea.

Methods:

Prospective observational study including all patients, aged over 18 years, admitted to the emergency department for acute dyspnea between April and November 2018. The demographic characteristics of patients were collected, a PU was performed by a doctor and a nurse in all patients. The evaluation of the reproductibility of PU is based on two criteria: the pulmonary congestion score and the ultrasound diagnosis of dyspnea.

Résultats:

During this period, 90 patients were included. The average age was 68 +/- 11 years old. The sex ratio was 1.8. Cohen Kappa's cohesive assessment of pulmonary congestion score was excellent with a Kappa coefficient of 0.88 and 0.84 for ultrasound diagnosis.

Conclusion :

This study showed that PU performed by a paramedical staff and a physician has a reproductibility in the ultrasound diagnosis of dyspnea.

#19085 : A case series on vasoactive drugs via peripheral venous access for management of shock in the emergency room**Authors:**

Wojciech Rojewski-Rojas (1), Alicia Alvarez-Galarraga (2), Rafael Garcia (3), Felipe Guerra (3)

1. Emergency Service, Hospital Universitari Sant Joan, Reus, SPAIN
2. Emergency Service, Hospital Universitari Sant Joan, reus, SPAIN
3. Emergency Service, Hospital Universitario Sant Joan, Reus, SPAIN

Keywords: shock treatment, vasoactive agents, vasoactive drugs, management of shock, emergency room

Abstract :

Introduction: Shock is a frequent condition in the emergency department. The rapid approach is essential to avoid its progression, complications and lethality. Vasoactive drugs play a major role in the treatment of shock. Early administration of vasoconstrictors drugs in shock states, especially distributive ones, is associated with improvement in survival. However, the possibility of complications associated with the administration of these agents by peripheral route leads to recommend the insertion of a central venous catheter for this purpose. Nonetheless, this last procedure is laborious and time consuming.

Objective: To determine the incidence of complications associated with the administration of vasopressor agents by peripheral venous route in shock of any pathophysiology and to try to establish the factors associated with these complications.

Methods: Retrospective, observational case series in an university hospital-based emergency department, that included 57 patients in shock attended over a period of 3 years, in which the administration of vasopressor agents was started peripherally. The time of administration was determined and the protocolized record of any complication related to the administration of the vasopressor agent until the withdrawal of drug administration, discharge or death, were analyzed. The analysis included the recording of variables such as the type of vasopressor drug, the basic-acid state, electrolytes, level of lactic acid upon admission, and the type of solution used in the initial resuscitation.

Results: 57 patients were included in the analysis. Only 2 patients (3.5%) presented immediate local or distal complications. This result was independent of the location of the venous line or the type of shock. Most of patients had septic shock (79%), that is, pathophysiologically distributive shock, and predominantly abdominal in origin. The mortality of the series was 38.9%. The median time of vasoactive agent administration was 24 hours.

Conclusion: There was no significant morbidity associated with peripheral vasopressor drugs administration in this series. Although the administration of peripheral vasoactive drugs in the emergency room seems to be safe, a larger study is necessary to determine and validate the safety of this approach, at least in the first hours of the shock treatment.

#19086 : Anemia: a prognostic factor in Acute Ischemic Stroke Emergency Department CHU Sahloul. Tunisia**Authors:**

marwa talbi (1), lotfi boukadida (2), fatma lihiou (1), Asma bouhoula (1), ines khelifa (1), randa dhaoui (1), asma zorgati (2), riadh boukef (2)

1. emergency department of Sahloul, sahloul hospital, sousse, TUNISIA

2. emergency department, sahloul university hospital, sousse, TUNISIA

Keywords: stroke_prognosis_assessment_anemia

Abstract :**Introduction**

Acute Ischemic Stroke is a major public health problem. It is the first cause of acquired disability in adults. There are several factors that influence its prognosis. The impact of hemoglobin level as a prognostic factor remains controversial.

Objective

The purpose of this work is to determine the impact of anemia on the short- and long-term prognosis of stroke.

Material and method

This is an interesting retrospective study of patients treated by sahloul emergency departement team for a stroke chart. It is a study carried between January 2015 and June 2018. We used data from our register. Follow-up was done at 1, 3 and 12 months.

Result

A total of 640 patients with stroke was included. The average age was 67.6 years, with a male predominance (53.3%), and a sex ratio of 0.53. 47.3% of the patients were diabetic. 60.9% had hypertension. 16.9% had atrial fibrillation.

About 76.6% of cases were of Ischemic stroke and 23.3% of cases were of haemorrhagic stroke.

At one month, 54.3% of patients with a hemoglobin level greater than or equal to 11 had a good prognosis (defined by a Rankin score of 0-2) and 45.7% had a poor one (defined by a Rankin score of 4-5) ($p = 0.642$).

At 3 months, 58.3% of these patients had a good prognosis and 41.7% have a poor one ($p = 0.616$) and at 12 months, 72.3% had a good prognosis and 25.7% had a poor one ($p = 0.047$).

Conclusion

This study suggests that a low hemoglobin level may be correlated with poor long-term prognosis in patients with acute ischemic stroke.

#19088 : Does the delay in administering antibiotics affect mortality?

Authors:

amal baccari (1), lotfi boukadida (1), asma boukadida (2), Fatma boukadida (3), randa dhaoui (2), riadh meddeb (2), asma zorgati (1), riadh boukef (4)

1. emergency department, sahloul university hospital, sousse, TUNISIA
2. emergency department of Sahloul, sahloul hospital, sousse, TUNISIA
3. emergency department of sahloul , sahloul hospital, sousse, TUNISIA
4. service des urgences sahloul, CHU Sahloul Sousse, sousse, TUNISIA

Keywords: antibiotics-delay-sepsis _mortality

Abstract :

Introduction: a rapid management of a septic state and an early antibiotherapy seem to be essential for improving the prognosis.

Objective: the aim of this study is to assess the prognosis of a sepsis according to the delay of administering antibiotics.

Methods: a prospective study that included patients consulting the Emergency department of Sahloul for sepsis. Patients are chosen from the local register ReSSUS. The patient follow-up is after a month

Results: 170 patients were included in our study with average age 65 ± 16 and a sex ratio (M/F) de 0.52.

The acute mortality rate= 10%. It is about 12% within a month. 76% of our patients are treated with antibiotics after 1 hour. The average delay of antibiotherapy of all patients= $207 \text{ mn} \pm 190$

The average delay for deceased patients= $151 \text{mn} \pm 129$ comparing with survivals = $204 \text{mn} \pm 192$ with a $p= 0.785$.

Conclusions: the delay of antibiotherapy in septic state always exceeds recommended delays. A significant difference is not found statistically on our population given the size of the sample.

#19089 : An observational study of intravenous drug users presenting with groin swelling/pain to the Emergency Department**Authors:**

Heather Gray (1), Caroline Robinson (1)

1. Emergency Medicine, NHS Grampian, Aberdeen, UK

Keywords: Intravenous drug user, groin abscess, pseudoaneurysm, necrotising fasciitis, LRINEC Score

Abstract :**Background**

Intravenous drug users (IVDUs) commonly present to the emergency department (ED) complaining of pain and/or swelling in the groin after recent injection. Clinicians concerns include necrotising fasciitis, psuedoaneurysms, abscess and DVT. There is little data available on how common these diagnosis are or what antibiotics to give. Therefore, decisions regarding imaging, antibiotics and specialty involvement are challenging. This study aimed to address this by answering the following questions: what is the best antibiotic to give, do they need imaged in the ED and how do we identify the particularly sick patient?

Methods

This was an observational study of patients presenting to the ED at a large tertiary hospital in Aberdeen, Scotland. Those patients that were included attended the ED between 1st January 2015 and 31st December 2016 and had a diagnosis of 'local infection of skin and cutaneous', 'cellulitis', 'other bacterial infections', 'cutaneous abscess', 'necrotising fasciitis', 'septic shock' or 'septicaemia' or had a CT or USS in the ED.

Patients who did not present with pain and/or swelling of the groin and a history of recent intravenous drug injection were excluded, as were those with no microbiology samples.

The remaining group consisted of 30 patients. Documentation, radiology and laboratory results were analysed for these patients.

Results

Within the 30 patients, 13 different combinations of antibiotics were administered. 11 patients were bacteraemic. Samples obtained from blood cultures, deep tissue samples, pus/fluid samples and superficial samples all grew similar organisms, with a significant presence of anaerobes, as well as Staphylococcus, Streptococcus and gram negative bacteria.

3 patients had a pseudoaneurysm (one of which was not identified on CT as an abscess was compressing the vessel), 5 had features of necrotising fasciitis on CT and required multiple debridements, 1 had necrotising myositis, 12 had an abscess and 11 had a DVT. 6 required HDU or ICU care.

Patients with significant pathology were difficult to recognise. Most were given a low triage category, had relatively normal observations and only mildly raised lactates even if they ultimately required theatre from the ED and then ICU. A LRINEC score of ≥ 6 or 8 was not a good discriminator of need for urgent theatre but none of those who had a score of <6 had time critical findings on CT or at theatre. In 4 out of the 5 cases of requiring urgent repeated debridments in theatre, the CT in the ED did change management because it had not been clinically apparent how significant the pathology was.

17% of these patients have subsequently died (as of January 2019).

Conclusions

Based on the organisms that were grown and the resulting sensitivities, if the patient does not warrant necrotising fasciitis specific antibiotics, Fluclxacillin 2g IV and Metronidazole 500mg IV are advised, with Vancomycin to be used in cases of penicillin allergy.

A substantial proportion of these patients will have significant time-critical pathology and it is challenging to clinically identify this. We therefore propose that all these patients should have CT angiography in the ED.

Trial Registration / Funding Information (only) :

N/A

#19090 : Prognosis of Stroke and social coverage: is there a relationship?**Authors:**

Fatma boukadida (1), lotfi boukadida (2), kaies mansouri (3), Asma bouhoula (3), chawki el marzougui (4), randa dhaoui (3), asma zorgati (2), riadh boukef (2)

1. emergency department of sahloul , sahloul hospital, sousse, TUNISIA
2. emergency department, sahloul university hospital, sousse, TUNISIA
3. emergency department of Sahloul, sahloul hospital, sousse, TUNISIA
4. urgences, chu sahloul, sousse, TUNISIA

Keywords: stroke_prognosis-social coverage

Abstract :**Introduction:**

Stroke is the third leading cause of death, and the leading cause of disability. After the acute phase of a stroke, multidisciplinary follow-up is essential, this follow-up is provided by a treating physician in collaboration with other health professionals: neurologist, physical rehabilitation physician, physiotherapist, and speech therapist.

This represents a considerable cost and a burden for the patient and the state as well.

This study aims to assess the prognosis of stroke according to the type of social coverage of the patient.

Material and methods:

A retrospective study was conducted on patients treated by the Sahloul emergency team for stroke. The study was done between 2017 and June 2018.

Data was collected from the local STROKE registry.

The follow-up was done at 1 month and disability was assessed through the modified Rankin score.

Results:

A total of 281 patients were included.

102 patients in the insured group (CNSS and CNRPS), 89 in the full fee group and 90 patients in the indigent group.

The mean age was 66.6 years old. The sex ratio was 56.2.

In our population 50.7% of patients were diabetic and 57.7% were hypertensive.

The 1-month follow-up had noted a good prognosis (Rankin score of 0-2) among 8.3% of the cases in the insured group, 2.3% in the full fee group and 2% in the indigent group, with no significant difference between the three groups ($p = 0.478$).

The one-month mortality rate was 31.3% in the insured group and 6.3% in the indigent group with a significant difference ($p = 0.04$).

Conclusion:

Several factors seem to interfere in influencing the prognosis of stroke other than the type of social coverage, including socio-economic, intellectual level and accessibility to healthcare.

#19092 : An observational study of characteristics, management and outcome of critically ill general medical patients in the Emergency Department**Authors:**

Stine Engebretsen (1), Dag Jacobsen (2), Rune Rimstad (3), Stig Tore Bogstrand (4)

1. Emergency Department, Oslo University Hospital and University of Oslo, Oslo, NORWAY
2. Department of acute medicine, Oslo University Hospital and University of Oslo, oslo, NORWAY
3. Medicine, Health, Patient Safety and Integration, staff of CEO, Oslo University Hospital, oslo, NORWAY
4. Department of Forensic Sciences, Oslo University Hospital and Lovisenberg Diaconal University College, oslo, NORWAY

Keywords: Critical illness, critical care, emergency medicine, emergency service hospital

Abstract :

Background: Critically ill general medical patients is an increasing and resource-demanding group of patients in the emergency department (ED), yet little is known about the patients and how they are managed. This register-based cohort study therefore aimed to examine priority 1 patients' characteristics, ED management and outcome, and to compare it to a group of priority 2 patients.

Methods: Priority 1 patients comprised all adult medical patients treated by a specialized multidisciplinary team. Priority 2 patients functioned as a control group, and consisted of every 5th admitted adult medical priority 2 patient. Data from the ED of a tertiary hospital in 2015 and 2016 were used. Descriptive analysis and multivariate logistic modelling was conducted.

Results: 1294 priority 1 and 1426 priority 2 patients were included. Mean age for priority 1 patients were 59 and for priority 2 64. Mean National Early Warning Score were 7 and 3.5, male gender were 56% and 53% and intensive care unit (ICU) admission were 57% and 17%. The most frequent discharge diagnosis for priority 1 were poisoning (24%) and for priority 2 a cardiac/circulatory diagnosis (39.3%). Multivariate analysis showed that priority 1 patients were younger, more likely to have a history of substance problem use (both $p < 0.001$) and to live in an institution ($p < 0.05$) than priority 2 patients. They also received more critical care interventions and medications, had shorter ED length of stay and higher ICU admission rate and mortality (all $p < 0.001$).

Conclusion: Priority 1 patients were younger and with more history of substance problem use than priority 2 patients, and a larger proportion lived in a care home or institution. One in four priority 1 patient was diagnosed with poisoning. Priority 1 patients had shorter ED length of stay than priority 2 patients, suggesting that management by a multidisciplinary team is beneficial.

Trial Registration / Funding Information (only) :

No external funding.

#19093 : The impact of dispatcher assistance in the rates and efficacy of bystander cardiopulmonary resuscitation: A meta-analysis**Authors:**

Yu Wang (1), Yu Wang (1), Hong Zhang (1)

1. , none, Hefei, CHINA

Keywords: Cardiopulmonary Resuscitation, CPR, Dispatcher Assisted Cardiopulmonary Resuscitation, DACPR, Bystander Cardiopulmonary Resuscitation, BCPR, Out-of-hospital Cardiac Arrest, OHCA, Telephone CPR

Abstract :

Objectives The introduction and development of the concept of emergency medical services (EMS) has played a crucial role in decreasing mortality rates and returning to independent survival in out-of-hospital cardiac arrests (OHCA). The role of Dispatcher Assisted Cardiopulmonary Resuscitation (DACPR) has not been widely reported. The objectives of the study were to perform a meta-analysis of observational studies addressing whether DACPR, compared with independent Bystander Cardiopulmonary Resuscitation (BCPR), increased the rates of BCPR, and whether they altered survival outcomes compared with no BCPR in OHCA.

Methods We searched the relevant literature from PubMed and Cochrane databases. The basic information and outcome data (BCPR rates, survival to hospital discharge, 1-month survival) were extracted from the included studies. Meta-analyses were performed by using STATA 11.0 software.

Results Eight studies involving 65,148 patients were eligible. Overall meta-analysis showed that DACPR was associated with statistically improved rates of BCPR (Odds Ratio [OR] = 3.48, 95% confidence interval [CI]: 2.08-5.83, $I^2 = 96.7\%$), and survival to discharge/ 1-month survival (OR = 1.51, 95% CI: 1.40-1.63, $I^2 = 24.9\%$) when compared with no BCPR. However, no significant effect of DACPR in survival rate was found, when compared with independent BCPR (OR = 0.84, 95% CI: 0.62-1.14, $I^2 = 88.6\%$).

Conclusion This study found that DACPR resulted in significantly higher rates of BCPR as compared with independent BCPR in OHCA. Considering that DACPR also resulted in greater survival rate compared with no BCPR, DACPR should be a standard protocol for EMS systems worldwide.

Trial Registration / Funding Information (only) :

no appropriate register/This study did not receive any specific funding.

#19094 : Comparison efficacy of treatment between Acupuncture and Tramadol in Acute Ankle Injury

Authors:

Nopmanee Tantivesruangdet (1), Chayanin Vejaphuti (2)

1. Emergency consultation, Department of Emergency, Rajavithi Hospital, college of Medicine, Rangsit University, Bangkok Thailand, Bangkok, THAILAND

2. Physical Medicine and Rehabilitation, Department of Emergency, Rajavithi Hospital, college of Medicine, Rangsit University, Bangkok Thailand, Bangkok, THAILAND

Keywords: Keywords: acute ankle injury, VAS pain score, Acupuncture, Tramadol, Ottawa Ankle Rules

Abstract :

Background: An acute ankle injury is a common musculoskeletal injury in the general population and athletes. Acupuncture is an alternative medicine treatment in acute ankle sprain. The World Health Organization recommended using acupuncture to relieve musculoskeletal pain.

Objective: The objective of this study is to compare efficacy of treatment between acupuncture and intramuscular tramadol in patients with acute ankle injury.

Material and Method: This is a cohort study of 75 aged over 14 years presented with acute ankle injury or partial tear of tendon without fracture from Roentgenogram and was treated by acupuncture or tramadol. The visual analog scale (VAS) score was assessed before and after treatment with tramadol or acupuncture treatment at the time of the first treatment after 0 minute then 10, 20, 30 minutes, 1 week and 4 weeks

Results: There was a difference between using acupuncture and tramadol in acute ankle injury. More pain reduction was seen in patients using acupuncture than in patients using tramadol at 10 minutes, 20 minutes, 30 minutes and 1 week. No difference in pain reduction was seen after 4 weeks. The mean age (Mean \pm SD) of the patients was 32.72 ± 12.55 years old. 61.3% female patients, 66.7% ankle sprain grade II, 54.7% left ankle sprain and 72% Non Road Traffic Injury.

The Body Mass Index (BMI) (Mean \pm SD) of the total patients was 23.59 ± 5.30 Kg/m².

Conclusion: There was a difference in pain reduction between patients using the acupuncture and tramadol in early time of treatment at 10 minutes, 20 minutes, 30 minutes and 1 week with statistically significant $P < 0.05$ but no statistically significant difference in pain reduction after 4 weeks of ankle sprain. No side effects were found from using tramadol and acupuncture.

Trial Registration / Funding Information (only) :

College of Medicine, Rangsit University, Bangkok, Thailand

#19095 : Telemedicine Communication by Instant Message Application Group Could Be Conductive to Disaster Management in One Local Hospital**Authors:**

Chia-Hsi Chen (1), Tak-Yee Wong (2), Jui-Fang Huang (3), Hsiu-Chun Chen (4)

1. Department of Emergency Medicine, St. Martin De Porres Hospital, Chia-Yi City, TAIWAN
2. Department of Radiology, St. Martin De Porres Hospital, Chia-Yi City, TAIWAN
3. Department of Education and Research, St. Martin De Porres Hospital, Chia-Yi City, TAIWAN
4. Department of Nursing, St. Martin de Porres Hospital, Chia-Yi City, TAIWAN

Keywords: disaster, telemedicine, instant message application, transferred film, Moire pattern

Abstract :

Background:

Under the notification of emergency medicine transport (EMT) and Emergency Operations Center (EOC) we make the organizational mobilization with different specialists including physician and surgeon to deal with these disaster patients. In emergency room(ER) the lag of patients examination transportation and examination results confirmation are usually found. Could we do something in search of methods changing these conditions such as obstruction of patients' transportation and delayed judgements of examinations. In this review we want to know that the issues of images transmission in instant message application (App) such as the judgement difficulties or other associated legal problems in Taiwan.

Methods:

This is a case control study and 44 patients are included. 9 patients are excluded because of unavailable radiologic film. In this study the photo quality and Moire's pattern existence grading are rechecked. The transmitted radiologic films are re-surveyed by single radiologist with smartphone monitor and compared with original results. The One Way ANOVA. Correlation Analysis are used for statistics analysis. The used static software is SPSS edition 23th.

Results:

We took over 44 patients in this train accident. The means transferring time was 78.5 minutes with EMT vehicle. The most patients were around 51 to 60 year-old (22 patients,50 %) and 61-70 year-old (9 patients,20.5%).

When we compared between the transferred films quality, judgement results changes and occurrence of Moire's pattern we can find there are difference at the mean level between these three groups. One way ANOVA test show no static significance difference between transferred films judgement changes, transferred film quality and Moire's pattern existence. The p value is 0.206. In correlation analysis test no static significance between the judgement results change and transferred films quality or occurrence of Moire's pattern. The p valve is 0.508 and 0.359. Besides there is no static difference at transferred films quality and Moire's pattern existence. The p valve is 0.779.

Discussion and Conclusions: How to keep patients flowing smoothly and prevent ER jam condition will be the first in dealing with massive disaster patients. In usual we always think the Moire's pattern will have great influences in the quality and judgement of transferred film. How to arrange the appropriate medical examinations and receive results as soon as possible. In previous study the direct visual communication within instant messaging group will be conducive to the disaster man power management and efficient control of the patient's medical information under the Personal Information Protection Act. Now in this study the results of transferred films judgement are not relative with transferred films quality and existence of Moire's pattern. The transmission function in grouping of IM App can help the doctor to make a decision more efficiently and restrain the medical information of patients. We know the results of transferred film by smartphone could be available in the dealing with massive disaster patients and we can't find there are major impactions in the judgement of transferred film.

Trial Registration / Funding Information (only) :

IRB No: 18B-004

#19096 : Evaluation and management of traumatic brain injury in children at emergency department**Authors:**

Mounir hagui (1), Olfa Djebbi (1), Mehdi Ben Lassoued (1), Khaled Lamine (1)

1. SAU, Hôpital Militaire Principal d'Instruction de Tunis , Tunis, TUNISIA

Keywords: Management - Evaluation - Traumatic brain Injury - Children- Emergency Departement

Abstract :

Introduction

Traumatic brain injuries (TBIs), including concussions, are at the forefront of public concern about injuries sustained by children. A TBI can lead to emotional, physiologic, and cognitive sequelae in children leading to social and professional disability years after. Physiologic and Anatomic specificities might place children at increased risk for TBI comparing to adults. Special features regarding assessment and management of TBIs in children received at an Emergency Department (ED) are to consider.

Aim of the Study

The study is a critical analysis of the management of TBIs in children in an Emergency Department.

Results and discussion

159 children were included in this Study during 3 years of a retrospective and descriptive analysis. The prevalence of TBIs in children was 0, 9% among all children admitted to the ED for a traumatic incident. The main causes of TBI were domestic incident (48%) and physical activity at school (33%). Most of children had mild TBI (91%), moderate and severe TBI ratio were respectively at 8, 5% and 0, 5%. In 63% of cases a CT scan was practiced showing cerebral injuries in 3, 8% of children with moderate or severe TBI. Less than 0, 5% of children were admitted to a neurosurgical service for a 24-48h assessment, no surgery was performed.

The analysis showed two types of management procedures while residents adopted a systematic approach (Group1; 57% of children had CT scan), ED Seniors managed Cases depending on their personal experience and the analysis of the circumstances and clinical data's (Group 2; 24% of CT scan performed). No statistically significant difference was found between the two groups regarding cerebral injuries founding (2, 5% versus 1, 88%, $p > 0, 05$).

Conclusion

Result of the series joint the international foundings, difficulties still existes in managing TBI in children. Lack of scientific evidence and existence of a verity of approaches make difficult to adopt a clear and an appropriate procedure to manage treatment of children TBIs in ED.

#19098 : Trends and Characteristics of Buprenorphine Sublingual Tablet Toxicities**Authors:**

Saumitra Rege (1), Marissa Kopatic (1), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA

Keywords: Buprenorphine, Medication Assisted Therapies, Overdose, Poisonings, Sublingual Tablets

Abstract :

Background: The number of patients with an opioid use disorder in the U.S. was estimated to be 2.6 million in 2015. Buprenorphine can be easily dispensed through office-based prescribers and community pharmacies, with 58% opioid treatment programs now offering buprenorphine. Buprenorphine sublingual tablets were discontinued in 2012 due to concerns about the misuse, abuse, and diversion. They were replaced with single dose sublingual films that are considered child-resistant and abuse deterrent. The objective of this study is to evaluate the trends, and characteristics of exposures to buprenorphine tablet formulations.

Methods: We retrospectively queried the National Poison Data System (NPDS) for all confirmed exposures to buprenorphine tablets from 1/1/2011 to 12/31/2016 as specified by the American Association of Poison Control Center Code (AAPCC) generic code and product name. We assessed the relevant characteristics of exposures descriptively. Frequencies and rates of buprenorphine tablet exposures (per 100,000 human exposures) were evaluated using Poisson regression methods, with the percent changes and corresponding 95% Confidence Intervals (95% CI) reported. Predictors of severe outcomes (major effects and death) to tablet exposures were also assessed with adjusted odds ratios (AOR) presented.

Results: Overall, there were 7,406 reports of exposures to buprenorphine sublingual tablets to the PCs during the study period. The reports of buprenorphine tablet exposures decreased from 1,780 to 468 during the study period, a decrease of 73.7% (95% CI: 64.1%, 78.7%; $p < 0.001$), with exposures resulting in severe clinical outcomes decreasing from 49 in 2011 to 27 in 2016. The rate of exposures decreased by 71.3% during the study period. Children under 6 years of age represented 32.1% of the sample, while adults between 20 and 29 years of age accounted for 23.8% of the cases. The most common reason for exposure was unintentional (34.6%), with intentional abuse (20.3%) being common (15.1%). Single substance exposures accounted for 63.9% of the cases and ingestion was the most common route of exposure. The case fatality rate for such exposures was 0.2%, with 3.9% cases demonstrating major effects. The proportion of major effects was highest among suspected suicides (9.5%) and abuse (4.5%) in comparison to cases of other exposure reasons such as unintentional. The Midwest region (37.4%) demonstrated the highest proportion of buprenorphine tablet exposures. An additional opioid was reported for 11.1% cases and naloxone was a commonly reported therapy for cases. Significant predictors of severe buprenorphine film exposures included suspected suicides (Ref: Unintentional reasons) (AOR: 1.96, 95% CI: 1.34 – 2.86), 3 or more co-occurring substances (AOR: 4.14, 95% CI: 1.87 – 9.14), and non-oral routes of exposure (AOR: 2.16, 95% CI: 1.31 – 3.56).

Conclusions: Analysis of national data from the NPDS exhibited a significantly decreasing trend in the exposures to buprenorphine tablet products, with such exposures being frequent among children under 5 years of age. Considering the discontinuation of the sublingual tablets, it is imperative to explore in greater detail, the reasons for the observed exposures. Possible reasons for these observed exposures might be the continued availability despite discontinuation or potential diversion of the product

Trial Registration / Funding Information (only) :

N/A

#19099 : Opioid-Related Suicide Attempts in the United States

Authors:

Saumitra Rege (1), Heather A. Borek (1), Marissa Kopatic (1), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA

Keywords: Opioids, Suicides, NPDS, Epidemiology

Abstract :

Objectives: Suicides are a global phenomenon, with the World Health Organization estimating the annual mortality rate due to suicides to be 10.7 per 100,000 individuals. In Europe, self-harm attempts in 2015 exceeded 50,000. According to the Centers for Disease Control and Prevention, the rates of opioid-related suicides and unintentional overdoses doubled between 2000 and 2017 in the United States (U.S.). This study aims to characterize the opioid-related suspected suicide attempts (SSAs) that are reported to the U.S. National Poison Data System (NPDS).

Methods: The NPDS was queried for opioid-related SSAs that were reported to the U.S. poison centers (PCs) from 2011 to 2017. We identified and descriptively assessed the relevant characteristics of SSAs. Calls from acute care hospitals and emergency departments (collectively, hospitals) were studied. Poisson regression models were used to evaluate the trends in the number and rates (per 100,000 human exposures) of SSAs. Percent changes from the first year of the study (2011) were reported with the corresponding 95% confidence intervals (95% CI).

Results: Overall there were 184,645 opioid-related SSA cases reported to the U.S. PCs during the study period. Among these, 84% were directly reported by hospitals. Cases between 20 and 39 years (39.3%) constituted the most common age group. The proportion of older adults above 60 years of age almost doubled during the study period (7.4% to 14.2%). Females accounted for 63.8% of cases. Most exposures occurred in a residence (94.2%). More than one substance was reported for most cases (78.2%). Major clinical effects were demonstrated in 9.4% of exposures and the case fatality rate was 0.8%. Major effects were less common in teenagers (4.3%) and there were 92 deaths in this age group during the study period. Among cases, 33.2% were admitted to a critical care unit while 22.6% were admitted to a psychiatric facility directly from the emergency department. The proportion of cases from hospitals increased during the study period (80.4% to 86.4%). Hydrocodone (36.7%) was the most common opioid reported in SSA cases followed by tramadol (20.8%). Benzodiazepines were the most common non-opioid co-occurring substance reported for SSAs (28.9%). The most frequent clinical effect demonstrated was drowsiness (51.8%), while tachycardia (22.5%) and respiratory depression (10.3%) were commonly seen. Naloxone was used in 28.3% cases. In approximately one-fourth of the cases, naloxone was used after consultation and recommendation from the PCs. SSAs decreased by 24.4% (95% CI: -25.7, -23.1%, $p < 0.001$) while the SSA rate also decreased by 16.5% (95% CI: -23.4%, -9.3%, $p < 0.001$).

Conclusions: SSA cases handled by the PCs decreased significantly, however there was a rise in the older population. There was a low fatality rate. The majority of calls originated from the hospitals or emergency department. Hydrocodone and tramadol were the most common opioids reported for the sample. Personalized evidence-based strategies, population-level interventions, creation of protective environments, and better screening of patients at risk of suicide are some key measures to limit suicide attempts. PCs play a significant role in the care of this patient population and partner closely with emergency personnel.

Trial Registration / Funding Information (only) :

N/A

#19101 : Epidemiology of Gabapentin Exposures using the National Poison Data System**Authors:**

Saumitra Rege (1), Angela Holian (2), Andre Berkin (2), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA
2. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, CHARLOTTESVILLE, USA

Keywords: Gabapentin, Surveillance, Overdose, Trends

Abstract :

Background: Gabapentin prescriptions have by 64% between 2012 and 2016, in part due to the off label use for conditions like chronic pain. It was also one of the most commonly reported drug causing overdose deaths in the United States from 2011 through 2016. It has been noted that almost one-fifth of the patients who abuse opioids, also abuse gabapentin. The objective of the study was to describe the epidemiology of gabapentin exposures using a near real-time national poison center (PC) database.

Methods: The National Poison Data System (NPDS) was queried for all human exposures to gabapentin from 2012 to 2018 using the American Association of Poison Control Center (AAPCC) generic code identifiers. We descriptively assessed the relevant demographic and clinical characteristics. Gabapentin reports from acute care hospitals and emergency departments (EDs) were analyzed as a sub-group. Trends in gabapentin frequencies and rates (per 100,000 human exposures) were analyzed using Poisson regression methods. Percent changes from the first year of the study (2012) were reported with the corresponding 95% confidence intervals (95% CI).

Results: There were 122,810 gabapentin human exposures reported to the PCs from 2012 to 2018, with the number of calls increasing from 11,336 to 22,776 during the study period. Polysubstance exposures accounted for 65.2% of gabapentin exposures. Of the total gabapentin calls, the proportion of calls from acute care hospitals and EDs increased from 55.1% to 64.7% during the study period. Multiple substance exposures accounted for 75.4% of the calls from acute care hospitals and EDs. Approximately 21% of the patients reporting gabapentin exposures were admitted to the critical care unit (CCU), while 21.3% patients were treated and released. Residence was the most common site of exposure (94.5%), and 68.2% cases were enroute to the hospital when the PC was notified. Among the patients, 59.1% were females, with the majority of gabapentin exposures occurring between the ages of 40-59 years (33.5%). Suspected suicides (51.6%) was the most commonly reported reason for exposure. The proportion of such cases was higher in reports from acute care hospitals and EDs (71.5%). During the study period, the proportion of suspected suicides increased (46.8% to 54.4%) among gabapentin exposures. Major effects were seen in 5.5% cases and the case fatality rate was 0.4%. Notably, there was an approximately 2-fold increase in the number of deaths during the study period. The most frequently co-occurring substances associated with the cases were benzodiazepines (16.7%) and antipsychotics (10.7%). Tachycardia (16.1%) and hypertension (8.5%) were commonly observed clinical effects. During the study period, the frequency of gabapentin exposures increased by 200.9% (95% CI: 196.4%, 205.5%; $p < 0.001$), and the rate of gabapentin exposures increased by 217.8% (95% CI: 195.8%, 242.2%; $p < 0.001$).

Conclusions: Gabapentin exposures increased during the study period. Abuse and diversion of gabapentin may be as a result of its low cost and non-schedule status. Gabapentin has also been increasingly associated with suicidal ideation, the most common reason for exposure in our sample. Increasing prescriber awareness and better screening may be key to reduce such overdoses.

Trial Registration / Funding Information (only) :

n/a

#19102 : Analysis of Single Substance Heroin Exposures reported to the U.S. Poison Centers from Healthcare Facilities.**Authors:**

Saumitra Rege (1), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA

Keywords: Heroin, Illicit Drugs, Healthcare Facilities, Mortality, Overdose

Abstract :

Background: Heroin use has reached a public health crisis in the U.S. Since 2010, the rate for deaths involving heroin has almost tripled, from 1.5 per 100,000 in 2011 to 5.1 in 2016. The number of people using heroin for the first time in the U.S. has increased in recent years. Hence it is important to track heroin overdoses, especially those reported from the healthcare facilities (HCF) as these may greatly increase resource use. The objective of the current study is to use outline the epidemiology of single substance heroin exposures reported to the National Poison Data System from the HCFs.

Methods: The NPDS was queried for all human single substance exposures to heroin reported to the U.S. Poison Centers (PCs) from HCFs between 2011 and 2017. We descriptively assessed the relevant demographic and clinical characteristics. Trends in heroin frequencies and rates (per 100,000 human exposures from HCF) were analyzed using Poisson regression methods. Percent changes were reported with the corresponding 95% confidence intervals (95% CI).

Results: There were 15,692 single substance heroin exposures reported to the PCs from HCFs. The number of calls increased from 1,142 to 3,865 during the study period. Among these calls, 90.2% were reported from acute care hospitals and emergency departments (EDs), 6.5% were reported from freestanding EDs, while 3.3% were reported from physician offices. Acute exposures to heroin were responsible for 67.7% of the calls from HCF. Approximately 19% of the patients reporting such heroin exposures were admitted to the critical care unit (CCU), with 56.6% patients treated and released. Residence was the most common site of exposure (69.7%). Among the patients, m were male, with the majority of the individuals between ages 20 and 39 years (70.9%). Pediatric cases accounted for 6.3% of the exposures. Intentional abuse (74.5%) and misuse (10.5%) were commonly observed reasons for exposure. During the study period, the proportion of heroin abuse cases increased (73.3% to 76.1%). Major effects were seen in 19.1% cases and the mortality rate for single substance heroin exposures from HCF was 1.8%. Notably, the number of heroin-related fatalities in this group doubled during the study period. Coma (26.8%) and respiratory depression (27.3%) were frequently observed clinical effects. Naloxone (60.7%) was the most frequently reported therapy. During the study period, the frequency of heroin exposures increased by 238.4% (95% CI: 215.8%, 261.5%; $p < 0.001$), and the rate of heroin exposures increased by 187.6% (95% CI: 149.8%, 231.2%; $p < 0.001$).

Discussion: There was a significant increase in single substance heroin exposures reported to the PCs from HCFs during the study period. This increase may be a result of the lower cost of heroin and the tighter regulations on the prescribing of opioids. Changes in the sources of supply and potency of heroin products can result in substantial adverse events seen in the HCFs. Exposures reported to the poison centers further highlight the need for sustained, targeted, and multifactorial responses to the ongoing opioid epidemic, including timely surveillance.

Trial Registration / Funding Information (only) :

n/a

#19103 : Retrospective study regarding ceiling of treatment decisions in the emergency department**Authors:**

Laura Black (1), Luan Tong (1), Syafie Nazley (1), Santosh Bongale (2)

1. , none, Glasgow, UK

2. NHS GGC, none, Glasgow, UK

Keywords: ceiling of treatment, frailty, DNACPR, comorbidities

Abstract :

Ceiling of treatment (CoT) is a patient management plan with appropriate limitations to interventions which are likely to be futile, burdensome, or contrary to the patient's wishes in the context of patients on an end of life trajectory. CoTs are put in place to improve management of acute episodes in these patients. How these factors influence the institution of a CoT can be even more unclear. There was significant confusion and discomfort when physicians were faced with a CoT decision because of legal and ethical consequences. [3][4][5] By trying to identify a list of factors which influence commencing a CoT, we hope that this can help create a model that facilitates the decision-making process.

Retrospective Clinical data was collected from a 3-month period to include patients who died within 48 hours of ED admission at the QEUH. Patients who received full ICU escalation, admitted with acute stroke or cardiac arrest were excluded from the study.

79 patients data analysed 37 met the inclusion criteria. A variety of data was collected for each patient including level of care, observations, comorbidities and factors noted influencing decisions. This information was then used to calculate CCI. This data was then analysed to determine if a relationship existed between the variables and institution ceiling of treatment decisions.

The most frequent factors affecting the decision for CoT in this study were the presence of comorbidities, level of care considered maximal by clinician, frailty and pre-existing DNAR.

Using this information, we can say that having a pre-existing DNAR changed the outcomes for these patients needing a CoT decision. In clinical practice we suggest that DNAR discussions should be done earlier and more frequently to improve the future care of the patient during an acute episode.

Even with a mean age of 77 in our patient group, it is surprising to see that advanced age is mentioned in only once as this is contrary to what is seen in clinical practice.

Patient wishes was not a frequent factor in CoT decisions and should ideally be higher to promote patient centered care.

#19107 : Characterization of Oxycodone Misuse using National Survey Data

Authors:

Saumitra Rege (1), Jennifer Ross (2), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA
2. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, CHARLOTTESVILLE, USA

Keywords: Oxycodone, NSDUH, Prescription Opioid Misuse, Risk Markers

Abstract :

Background: Drug overdoses continue to be a public health crisis with 63,632 fatalities in 2016. Approximately two-thirds of these deaths (66%) involved a prescription or illicit opioid. Prescriptions for oxycodone-containing analgesics exceeded 54 million in 2016 with 182,748 oxycodone-related emergency department (ED) visits in 2010. The objective of the study is to characterize the risk markers of oxycodone misuse using the nationally representative National Survey of Drug Use and Health (NSDUH) data.

Methods: The 2017 NSDUH public use cross-sectional data were analyzed. The respondents were classified into two groups, past year oxycodone misusers, and non-misusers, based on the past year misuse of oxycodone products. The prevalence of demographic, clinical factors and substance use and abuse, including prescription medications, was assessed descriptively using cross-tabulated frequencies and chi-square tests. Logistic regression models using a backward selection process were used to identify predictors of oxycodone misuse adjusting for covariates. Adjusted odds ratios (OR) and corresponding 95% Confidence Intervals (CI) were calculated

Results: Overall, the 2017 NSDUH survey comprised of 56,276 respondents, of which 5,212 respondents (9.2%) reported using oxycodone products over the last year. 1,074 respondents reported misuse, accounting for 20.6% of the total oxycodone users or 1.9% of the survey sample. Past year oxycodone misusers were more likely to be males (55.1% vs 42.6%, $p < 0.001$), unmarried (73.6% vs 45.1%, $p < 0.001$), and Hispanic (14.6% vs 11.9%, $p < 0.001$). Suicide ideation was much more frequent in oxycodone misusers (18.7% vs 8.5%, $p < 0.001$). The prevalence of use and misuse of other substances in the previous year was significantly higher in the oxycodone misusers. Previous year marijuana use (OR: 1.87, 95% CI: 1.45 – 2.41), heroin use (OR: 3.34, 95% CI: 1.93 – 5.78) and hallucinogen use (OR: 1.65, 95% CI: 1.11 – 2.45) were significant predictors of oxycodone misuse. Methylphenidate use in the previous year more than doubled the risk of oxycodone misuse (OR: 2.61, 95% CI: 1.10 – 6.19). Morphine use reduced the risk of oxycodone misuse by 46% (OR: 0.54, 95% CI: 0.36 – 0.80). Self-reported suicide ideation increased the risk of oxycodone misuse by 41% (OR: 1.41, 95% CI: 1.05 – 1.88). Hispanics (OR: 1.27, 95% CI: 1.01 – 1.64) had a significantly higher probability to misuse oxycodone. Oxycodone misuse was significantly more likely among misusers of other opioids including morphine (OR: 7.61, 95% CI: 3.19 – 10.12), oxymorphone (OR: 3.42, 95% CI: 1.15 – 7.11). Previous year tranquilizer misusers (OR: 2.76, 95% CI: 1.99 – 3.83), stimulant misusers (OR: 2.27, 95% CI: 1.53 – 3.37) increased the risk for oxycodone misuse in the past year.

Conclusions: The study used data from a nationally representative sample and indicated a high prevalence of oxycodone misuse. Our study highlighted risk factors associated with misuse of oxycodone products. Several factors such as gender, use and misuse of other substances including other opioids appear to be important predictors of oxycodone misuse. Tailored interventions and risk-screening measures to optimize oxycodone prescribing might be key in limiting the misuse and diversion of its pain medication.

Trial Registration / Funding Information (only) :

n/a

#19108 : ATYPICAL SYMPTOMS IN ACUTE STROKE ALIAS THE MANTLE OF INVISIBILITY**Authors:**

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), ROBERTA GUARNONE (2), ELISA CANDELORO (2), ALESSANDRA PERSICO (2), ANNA CAVALLIN (2), GIULIANO UBERTI (2), STEFANO PERLINI (3), ELENA NOVARA (2), carlo marena (4), alba muzzi (4), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. , POLICLINICO , pavia, ITALY
4. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY

Keywords: stroke triage emergency departement cardiovascular risk factor

Abstract :

FOREWORD: Stroke is one of the leading causes of residual mortality and disability worldwide, representing the first cause of disability in the elderly. About 35% of patients suffering from severe residual stroke disability. Prevalence has increased progressively over the past 25 years, doubling between 1990 and 2010, and increases as the age grows. The literature data give a general prevalence of 6.5% in 2013. It is also a time-dependent pathology: It has been widely demonstrated that early treatment (enters 4.5 hours after the onset of symptoms for systemic thrombi therapy and 6-8 hours for mechanical thrombus lysis) reduces mortality and residual disability. However early detection of strokes can sometimes be insidious by bringing delays in care and therapy.

PURPOSE: To analyse the early recognition and treatment of a large cohort of patients established in our emergency room for a consecutive year (May 2017-May 2018). We analyzed the attribution of the priority codes to the medical examination and the waiting and process times of the various patients. We have therefore divided the population by the Symptomologic frameworks presented: motor, sensory, language and atypical disorders (including vertigo, confusion and syncope).

RESULTS: Patients who received a stroke diagnosis a tour ED were analyzed (from May 2017 to May 2018) for a total of 759 patients. These had an average age of 74 years with a median of 77 years with a minimum prevalence of female sex (386 M, 373 F). 427 presented with motor symptoms, 161 pz Sensory symptoms, 334 speech disorder, 274 belonged to the 4 group. The 4 groups appear comparabile for age, sex distribution, number of risk factors and hospitalization. While the first three groups maintained a proper high priority for medical examination (more than 75% had yellow or higher code), only 65% of patients in the 4 group had high priority code for medical examination. The result is an increase in the waiting time 38 average minutes with median of 20 minutes for the first three categories and 55 average minutes of waiting with median of 27 minutes for patients with atypical symptoms. The temporal delay is primarily borne by the recognition at the door, while the subsequent times (of request for imaging and neurological counseling and process time) are normalised compared to the other three symptomologic categories after the medical examination

Conclusions: It is evident that atypical symptoms are more difficult to recognize at the door as neurological acuties, leading to an increase in the waiting time for these patients. However, the therapeutic diagnostic pathway set in the setting of our first aid in a multidisciplinary collaboration between emergency physicians, neurologists and interventionist radiologists, allows a recognition ready for medical examination and a Subsequent setting of a correct therapeutic diagnostic process. It is therefore underlined the need to put more attention to this category of patients in triage.

#19109 : Epidemiological and clinical features of non-perfused ST-elevation myocardial infarctus**Authors:**

Sarra Chaouch (1), Dorra Loghmari (2), Ahmed Guesmi (3), Rabeb Mbarek (1), Meriem Ben abdellaziz (4), sondos Laajimi (4), Mounir Naija (4), Naoufel Chebili (4)

1. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 CHU sahloul sousse, CHU sahloul sousse, SOUSSE, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA

Keywords: epidemiology,STEMI,reperfusion traitement

Abstract :**BACKGROUND:**

In Tunisia, the management of acute coronary syndromes with ST-elevation myocardial infarctus (STEMI) is still facing difficulties, particularly in relation to the reperfusion strategy adopted. It is noted that a large number of patients carried by the mobile emergency care unit (MECU) to the emergency departments or the cardiology centers of the university hospitals didn't benefit from a reperfusion treatment(thrombolysis or angioplasty).

The aim of this work was to study the epidemiological and the clinical characteristics of the non-perfused STEMI compared to the perfused ones , and to determine the factors behind the decision of reperfusion.

METHODS:

A comparative prospective study including 305 cases of STEMI supported by the MECU on our regions were collected over a period of 12 monthes from January 2018 to December 2018.

RESULTS: 135 patients (44.26%) did not receive any reperfusion treatment during the first 24 hours. The rest (170 patients) had either thrombolysis or were sent directly to the catheterization laboratory. 103 of the non-reperused patients were male against 138 reperused ones. The average age was 63 for the non-reperused patients compared to 59 years for the reperused ones. 70 calls for non- reperused patients came from peripheral hospitals, while 53 came from university hospitals. 74% of patients who were not reperused, the received call was to report a diagnosed STEMI versus 23% for undiagnosed chest pain. A history of coronary artery disease was observed in 21% of non-reperused patients, hypertension in 37% of patients, and diabetes in 33% . 8 patients among the non-reperused group had a history of *Chronic Obstructive Pulmonary Disease*(COPD), and 31 were smokers. The predominant territories for the non reperused STEMI were inferior in 31% and anterior in 19% of patients. 33% of non-reperused STEMI (45 patients) present complications during medical carriage: 3 cardiac arrests , 5 cardiogenic shock, 11 with left heart failure, 10 arrhythmia and 15 conduction disorder. The rate of complications in reperused STEMI was almost the same (30% of cases).The average delay between the show of early signs of pain and the arrival of the MECU was 4 hours for the non-reperused patients and 3 hours for the reperused patients . The univariate statistical analyses showed a significant difference between non- reperused STEMI and reperused STEMI according to the history of coronary artery disease (17 reperused versus 29 not reperused with a significant difference at $p=0.006$) as well as for high blood pressure (40 reperused STEMI against 50 non- reperused at $p=0.01$) and COPD (2 reperused against 8 non- reperused at $pp=0.02$). On the other hand, there was no significant difference between the two groups according to the rates of complications.

CONCLUSION:

Our study shows that patients with high blood pressure history, COPD and coronary artery disease suffering from STEMI are less likely to benefit from reperfusion. The rate of early STEMI complications does not appear to differ between reperused and non-reperused patients, which may be associated with sampling biases.however,a study with much more representative sample could better clarify us.

Trial Registration / Funding Information (only) :

no funding

#19111 : National Estimates of Marijuana-related Poison Center Calls**Authors:**

Saumitra Rege (1), Marissa Kopatic (1), Heather A. Borek (1), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA

Keywords: Marijuana, Legalization, Misuse

Abstract :

Background: Marijuana is one of the most frequently used illicit drugs in the United States (U.S.) with 7.3% of the population above 12 years of age reporting marijuana use in the past month. Several U.S. states have legalized and regulated the use of marijuana for recreational purposes. The objective of our study was to evaluate the trends in marijuana calls to the U.S. poison centers (PCs) since these regulatory changes were undertaken.

Methods: The National Poison Data System (NPDS) was queried for exposures to marijuana from 01/01/12 through 12/31/18 using the generic code identifiers. We identified and descriptively assessed the relevant demographic and clinical characteristics. Marijuana reports from acute care hospitals (ACHs), emergency departments (EDs), and overall calls including the public were evaluated as a subset. Trends in marijuana frequencies and rates (per 100,000 human exposures) were analyzed using Poisson regression methods. Percent changes from the first year of the study (2012) were reported with the corresponding 95% confidence intervals (95% CI).

Results: During the study, there were 49,268 toxic exposures to marijuana that were reported to the PCs. The frequency of marijuana exposures increased by 209.4% (95% CI: 202.5%, 216.5%; $p < 0.001$), and the rate of exposures increased by 227.1% (95% CI: 193.8%, 265.9%; $p < 0.001$). Of the total marijuana calls, the proportion of calls from ACHs and EDs decreased from 66.1% to 60.9%, with the percentage of calls from the general public increasing. Multi-substance exposures accounted for 59.2% of the overall marijuana calls and 70% of calls from ACHs and EDs. Approximately 15% of the patients reporting marijuana exposures were admitted to the critical care unit (CCU), with 9% of patients being admitted to a psychiatric facility. The residence was the most common site of exposure (83.4%). Cases were predominantly male (58.7%), with the most common age group being 13-19 years (27.1%). The reports for young children under 12 years of age (6.2% to 19%) and older adults above 60 years (3.5% to 7.6%) increased. Intentional abuse (48.1%) was the common reasons for exposure, with the proportions of suspected suicides being higher in cases reported by ACH (20.3% vs 26.9%). During the study period, the proportion of reported marijuana abuse exposures decreased (50.3% to 35.3%), while unintentional exposures increased (11.4% to 22.4%). Major effects were seen in 5.6% cases and there were 223 deaths reported, with 10 fatalities reported for single substance marijuana exposures. The most frequently co-occurring substances associated with the cases were alcohol (16%) and benzodiazepines (15.7%). Tachycardia (27%) and agitation (17.5%) were commonly observed clinical effects.

Conclusions: Our study results demonstrate a significant increase in the reports of marijuana exposures made to the PCs. The timeline of this study coincides with changes in federal and state laws regarding medical or recreational marijuana use in many states. The exposures in the adolescent age group increased which might be attributed to the unsafe storage practices of adults. Continued surveillance and public health prevention efforts are key to track the population effects of marijuana legalization.

Trial Registration / Funding Information (only) :

n/a

#19112 : Epidemiological and clinical features of non-perfused st-elevation myocardial infarctus.**Authors:**

Sarra Chaouch (1), Dorra Loghmari (2), Ahmed Guesmi (3), Rabeb Mbarek (1), Meriem Ben abdellaziz (4), sondos Laajimi (4), Mounir Naija (4), Naoufel Chebili (4)

1. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 CHU sahloul sousse, CHU sahloul sousse, SOUSSE, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA

Keywords: epidemiology,STEMI,reperfusion traitement

Abstract :**BACKGROUND:**

In Tunisia, the management of acute coronary syndromes with ST-elevation myocardial infarctus (STEMI) is still facing difficulties, particularly in relation to the reperfusion strategy adopted. It is noted that a large number of patients carried by the mobile emergency care unit (MECU) to the emergency departments or the cardiology centers of the university hospitals didn't benefit from a reperfusion treatment(thrombolysis or angioplasty).

The aim of this work was to study the epidemiological and the clinical characteristics of the non-perfused STEMI compared to the perfused ones , and to determine the factors behind the decision of reperfusion.

METHODS:

A comparative prospective study including 305 cases of STEMI supported by the MECU on our regions were collected over a period of 12 monthes from January 2018 to December 2018.

RESULTS: 135 patients (44.26%) did not receive any reperfusion treatment during the first 24 hours. The rest (170 patients) had either thrombolysis or were sent directly to the catheterization laboratory. 103 of the non-reperused patients were male against 138 reperused ones. The average age was 63 for the non-reperused patients compared to 59 years for the reperused ones. 70 calls for non- reperused patients came from peripheral hospitals, while 53 came from university hospitals. 74% of patients who were not reperused, the received call was to report a diagnosed STEMI versus 23% for undiagnosed chest pain. A history of coronary artery disease was observed in 21% of non-reperused patients, hypertension in 37% of patients, and diabetes in 33% . 8 patients among the non-reperused group had a history of *Chronic Obstructive Pulmonary Disease*(COPD), and 31 were smokers. The predominant territories for the non reperused STEMI were inferior in 31% and anterior in 19% of patients. 33% of non-reperused STEMI (45 patients) present complications during medical carriage: 3 cardiac arrests , 5 cardiogenic shock, 11 with left heart failure, 10 arrhythmia and 15 conduction disorder. The rate of complications in reperused STEMI was almost the same (30% of cases).The average delay between the show of early signs of pain and the arrival of the MECU was 4 hours for the non-reperused patients and 3 hours for the reperused patients . The univariate statistical analyses showed a significant difference between non- reperused STEMI and reperused STEMI according to the history of coronary artery disease (17 reperused versus 29 not reperused with a significant difference at $p=0.006$) as well as for high blood pressure (40 reperused STEMI against 50 non- reperused at $p=0.01$) and COPD (2 reperused against 8 non- reperused at $pp=0.02$). On the other hand, there was no significant difference between the two groups according to the rates of complications.

CONCLUSION:

Our study shows that patients with high blood pressure history, COPD and coronary artery disease suffering from STEMI are less likely to benefit from reperfusion. The rate of early STEMI complications does not appear to differ between reperused and non-reperused patients, which may be associated with sampling biases.however,a study with much more representative sample could better clarify us.

Trial Registration / Funding Information (only) :

no funding

#19114 : Tramadol Exposures Reported to the U.S. Poison Centers

Authors:

Saumitra Rege (1), Jennifer Ross (2), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA
2. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, CHARLOTTESVILLE, USA

Keywords: Tramadol, Opioid, Patterns, Overdose

Abstract :

Background: There were more than 72,000 overdose-related deaths in the United States in 2017, with 68% of these fatalities involved opioids. Tramadol prescriptions increased by 88% between 2008 and 2013. Tramadol-related emergency department visits involving misuse or abuse of tramadol increasing by 250% between 2005 and 2011. This study aims to examine the national trends in tramadol exposures reported to U.S. poison centers (PCs).

Methods: The National Poison Data System (NPDS) was queried for all closed, human exposures to tramadol from 2012 to 2018 using the American Association of Poison Control Center (AAPCC) generic code identifiers. We identified and descriptively assessed the relevant demographic and clinical characteristics. Tramadol reports from acute care hospitals and EDs were analyzed as a sub-group. Trends in tramadol frequencies and rates (per 100,000 human exposures) were analyzed using Poisson regression methods. Percent changes from the first year of the study (2012) were reported with the corresponding 95% confidence intervals (95% CI).

Results: There were 84,800 tramadol exposures reported to the PCs from 2012 to 2018, with the calls decreasing from 13,113 to 9,599 during the study period. Among the overall tramadol calls, the proportion of calls from acute care hospitals and EDs increased from 53.5% to 60.9% from 2012 to 2018. Multiple substance exposures accounted for 52.1% of the overall tramadol calls and 62.4% of the calls from acute care hospitals and EDs. The most frequent co-occurring substances reported were benzodiazepines (13.9%) and alcohol (8.9%). The residence was the most common site of exposure (95.7%) and 64.4% cases were enroute to the hospital when the PC was notified. Tachycardia and hypertension were the most frequently demonstrated clinical effects. Naloxone was a reported therapy for 7.9% cases, with this therapy being performed prior to PC contact in most cases. Demographically, 61.2% of cases were females, and the most frequent age groups were 20-39 years (33.1%) and 40-59 years (25.8%). Suspected suicides (45.3%) and intentional misuse (7.8%) were commonly observed reasons for exposure, with the proportion of suicides being higher in cases reported by acute care hospitals and EDs (66.2%). Approximately 18% of the patients reporting tramadol exposures were admitted to the critical care unit (CCU), with 11% of patients being admitted to non-CCU. Major effects were seen in 5.1% cases and the case fatality rate for tramadol was 0.5%, with 416 deaths reported. There were 208 deaths reported within acute care hospitals and EDs during the study period. The frequency of tramadol exposures decreased by 26.8% (95% CI: -28.8%, -24.8%; $p < 0.001$), and the rate of tramadol exposures decreased by 20.7% (95% CI: -29.9%, -1.4%; $p = 0.002$).

Conclusions: PC data demonstrated a decreasing trend of tramadol exposures, which may in part be attributed to the rescheduling of this medication by the Drug Enforcement Administration to Schedule IV in 2014. Our study demonstrated a significant proportion of tramadol exposures associated with suicide. Despite an overall decreasing trend in tramadol exposures, there was an increase in tramadol exposure reports from acute care hospitals and EDs during the same time period.

Trial Registration / Funding Information (only) :

n/a

#19115 : Usefulness of digital symptom checkers for urgent health problems: A systematic review of the evidence**Authors:**

Duncan Chambers (1), janette turner (2), Anna Cantrell (1), Louise Preston (1), Susan Baxter (1), Andrew Booth (1)

1. School of Health & Related Research, University of Sheffield, Sheffield, UK

2. Health Services Research, University of Sheffield, Sheffield, UK

Keywords: evidence synthesis, systematic reviews, urgent care, symptom checkers, triage; digital health, self-diagnosis, service use

Abstract :

Background: One way people with urgent health problems can seek guidance is by using digital and online symptom checkers and. These services generally provide people with several possible diagnoses and/or suggest a course of action based on their reported symptoms. The NHS in England is introducing a digital platform (NHS111 Online) alongside the NHS111 urgent care telephone service. We conducted a systematic review of evidence about digital and online symptom checkers for urgent health problems.

Methods: We conducted focused searches of seven bibliographic databases supplemented by phrase searching for names of known symptom checker systems and citation searches of included studies. We conducted searches for the years 2006 – 2018. PICO inclusion criteria were: Population: General population seeking information online or digitally to address an urgent health problem. Intervention: Any type of online or digital service designed to assess symptoms, provide health advice and direct patients to appropriate services. Comparator: telephone or face to face assessment for urgent health problems or comparative performance in tests or simulations. Outcomes: safety; clinical effectiveness; costs or cost-effectiveness; diagnostic and triage accuracy; use of and contacts with health services; compliance with advice received; patient/carer satisfaction; and equity and inclusion. Any type of study design was included. One reviewer completed screening of potential studies for inclusion, data extraction and quality assessment with a sample checked for accuracy and consistency. We used narrative synthesis the included studies structured around the pre-defined research questions and key outcomes. For each outcome overall strength of evidence was classified as 'stronger', 'weaker', 'conflicting' or 'insufficient' based on study numbers and design.

Results: Twenty nine publications describing 27 studies were included and these were diverse in terms of their design and methodology. In absolute terms the overall strength of the evidence base was weak with observational studies dominating although this did vary by individual outcome. There was little evidence to suggest that digital and online symptom checkers are unsafe although studies reporting this outcome were generally small. Diagnostic accuracy was highly variable between different systems but generally low where health professionals' diagnoses were used as the reference standard. Algorithm-based triage tended to be more risk-averse than that of health professionals but overall results on triage accuracy were inconsistent as was the evidence on service use effects. There was very limited evidence on patients' reactions to online triage advice and whether they follow the advice or seek further help or information. There was a clear consensus that younger and more highly educated people are more likely to use these services and high levels of satisfaction with digital and online triage services were reported.

Conclusions: A diverse range of interventions, study designs and outcomes is included in the current evidence base but overall the evidence is weak. This means there are major uncertainties about the likely impact of a digital urgent care service in the NHS. It will be important to monitor and evaluate the services using all available data sources and by commissioning high-quality research.

#19116 : Recognition of sepsis through emergency medical services**Authors:**

Markus Wehler (1), Thomas Händl (1), Jürgen Neubauer (1)

1. Emergency Department, University hospital Augsburg, Augsburg, GERMANY

Keywords: sepsis, qSOFA, pre-hospital, emergency medical services

Abstract :**Recognition of sepsis through emergency medical service**

Background:

Sepsis is a common and serious disease process for which early recognition and intervention can significantly improve clinical outcomes. Despite this, sepsis remains underrecognized and therefore undertreated in the prehospital setting. Recent recommendations by the Society of Critical Care and European Society of Intensive Care Medicine advocate use of the qSOFA (quick Sepsis-related Organ Failure Assessment) score in non-ICU settings to screen for septic patients at greater risk for poor outcomes. Accordingly emergency medical services (EMS) in Bavaria were trained to identify septic patients in the prehospital setting. This retrospective cohort study sought to evaluate the effectiveness of this training intervention.

Methods:

We performed a retrospective study of all patients transported by EMS to our ED during two 6-month periods. All patients with a suspected or proven infection and sepsis after the ED workup were included. 303 patients were included during the 6 month period before the EMS training for sepsis recognition and 459 patients were included in the 6 month period following the EMS training. The sensitivity and specificity of a qSOFA score ≥ 2 for ED identification of patients at risk of complication was calculated.

Results:

During the 12 month study period 3.1% of all EMS-transported patients were diagnosed with sepsis in the ED. Mean age of the study cohort was 72 ± 13 years, 59.4% were male, 60% needed intensive care, hospital mortality was 37.7%. No significant differences in clinical and outcome variables between the two study periods were noted. The proportion of patients identified with sepsis by EMS did not increase in the study period following the EMS training. In both study periods the identification of a septic disease in the pre-hospital setting was missed in 82% of the patients. Only in 3.8% a qSOFA score ≥ 2 was documented. Respiratory rate was the vital parameter most often missed by EMS (60%). In the ED the sensitivity and specificity of a qSOFA score ≥ 2 for identification of septic patients with poor outcome was 37.2% and 84.2%, respectively.

Conclusions:

A single EMS training period for identification of septic patients in the prehospital setting is not sufficient. A qSOFA score ≥ 2 had a low identification sensitivity in selecting septic patients at risk of complication upon arrival in the ED. An improved method for pre-hospital identification of septic patients is needed.

Trial Registration / Funding Information (only) :

Funding: University of Augsburg research fund

#19117 : Hemodynamic evaluation by a simple goal-directed ultrasound protocol in patients with undifferentiated shock in the Emergency Department: prospective multicenter observational study**Authors:**

Pierre Leroux (1), Yannick Lebreton (2), Quentin Le Bastard (3), François Javaudin (1), Philippe Pes (1), Idriss Arnaudet (1), Hugo de Carvalho (3), Philippe Le Conte (1)

1. Urgences, Hôtel Dieu, Nantes, FRANCE
2. Urgences, Centre Hospitalier de Mont de Marsan, Mont de Marsan, FRANCE
3. Urgences adultes, Hôtel Dieu, Nantes, FRANCE

Keywords: shock, ultrasound, treatment

Abstract :**Background**

Shock, a life-threatening condition, frequently occurs in the Emergency Department (ED). It requires a prompt accurate treatment. Usual diagnosis procedure (UDP) including clinical, biological and radiological exams is frequently conclusiveness and time-consuming. However, a treatment can be life-saving in a case and harmful in another. Thus, an exact diagnosis is warranted. Emergency Physician (EP) ultrasound has demonstrated to be useful in these situations.

The goal of this study was to investigate a simple B-mode echocardiographic protocol (BEP) to improve both diagnosis and initial treatment, by accessing changes induced by BEP.

Methods

It was a prospective observational study in 2 French ED between 1/10/2016 and 30/11/2018. Included patients were a convenience sample of patients older than 18 years with a shock defined by systolic arterial pressure (SAP) < 100 mm Hg or less 40 mm Hg below the usual SAP. Exclusion criteria were documented palliative care, clinically evident hemorrhagic shock, anaphylactic shock and acute coronary syndrome.

After informed consent approval and UDP, the EP established the diagnosis hypothesis (H1), and treatment (T1) without applying its. Items were chosen in closed lists: diagnosis (hypovolemic including sepsis, left ventricular failure, right ventricular overflow, tamponnade, unknown) and treatment (fluid challenge, inotropic agent, thrombolysis, pericardial drainage, unknown). A BEP was then performed and another diagnosis hypothesis (H2) and treatment (T2) were established. Length of realization, degree of certainty (DC) (from 1 to 10) before and after BEP, difficulty evaluated on a scale (from 1, impossible to 10, very easy) were recorded. T2 was applied to the patient. Reference diagnosis (H3) and treatment (T3) were determined by a 3 experts adjudication committee with the whole patient's file.

The main objective was the concordance rate between H1, T1 and H2,T2 according to H3 and T3, respectively. Secondary objectives were hypothesis and treatment changes induced by BEP, DC, length and difficulty of BEP. Categorical data expressed as percentage [95% confidence interval] were compared with Mac Nemar test. Numerical data, expressed as mean \pm standard deviation were compared with t test.

The study was approved by the ethical committee. For a concordance of 60% before BEP and 90% after, with an alpha risk 0.05 and beta 0.10, the required number of patients was 84.

Results

85 patients were included, 41 women, 44 men, mean age 73 ± 14 years old. H1 diagnosis was hypovolemic 44, left ventricular failure 10, right ventricular overflow 6, tamponnade 1 and unknown 24. BEP induced 50 diagnosis changes (59% [48-69%]). 45 of them (90%[78-96%]) were in accordance with H3. H2 diagnosis was hypovolemic 56, left ventricular failure 8, right ventricular overflow 9, tamponnade 6 and unknown 1. A similar trend was observed for treatment with 50 treatment changes between T1 and T2 (59% [48-69%]) with accordance with T3 in 81 patients (95% [88-98%]). DC evolved from 3.9 ± 2.1 before BEP to 9.3 ± 1.1 after ($p < 10^{-4}$). Length was 13 ± 5 min, difficulty 7 ± 2 .

Discussion and conclusion

In our population of undifferentiated shock, BEP improved the diagnosis accuracy and secured the initial treatment.

#19120 : Adherence of the guidelines in an Italian ED in case of minor head trauma (MHI) in real life**Authors:**

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), FABIO SCIUTTI (2), MIRKO BELLATO (2), GIORGIO IOTTI (2), SABINO LUZZI (3), RENATO GALZIO (3), ELVIS LAFFI (4), FEDERICO ZAPPOLI THYRION (5), STEFANO PERLINI (6), MARIASERENA PIOLI DI MARCO (5), LUCA CICERI (7), FEDERICA MANZONI (8), GIUSEPPE CRESCENZI (9), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. INTENSIVE CARE UNIT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. Neurosurgery, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. NEURO RADIOLOGICAL, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. , POLICLINICO , pavia, ITALY
7. STUDENT EMERGENCY DEPARTMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
8. Clinical Epidemiology and Biometry Unit, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
9. emergency department, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: minor head trauma, EMERGENCY DEPARTMENT, guidelines

Abstract :

Background: Minor head injury (MHI) represents one of the most common causes of presentation to emergency rooms. The population is very varied, both at the epidemiological level and of the risk factors for bleeding (RF). It follows that in line with the current guidelines a very different therapeutic diagnostic pathway. Pt with more severe RF should in fact remain observed for 24 hours, the others for the period between 4 and 8 hours. Different as well is the execution of a CT Head.

Pt& Methods : We enrolled subject with MHI afferent at our ED for 10 consecutive months (2016). We evaluated the guideline adherence. We collected the data necessary to stratify the patients (pt) into the risk groups described by the Italian guidelines, and separately, by the local operative instructions. This took into account age, GCS score, mechanism of injury, therapy class, and clinical diaries. In short, Italian guidelines recommend that the high- and medium-risk groups should undergo a CT scan within 6 hours (CT6), while pt on anticoagulants should repeat the CT scan at 24 hours (CT24), and pt in the low risk category can be discharged without a CT scan.

Results & discussion : We enrolled 1480 pt who reported MHI. According to Italian guidelines, 1079 (73%) were at low risk, 185 (13%) at medium, 155 (10%) medium-high, and 61 (4%) high risk. In the high-risk group, 94% of pt was submitted CT scan, while in the medium-risk group 84% did. The low-risk group, which need not undergo a CT according to the Italian guidelines, underwent a CT in 58% of cases. In group of pt with coagulation defects (including anticoagulant therapy), 97% underwent a first CT, while the recommended CT24 was performed in 58%. The performance analysis on these guidelines also showed a calculated sensitivity for ICH diagnosis in our population of 53.5% (95% CI: 44.9% to 61.9%) and a specificity of 75.4% (95% CI: 73.1% to 77.6%). Negative predictive value (NPV) was 94.4%, and positive predictive value (PPV) was 17.2%. The false negative population (60 cases) had a median age of 81 years (interquartile range (IQR) 75.5 to 86). The department's operative instructions performed significantly better both considering adherence and sensitivity. Pt in risk groups 2 and 3, for whom an urgent CT is recommended, underwent at least one CT in 91% of cases. Pt in risk group 1, for whom a deferrable CT is recommended, underwent at least one CT scan in 77% of cases. The remaining pt (group 0), whom the guidelines recommend discharging without further investigation, underwent a CT scan in 45% of cases. The departments' operative instructions had a sensitivity of 80% (95% CI: 71% to 86%) and a specificity of 51% (95% CI: 49% to 54%) on the study population. NPV was 96%, and PPV was 13%. As with the Italian guidelines, the false negative population (26 pt) had a relatively high median age of 78.5 years (IQR: 63 to 87).

#19122 : Two case studies about "trainees in difficulty"

Authors:

Muhammad Qureshi (1), Taimur Butt (1)

1. Emergency Medicine, King Faisal Specialist Hospital & Research Center, Riyadh, SAUDI ARABIA

Keywords: Trainees in difficulty

Abstract :

Introduction: The practice of doctors irrespective of their grades and seniority should be guided by six core principles of professionalism: Competency; Inter-personal relationships; Managing professional boundaries; Consistency and reliability of practice; Reflection and learning; Commitment to service. Two EM trainees in difficulty from two different countries (UK & KSA) with different cultures and approach to trainee issues will be discussed.

Case scenario 1: A senior nurse made a written complaint about a trainee. Allegedly, during a clinical conversation the physician became very rude towards her and started shouting. They were both managing a patient together in a busy Emergency department (ED). The nurse was concerned that the patient's ED length of stay was over 3 hours without a disposition plan and the patient was likely to breach the "ED 4-hour target" set by the UK Department of Health. Recently, a similar complaint was reported by a consulting service about the same doctor. Allegedly, he had been very argumentative, rude and obstructive during a referral from the ED. Apparently, he did not give adequate clinical information about the significant blood results of a patient to the receiving clinician and authorised the patient's transfer to inpatient bed. This error caused a significant delay in patient's management.

Case scenario 2: A young Emergency Medicine program director (PD) was approached by a female resident during the night-shift requesting a change in her schedule. Suddenly, during the conversation the trainee requested to drop out of the program for three months. The director started to interrogate the trainee in front of her colleagues on the ED shop-floor. He was perceived by staff as being arrogant and insensitive to the issue raised by the trainee. When the trainee suggested to continue the conversation in private, the director took her to his office away from the main ED for a closed door discussion without a chaperone. The trainee became uncomfortable and could not express her social situation and reasons behind her leave request. The conversation ended without any further exchange of information or proposed solutions. This resulted in multiple sick leaves from the trainee and a complaint against the program director by the trainee.

Problem solving Approach: Comprehensive information gathering about the trainees' practice in previous placements, feedback from other colleagues, detailed overview of any health problems, domestic issues and conducting a fact finding meeting with the trainees and the complainants paves the way to plausible solution. The available hierarchy of resources can be extremely helpful.

Conclusions: Early identification of complexities around a trainee in difficulty is very important to minimise risk to the trainee, his colleagues and to patients. The issues around a problem trainee can be multifaceted. A trainee without a previous run through training and career moves can display challenging symptoms of difficulty. Early dissection and discussion of the issues and putting evidence based appropriate action plans can be key steps to help trainee in difficulty. Trainers can also compound problems if they don't approach the trainees' issues sensitively and in a professional manner.

#19123 : Mechanical Ventilation During Cardiopulmonary Resuscitation - a Comparison Between Automated Volume Control Ventilation and New Designed Ventilation with an Impedance Threshold Function**Authors:**

Jin Kui (1), Xu Jun (1), Yu Xuezhong (1)

1., Peking Union Medical College, Beijing, CHINA

Keywords: Cardiac arrest, ventilation, ITD

Abstract :**Background and Objectives**

The best way to ventilate the lungs during CPR remains unknown. Heart-lung interaction plays an important role in the blood-flow induction during cardiopulmonary resuscitation. Previous researches have shown that decreased intrathoracic pressure induced by impedance threshold valve resulted in improved efficacy of cardiopulmonary resuscitation. In this study, we investigated the influence of a novel ventilator mode which designed to decrease intrathoracic pressure during decompression and traditional ventilation mode on pleural pressure, coronary perfusion pressure, cerebral blood flow, and return of spontaneous circulation in a pig model.

Methods

2 three-month-old female domestic pigs were under general anesthesia with endotracheal intubation. Arterial and central venous catheters were inserted, carotid artery blood flow and pleural pressure were recorded using transonic probe and esophageal balloon catheter. Ventricular fibrillation was induced and untreated for 6 min. Each animal was then received continuous compressions and 2 types of ventilation mode for 6min each (first V-AC with triggering turned-off then 6min later switch to the newly designed CPRV mode that has the function of impedance threshold which tends to decrease the pleural pressure).ResultsCoronary perfusion pressure, end-tidal carbon dioxide and carotid blood flow in the CPRV mode were higher than those achieved in AC mode group with significant differences. However, no difference was observed in arterial blood gas parameters after switch the ventilation mode. Pleural pressure was significantly lower in the CPRV mode. Furthermore, the pleural pressure gap between compression and decompression phase were much higher during CPRV mode compared to AC mode which may explain the increase of compression efficacy.

Conclusions

Novel CPRV ventilation mode may increase the compression efficacy compared to traditional AC mode during CPR which may be explained by the increased variation of pleural pressure.

#19125 : intracranial hemorrhage (ICH) in Minor head injury (MHI): Safety of new oral anticoagulants (NOAC) compared to traditional vitamin K antagonists (VKA)**Authors:**

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), FABIO SCIUTTI (2), MIRKO BELLIATO (2), GIORGIO IOTTI (2), SABINO LUZZI (3), RENATO GALZIO (3), ELVIS LAFE (4), FEDERICO ZAPPOLI THYRION (5), STEFANO PERLINI (6), MARIASERENA PIOLI DI MARCO (5), LUCA CICERI (7), FEDERICA MANZONI (8), GIUSEPPE CRESCENZI (9), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. INTENSIVE CARE UNIT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. Neurosurgery, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. NEURO RADIOLOGIC, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. , POLICLINICO , pavia, ITALY
7. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
8. Clinical Epidemiology and Biometry Unit, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
9. emergency department, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: Minor head injury, intracranial hemorrhage, new oral anticoagulants, vitamin K antagonists, EMERGENCY DEPARTEMENT

Abstract :

Background: Minor head injury (MHI) represents one of the most common causes of presentation to emergency rooms in Italy and abroad, and it makes up about 88% of all cases of presenting head trauma. It's universally recognized that patients under chronic anticoagulant therapy have a roughly doubled risk of developing an intracranial hemorrhage (ICH) following an MHI, and have a worse long-term outcome in case they develop MHI. There are few studies that compare the ICH risk respect to patients in new oral anticoagulants (NOAC) compared to traditional vitamin K antagonists (VKA), such as warfarin.

Patients & Methods : Assess whether patients in therapy with NOACs have a different rate of ICH at the Computerized tomography (CT) compared with patients treated with VKAs. Patients were subjected to CT at time zero and after 24 hours, according to international guidelines. Other clinical and anamnestic parameters are also collected with the purpose of running internal performance analyses and orientating sub-group analyses. We excluded patients with Glasgow Coma Scale <14, patients without a traumatic history (i.e. spontaneous hemorrhages), patients with injuries and mechanisms only involving the face, those being re-admitted for an already registered trauma, and those with incomplete data.

Results & discussion : We enrolled 236 patients scoagulated who reported MHI, of which 157 in VKA and 79 in NOAC. The two populations were comparable in age (ETA average VKA = 82 AA, NOAC = 81 aa), sex (40% M VKA; 38% NOAC), prevalence of other bleeding risk factors and trauma dynamics (minor dynamics). They were comparable also for clinical presentation to triage as evidenced by the attribution of priority code to the medical examination. (Pz in VKA: 15% green Code, 84% yellow code, 1% Code Red; PZ in NOAC: 14% green Code, 84% code yellow, 1% Code Red). The two populations are also overlapping from the point of view of the vital parameters (VKA: FC media = 78bpm, PA media = 134/73; satO2 = 96%; NOAC: FC media = 78bpm, PA average = 137/74; satO2 = 96%), from time to doc (both about 42 min) and the Length Of Stay (both about 19h). However, patients with VKA have worse outcome, ie have a ICH in 17 % cases, of which 14 % already visible to the first CT and 3 % at the second CT. Patients in NOAC instead have a ICH in 4% cases, of which 3% already visible to the first CT and <1% at the second CT. The return to 30 days was the result of overlapping between the two groups: 9% for the group in VKA and 9% for the group in NOAC.

Conclusion & perspectives : These results suggest that NOACs have a better safety profile than VKAs in the setting of MHI.

#19129 : miR-182-5p contributes to intestinal injury in a murine model of staphylococcus aureus pneumonia-induced sepsis via targeting Surfactant protein D**Authors:**

Du Xianjin (1), Wei Jie (2)

1. Emergency Department, Renmin Hospital of Wuhan University, Wuhan, CHINA
2. Emergency Department, Renmin Hospital of Wuhan University, Wuhan, CHINA

Keywords: intestinal injury, sepsis, Surfactant protein D

Abstract :

Increasing microRNAs are found to exert significant roles in the regulation of many diseases. Sepsis is a severe clinical disease, which is resulted from the excessive host inflammation response to the infection. Growing evidence indicates that staphylococcus aureus pneumonia is a significant cause of sepsis, which can lead to the intestinal injury, inflammation, and apoptosis. Studies have shown that miR-182-5p can serve as a tumor oncogene or a tumor suppressive miRNA in various cancers, however, its biological role in sepsis is still uninvestigated. Here, we reported that miR-182-5p was obviously increased in staphylococcus aureus pneumonia mice models. Loss of miR-182-5p inhibited intestinal damage and intestinal apoptosis as indicated by the TUNEL assay. In addition, we observed the lack of miR-182-5p altered the local inflammatory response to pneumonia in intestine. Elevated TNF- α and IL-6 levels were observed in intestinal tissue of pneumonia groups compared to the shams. Furthermore, miR-182-5p KO pneumonia group demonstrated a decreased levels of intestinal TNF- α and IL-6. Primary murine intestinal epithelial cells were isolated and cultured in our investigation. We exhibited down-regulation of miR-182-5p repressed intestinal epithelial cells apoptosis and rescued the cell viability. Meanwhile, miR-182-5p caused an elevated cell apoptosis and reduced the cell proliferation. Moreover, the surfactant protein D (SP-D) binds with the bacterial pathogens and remove the pathogens and apoptotic bodies, which exhibits important roles in modulating immune responses. It was displayed in our study SP-D was greatly decreased in pneumonia mice models. SP-D was predicted as a downstream target of miR-182-5p. These data concluded that miR-182-5p promoted intestinal injury in staphylococcus aureus pneumonia-induced sepsis via targeting SP-D.

Trial Registration / Funding Information (only) :

This study was supported by the National Natural Science Foundation (NO. 81601670) and Hubei Province Natural Science Fund(2014CFB302)

#19130 : EVALUATION OF TESTOSTERONE LEVEL, BURN OUT SYNDROME AND WORK SATISFACTION IN FEMALE EMERGENCY SERVICE WORKERS**Authors:**

dilek atik (1), başar cander (1), bensu bulut (1), hilmi kaya (1), ramiz yazıcı (1), ramazan güven (1), cemel kazezoğlu (2)

1. emergency department, kanuni sultan suleyman research and training hospital, istanbul, TURKEY

2. Department of Medical Biochemistry, kanuni sultan suleyman research and training hospital, istanbul, TURKEY

Keywords: TESTOSTERONE, BURN OUT SYNDROME, WORK SATISFACTION

Abstract :

INTRODUCTION: Burnout is an insidious process which develops in time and reflects emotional, mental and physical exhaustion . It is emphasized that burnout is usually seen in jobs that require face-to-face interaction with people. The concept of job satisfaction, first introduced in 1920's was defined as a reflection of the feelings of the employees about their works. The effects of testosterone, the male sex hormone and a part of the neuroendocrin system, on behaviour and mood in humans have been known since the early ages. In this context, the aim of this study was to valuate the effect of testosterone on the status of burning out and job satisfaction.**METHODS:** This study was conducted prospectively after the approval of the Ethics Board of our University. Decision number 2019/03/72. Maslach Burnout Inventory and Minnesota job satisfaction scale were used as the methods to evaluate the level of burnout and job satisfaction in women, respectively. For this reason, Kruskal Wallis –H tests were used for statistical evaluations based on categorical and binary variables. Spearman rank correlation in non-parametric data and Pearson correlation in parametric data were used as correlation methods.**FINDINGS:** A total of 95 individuals from the female emergency service workers were included in the study. According to the Maclach Burnout Inventory, the level of exhaustion was high in 67.3%, intermediate in 21% and low in 11.5% of the participants. Among the laboratory data, mean level of testosterone was found as 29.4ng/dL. Mean testosterone level was 31.3ng/dL, 30ng/dL and 26ng/dL among the participants with high, intermediate and low level of burnout, respectively. When the testosterone level and Maslach burnout inventory was evaluated, a significant difference was found between them, although no lineer association was found. Mean testosterone was 24.47ng/dL and 27.12ng/dL in workers with a job satisfaction of less than 3 and more than 3, respectively.**DISCUSSION:** This present study was planned since no study directed to the association of hormones and burnout and job satisfaction was encountered in the literature among the burnout and job satisfaction cases. When the burnout inventory and testosterone levels was evaluated, testosterone level was found to be high in the workers with a high level of exhaustion and low in the workers with a low level of exhaustion. In this present study, when the association of job satisfaction and testosterone level was evaluated, mean level of testosterone was found to be high in individuals with high job satisfaction and low in individuals with low job satisfaction. In this context, when burnout and job satisfaction status is evaluated, mean testosterone was found to have no parallel association with both conditions, contradictory to the expectations. This condition demonstrates that testosterone hormone might have different effects.**CONCLUSION:**Testosterone hormone was suggested to have an effect on burnout. When evaluated in terms of job satisfaction, testosterone level was found to be evaluated in individuals with high job satisfaction and this suggested that testosterone hormone had variable effects in human body. The results of this study are suggested to conduct future studies.

#19131 : intracranial hemorrhage (ICH) in Minor head injury (MHI): The role of old age**Authors:**

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), FABIO SCIUTTI (2), MIRKO BELLATO (2), GIORGIO IOTTI (2), SABINO LUZZI (3), RENATO GALZIO (3), ELVIS LAFFI (4), FEDERICO ZAPPOLI THYRION (5), MARIASERENA PIOLI DI MARCO (5), LUCA CICERI (6), STEFANO PERLINI (7), FEDERICA MANZONI (8), GIOVANNI RICEVUTI (1), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. INTENSIVE CARE UNIT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. Neurosurgery, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. NEURO RADIOLOGICAL, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. STUDENT EMERGENCY DEPARTMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
7. , POLICLINICO , pavia, ITALY
8. Clinical Epidemiology and Biometry Unit, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: intracranial hemorrhage, Minor head injury, old age, EMERGENCY DEPARTMENT

Abstract :

Background: Minor head injury (MHI) represents one of the most common causes of presentation to emergency rooms in Italy and abroad, and it makes up about 88% of all cases of presenting head trauma. The elder has a higher risk of developing an intracranial hemorrhage (ICH) following an MHI, and have a worse long-term outcome in case they develop MHI.

Patients & Methods : We evaluated all patients who had access for MHI to our ED over 2017. Have been subjected to CT according to the current guidelines. The population of the study was divided into two categories according to age. Subjects older (elderly population EP) than or less (young people YP) than 75 years. Objective Rimario Evaluate the ICH rate we also evaluate the severity of the presentation by accompanying it the triage code, the vital parameters, the GCS and the severity of the result, accompanied by the hospitalization rate and the percentage of returns. Other clinical and anamnestic parameters are also collected with the purpose of running internal performance analyses and orientating sub-group analyses.

Results & discussion : We enrolled 2165 patients who reported MHI, of which 1229 75 y EP. The EP consists of 17-18% compared to the number of total accesses, while covering 44% of the population with MHI. The prevalence of sex was the following 58 % M for YP and 34 % M for EP. The two populations were comparable for trauma dynamics (minor dynamics) and for the vital parameters (YP: FC media = 80 bpm, PA media = 135/80; satO₂ = 98%; OP: FC media = 78bpm, PA average = 145/78; satO₂ = 98%). The two groups differ instead for the clinical presentation as evidenced by the attribution of priority code to the medical examination (YP: 69% green Code, 28% yellow code, 2% Code Red; EP: 38 % green Code, 60% code yellow, 1% Code Red) and from GCS (YP: 1% have GCS=14, 99% have GCS=15; EP: 4% have GCS=14, 96% have GCS=15). Older people have higher ICH rates (12% vs 5%) a higher hospitalization rate (14% vs 6%), a higher rate of indentation at 30 days (7% vs. 3.5%). They also have longer process and LOS times (respectively 9 h vs 4 H and 30 m and 10 H vs 5 H and 30 M. Older people take more often anti-platelet or anticoagulant therapy, in fact between YP 88% did not take drugs, 8% was in antiplatelet therapy, 2% in VKA, 1% in NOAC; While between OP 38% did not take drugs, 40% was in antiplatelet therapy, 14% in VKA, 7% in NOAC

Conclusion & perspectives : While age represents a risk factor for ICH, on the other hand the elder is a fragile subject more prone to falls, resulting in increased risk of MHI. Elder is also at risk for changes in his homeostasis and for taking more drugs. Elderly population is more exposed to falls with MHI. Outcomes are worse in terms of ICH, hospitalization and returns.

#19132 : The Prognostic Value of Pulse Oximetry (POP) Waveform During Cardiopulmonary Resuscitation**Authors:**

Yu Xuezhong (1), Xu Jun (1), Jin Kui (1)

1. , Peking Union Medical College, Beijing, CHINA

Keywords: Cardiac arrest, pulse oximetry, prognostic

Abstract :**Background and Objectives**

Quality of cardiopulmonary resuscitation(CPR) is associated substantially with the mortality and morbidity of cardiac arrest patients. However, there is little technology available to provide non-invasive real-time feedback on the effectiveness of CPR. Blood Oxygen Saturation (SpO₂) waveform is associated with intention, frequency, and interruption of chest compression. In this study, we tend to examine whether finger pulse oximeter plethysmograph(POP) waveform can be used to monitoring the effectiveness of CPR.

Methods

This was a prospective multicenter observational study that includes emergency departments from 14 teaching hospitals in China from 2013 - 2014. All patients with out of hospital cardiac arrest (OHCA) were enrolled in this study. Patients who enrolled were resuscitated according to 2010 AHA CPR guideline. Demographic information, ECG, pulse oxygen saturation, PetCO₂ during CPR was collected. The area under the POP curve (AUCp) and amplitude of the curve (Amp) was recorded and analyzed between those with and without return of spontaneous circulation (ROSC). Furthermore, predictive value was also compared between POP curve and PetCO₂.

Results

617 OHCA patients were admitted during the period of our study, among them, 400 were finally enrolled. 102 patients got ROSC in the emergency departments while 298 patients without. Among patients with ROSC AUCp, Amp, and PetCO₂ was significantly higher compared to those without ROSC (all $p < 0.05$). Both AUCp and Amp had good correlation with PetCO₂. In addition, cutoff value of AUCp > 2726 PVPg and Amp > 58 PVA had a predictive value of ROSC with a sensitivity of 0.81 and 0.80, specificity of 0.67 and 0.68 respectively. On the other hand, PetCO₂ in our study with cutoff value of 14.5mmHg had a sensitivity of 0.676 and specificity of 0.565 to predict ROSC.

Conclusions

POP may be used as a novel method for feedback of the effectiveness of CPR.

#19133 : Acute heart failure without peripheral hypoperfusion: Prevalence and prognosis of increased Blood lactate**Authors:**

fatma mejri (1), hela ben turkia (1), emna rezgui (1), ines chermiti (1), emna ennouri (1), sawssen chiboub (1), monia ngach (1), sami souissi (1)

1. emergency departement , regional hospital of ben arous , ben arous , TUNISIA

Keywords: acute heart failure , blood lactate , emergency departement, prognosis

Abstract :**Introduction:**

Increased blood lactate (IBL) may reflect inadequate tissue perfusion, his prognostic value in the emergency department (ED) has not been studied especially in case of acute heart failure without hypoperfusion (AHFWH).

The aim of the study is to evaluate signs the prevalence and prognosis of IBL in patients with AHFWH admitted in the ED.

Method:

Monocentric prospective observational study. Inclusion of patients aged more than 18 years old admitted in the ED with acute heart failure without peripheral signs of hypoperfusion according to European Society of Cardiology guidelines criteria.

Blood lactate assay at the admission to ED. IBL defined as blood lactate more than 2 mmol/l.

Comparative study of clinical and prognostic parameter in two groups: IBL and normal blood lactate (NBL).

Results:

Inclusion of 193 patients. Mean age 69 +/- 12 years , sex ratio 1. one hundred and five (54%) patients had an IBL. the comparative study of IBL group versus (vs) NBL group found : sex ratio = 1.38 vs 0.6 (p= 0.011) ; age =70 +/- 11 vs 68 +/- 13 (p=0.029). medical history of coronaropathy n (%) = 41(39) vs 19(21) (p=0.009); tabagism n(%)= 49 (47) vs 23(26)(p<0.001); chest pain at admission n(%) 21(20) vs 8(9) (p=0.035) ; acute onset of dyspnea n(%)=67(64)vs 32(36) (p<0.001);high blood pressure n(%)=82(78) vs 57 (65)(p=0.04); mean capnia 48,6 +/- 15 mmhg vs 42 +/- 13 mmhg (p=0.014).

All deaths (n=8) are noted in IBL group.

Conclusion:

IBL at admission is a predictive factor of mortality among patients presented to the ED with AHFWH.

#19135 : Is Antiplatelet therapy really a risk factor for intracranial hemorrhage (ICH) in Minor head injury (MHI)?**Authors:**

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), FABIO SCIUTTI (2), MIRKO BELLIATO (2), GIORGIO IOTTI (2), SABINO LUZZI (3), RENATO GALZIO (3), ELVIS LAFE (4), FEDERICO ZAPPOLI THYRION (5), SERENA PIOLI (1), STEFANO PERLINI (6), LUCA CICERI (7), FEDERICA MANZONI (8), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. INTENSIVE CARE UNIT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. Neurosurgery, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. NEURO RADIOLOGICAL, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. , POLICLINICO , pavia, ITALY
7. STUDENT EMERGENCY DEPARTMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
8. Clinical Epidemiology and Biometry Unit, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: intracranial hemorrhage, Minor head injury, risk factor, EMERGENCY DEPARTMENT

Abstract :

Background: Minor head injury (MHI) represents one of the most common causes of presentation to emergency rooms in Italy and abroad, and it makes up about 88% of all cases of presenting head trauma. While it's recognized that patients under anticoagulant therapy have a roughly doubled risk of ICH, studies conducted on the risk of ICH in case of antiplatelet therapy (APT) give discordant results

Patients & Methods : Evaluate in a large cohort of subjects with MHI the risk related to APT. We have included patients between 18 and 99 years of age who had reported MHI and were either in APT or did not take any therapy (NT). They have been subjected to CT according to the current guidelines. So we analyzed the incidence of ICH in the two groups. We then analyzed the population in antiplatelet therapy dividing it by an age criterion in patients with more (APT>75) or less than 75 years (APT<75). We then went to see if the risk of antiplatelet therapy was not in large part due to old age.

Results & discussion : We enrolled 1929 patients of which 483 in APT. The APT groups have been shown to be comparable to the NT for sex (M 43% vs 50%); vital parameters (APT: FC media = 78bpm, PA media = 148/78; satO2 = 96%; NT: FC media = 80 bpm, PA average = 137/79; satO2 = 98%); prevalence of other bleeding risk factors and trauma dynamics (minor dynamics). The three groups have a way worse trend starting from the group N.T, younger with average age of 54 years, passing by APT<75 with average age of 68 years and going to the end to APT>75 with average age of 84 years. The 3 groups differ instead for the clinical presentation as evidenced by the attribution of priority code to the medical examination (APT>75 : 26% green Code, 73% yellow code, 1% Code Red; APT<75: 26% green Code, 73% yellow code, 1% Code Red; NT: 73 % green Code, 23% code yellow, 2% Code Red) and from GCS (APT: 2.4% have GCS=14, NT: 1.4% have GCS=14). This is demonstrated by code of gravitates to (APT>75 : 15% yellow code, 1% Code Red; APT<75: 10% yellow code, 1% Code Red; NT: 8% code yellow, 1% Code Red); the rate of hospitalization (APT>75 : 13%; APT<75: 10%; NT: 8%), the number of return to 30 days (APT>75 : 7%; APT<75: 6%; NT: 4%) and, above all, the incidence of ICH (APT>75 : 11%; APT<75: 9%; NT: 6.5%)

Conclusion & perspectives : From our analyses it emerges that although there is a tendency to a greater ICH in APT does not reach statistical significance, while age is confirmed as an independent risk factor.

#19137 : Predictive Values of Neutrophil Lymphocyte Ratio, C-Reactive Protein and Lactate Levels in Terms of Critical Diagnosis in the Patients with Abdominal Pain**Authors:**

HAKAN GUNER (1), SEDAT KOCAK (1), ZERRIN DEFNE DUNDAR (1), MUSTAFA KÜRŞAT AYRANCI (1), ABDULLAH SADIK GİRİŞGİN (1)

1. Emergency Medicine, Meram Medical Faculty, KONYA, TURKEY

Keywords: NLR, CRP, Lactate, CT, Abdominal Pain

Abstract :

Purpose: Neutrophil Lymphocyte Ratio, C-Reactive Protein and Lactate levels obtained from the first blood samples taken during admission in adult patients admitted to the emergency room with non-traumatic abdominal pain were investigated as a parameter for predicting primary outcome (discharge) and advanced imaging needs

Material and Method: The study is a retrospective descriptive observational clinical study. Inclusion criteria of this study are application of Necmettin Erbakan University, Meram Medicine Faculty, Department of Emergency Medicine between 01.10.2015 and 31.12.2016 with complaint of non-traumatic abdominal pain and patients have CT imaging result.

Findings: 1154 patients who applied to the emergency department with abdominal pain and underwent CT imaging included in this study. In determining the critical diagnosis in NLRs the sensitivity of $NLR > 4,35$ was 57,76%, the specificity was 61,27% . In determining the critical diagnosis for CRP sensitivity for $CRP > 24,4$ mg/L was 41,97% . In determining the critical diagnosis in CT sensitivity for lactate $> 1,9$ mmol/L was 40,63%, specificity was 92,86%.

Results: In this study, we aimed to reduce the number of radiological examination requests and predict the possible pathologies and outcomes that can be predicted by biomarkers, to prevent the harmful effects of radiation and to decrease the cost. In line with these values, NLR, CRP and Lactate in the predicting of the primary outcome and the need for advanced imaging in patients with abdominal pain will independently increase their sensitivity and specificity in terms of orientation even if they are not determinant in strong effect.

Trial Registration / Funding Information (only) :

NONE

#19138 : TOC TOC: The patient with head trauma knocks on the door of ED. Alias: Who is the patient with minor head trauma who arrives in the emergency room?

Authors:

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), FABIO SCIUTTI (2), MIRKO BELLIATO (2), GIORGIO IOTTI (2), SABINO LUZZI (3), RENATO GALZIO (3), ELVIS LAFE (4), FEDERICO ZAPPOLI THYRION (5), SERENA PIOLI (1), STEFANO PERLINI (6), LUCA CICERI (7), FEDERICA MANZONI (8), GIUSEPPE CRESCENZI (9), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. INTENSIVE CARE UNIT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. Neurosurgery, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. NEURO RADIOLOGIC, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. , POLICLINICO , pavia, ITALY
7. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
8. Clinical Epidemiology and Biometry Unit, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
9. emergency department, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Abstract :

Background: Minor head injury (MHI) represents one of the most common causes of presentation to emergency rooms in Italy and abroad, and it makes up about 88% of all cases of presenting head trauma. It represents about 4% of the accesses in ED. The population is very varied, both at the epidemiological level and of the risk factors for bleeding (RF). It follows that in line with the current guidelines a very different therapeutic diagnostic pathway. Patients with a more severe RF should in fact remain observed for 24 hours, the others for the period between 4 and 8 hours. Different as well is the execution of a CT Head: indispensable when present RF for intracranial hemorrhage (ICH), preventable and replaced with observation for lower-risk cases.

Patients & Methods : We enrolled subject with MHI (GCS<13) afferent at our ED for 12 consecutive months. We then analyzed the dynamics of traumatism (minor/greater), the presence of signs or symptoms, the presence of RF related to therapy or to age. We then assessed the adherence to the current guidelines for the duration of observation and for the execution of CT haed.

Results & discussion : We enrolled 2162 patients who reported MHI. The 50% were men. The male percentage is reduced progressively with age. The 40% of the population comes with their own means, the others accompanied by various means of the territorial urgency service. 56% of the population were more than 75 years old. 92% of patients had minor dynamics of cranial traumatism. 8% instead of greater dynamics. 66% did not take any therapy (NY), 21% in antiplatelet therapy (APT), 7% in traditional vitamin K antagonists (VKA), 3% in new oral anticoagulants (NOAC), 1% was in heparin therapy or had major bleeding disorders. The overall incidence of ICH was 8% and that of the hospitalization of 9%, with extensive variation within the risk groups, especially with regard to age and therapy taken by patients, particularly VKA. In particular, for ICH: 6.6% in NT, 10% in APT, 17% in VKA, 4% in NOAC, 12.5% in people >75 years old, 5% in people with less than 75 years.

Conclusion: The analysis shows population with MHI is extremely difference. For the correct management of this complex category of patients it is necessary to carry out an accurate medical history and objective examination by carefully framing the RF. In our reality the ED is divided by area of intensity of care, for which a careful valuation is already necessary to triage to start the patient towards the right area of the ED. Ie if young people without RF have to carry out a brief observation, they do not need CT head and can be discharged, the elderly especially if in VKA, need also to observe 24 hours and assiduous assistance and an average intensity of care. It is necessary above all not to underestimate the elderly patients, because have a significant increase of ICH. This is even more true if consider patients in VKA

#19139 : A study on the severity of accidents and related factors of bicycle and PMV related injury**Authors:**

Jaeho Jang (1)

1. Emergency medicine, Gachon Gil Hospital, Incheon, KOREA

Keywords: Bicycles, PMV, injury, protect device

Abstract :**Background:**

Personal mobility vehicles (PMV) has been widely used as a means of replacing bicycles in recent years because its convenience and high economic efficiency. But, Accidents related to PMV are also increasing, there are few studies. The purpose of this study was to analyze the factors that increase the severity of damage and have characteristics of the PMV compared with the accidents occurred in the bicycle.

Methods: We performed retrospective observational studies. The variables related to the accident were collected and analyzed for the patients who visited the emergency room by the PMV and bicycle accident. Multivariate logistic regression analysis was used to find out the factors affecting the severity of the patients. Odds ratios were calculated and compared between Injuries related to PMV and bicycles.

Results: A total of 1124 patients (bike 1017, PMV 107) were enrolled in the study. In multivariate regression analysis, the severity of PMV was higher (OR 1.73, CI 1.06-2.83) than that of bicycle. The factors affecting the severity of the patients were age (OR 1.02, CI 1.01-1.03) CI 1.04-2.76), ambulance transport (OR 2.46, CI 1.78-3.4) and wearing a helmet (OR 2.05, CI 1.35-3.12).

Discussion & Conclusions: PMV showed higher severity of damage than bicycle. It is considered that PMV, which is a new transportation means, is insufficient for the prevention of safety compared to bicycles where driving regulations and wearing protective equipment are common. Additional studies on precise mechanisms of injury and damage are expected to prevent accidents and reduce the severity

Trial Registration / Funding Information (only) :

This study did not receive any specific funding. no appropriate register

#19140 : The Experience Of High Flow Nasal Oxygen In Pediatric Emergency Service**Authors:**

Metin Uysalol (1), Dudaklı Aslı (2), Gumus Suheyla (2)

1. Department of Pediatric Emergency, Istanbul University, Istanbul Faculty of Medicine, Istanbul, TURKEY

2. Pediatric Emergency Department, Istanbul University, Istanbul Faculty of Medicine, , Istanbul, TURKEY

Keywords: High Flow Nasal Oxygen, Pediatric Emergency Service, acute bronchiolitis, pneumonia

Abstract :**The Experience Of High Flow Nasal Oxygen In Pediatric Emergency Service**

Introduction: Bronchiolitis is defined as a clinical syndrome that occurs in children younger than 2 years of age and is characterized by upper respiratory symptoms followed by lower respiratory infection with inflammation. There is no established, specific therapy for acute bronchiolitis, and it is commonly treated using supplemental oxygen and by ensuring that the patient remains hydrated.

Pneumonia is an infection of pulmonary alveoli or interstitial tissue and can be diagnosed with clinical findings. Oxygen therapy with high flow nasal cannula has been shown to increase lung compliance and to improve gas exchange. There are a few studies about efficacy of oxygen therapy via high flow nasal cannula (HFNC) in moderate to severe bronchiolitis, acute respiratory failure mainly in intensive care settings.

Purpose: Here in we report our experiences of oxygen therapy with HFNC in moderate to severe acute bronchiolitis and severe pneumonia in pediatric emergency service.

Method: Patients who were admitted to Istanbul University Istanbul Faculty of Medicine Pediatric Emergency Service and were administered HFNC therapy between January 2018 and March 2019 were enrolled. Respiratory rates (RR) were recorded at baseline, 3 hours, and 6 hours. The study enrolled a total of 48 patients of whom 20 (41.7%) were female and 28 (58.3%) were male, 36 (75%) of them had comorbidities (neurometabolic syndromes, cardiovascular disorders etc.). 20 (41.7%) of them diagnosed with severe bronchiolitis and 28 (58.3%) of them diagnosed with complicated pneumonia. Significant reductions occurred in mean RR values at 3 hours and 6 hours compared to those at baseline ($p < 0.05$). All of the patients maintained oxygen saturations (SatO₂) ≥ 92 percent with maximum 30 % of fractional oxygen indices (FiO₂). No significant correlations were found between treatment failure and age at admission. Only 5 (10.4%) patients didn't respond to therapy and needed noninvasive ventilation (NIV) in emergency service before transferring to intensive care unit (ICU). 20 (41.6 %) patients tolerated the separation from oxygen treatment with HFNC after a follow up period, 6 (12,5 %) of them are discharged and 14 (29.1%) of them are transferred to pediatric wards for further treatment. The other 23 (47.9%) patients are transferred to ICU due to lack of facilities for longer oxygen treatment with HFNC after their condition stabilized. 18 (37.5%) of them was diagnosed with pneumonia, the other 5 (10.4%) was diagnosed with acute bronchiolitis.

Results: High flow nasal oxygen therapy can be used for patients with severe bronchiolitis and complicated pneumonia in pediatric emergency services with strict and careful follow up. We achieved better results in acute bronchiolitis with HFNC than pneumonia in our experience. Oxygen therapy with HFNC may decrease the need of NIV therapy especially in acute bronchiolitis. But more studies should be done in this field for better understanding.

Trial Registration / Funding Information (only) :

This study did not receive any specific funding

#19141 : Epidemiologic profile of patients with suspected deep vein thrombosis in the emergency department

Authors:

emna rezgui (1), hajer touj (1), emna ennouri (2), soumaya mahdhaoui (2), amel ben garfa (1), najla elheni (3), hela ben turkia (1), Sami Souissi (2), Hanan Ghazali (2)

1. urgence-SMUR hôpital régional Ben arous, hôpital régional ben arous, ben arous, TUNISIA

2. emergency department, regional hospital of ben arous, ben arous, TUNISIA

3. , regional hospital of ben arous, ben arous, TUNISIA

Keywords: deep vein thrombosis, epidemiology, emergency department

Abstract :**Background :**

Deep vein thrombosis (DVT) is often managed by first line physician. It is associated with non-specific symptoms or frequently asymptomatic. The challenge is to make the diagnosis and to prevent two major complications, pulmonary embolism and post thrombotic syndrome.

The widespread use of diagnosis score, D-Dimer dosing and ultrasound exam is helpful in the emergency department (ED).

Objective: To study the epidemiological, clinical and prognostic features in patient admitted in the ED for suspected DVT.

Methods: A prospective observational study was conducted during two years from March 2017 to March 2019. Inclusion of patients (age \geq 18 years) admitted to ED for suspected DVT. The demographics, co-morbidities, clinical and biological data were collected. Calculation of Wells score and Primary care score. The diagnosis of DVT was based on compression ultrasound.

Results: A total of 140 patients were included. Mean age was 57 ± 18 years .The Sex ratio was 0.94. Comorbidities n (%): hypertension 42 (30), diabetes 35 (25), dyslipidemia 17 (12). Risk factors of venous thromboembolism n (%): obesity and overweight 59 (41,7), personal history of DVT 26 (18,6) , varices 24 (17) , post-surgery period 10 (7), neoplasia 8 (6), pregnancy 4 (3) , postpartum period 4 (3), use of contraceptive pills 2 (1,4) and a long travel 2 (1,4). Most of patient presented with unilateral pain and swelling 116 (83%). Homan's sign was positive in 68 patients (48,5%). Well's score mean was 2.18 ± 1.1 (high probability 39(28%) and intermediate probability 87 (62%)). Median D-Dimer was 1636 ng/ml (772, 5055) . Primary care score mean was 3.95 ± 0.95 (DVT was likely in 60 patient (42,9%) and unlikely in 24(17,12%)). DVT was diagnosed in 68 patients (48,6%), 6 patients have superficial thrombophlebitis (4,3%). Forty seven percent of patients received anticoagulants in the ED , 66 were hospitalized (47%) and 56 were discharged (40%) home from the ED .

Conclusion: A better knowledge of the population characteristics with DVT may help in the management of venous thromboembolism.

#19142 : Combinations of symptoms in emergency presentations: prevalence and outcomes: An observational prospective study

Authors:

Hadil MHADHBI (1), Khédija ZAOUCHE (2), Yosra YAHYA (2), Hamida MAGHRAOUI (2), Radhia BOUBAKER (3), Ramla BACCOUCHE (2), Abdelwaheb MGHIRBI (2), Kamel MAJED (2)

1. HMPIT, HMPIT, Tunis , TUNISIA
2. les urgences , La Rabta, Tunis, TUNISIA
3. la Rabta emergency departement, la rabta, tunis, TUNISIA

Keywords: symptoms ;combinations; prevalence ;outcomes; emergency department

Abstract :

Background: The predictive power of poor outcomes of some symptoms such as dyspnea, is well known. Although, investigation are guided by the single chief complaint, patients reporting more than one symptom at presentation are the norm rather than the exception. We aimed to identify the most common combinations of symptoms and to report their outcomes.

Methods: This prospective study was conducted at the emergency department(ED) over a period of 6-month period. All patients presenting to the ED with acute medical or surgical complaints were enrolled. The most common combinations of two symptoms were assed for their predictive value for ICU admission and in-hospital mortality using the area under the receiver-operating characteristic (AUROC) curves.

Results: During the study period, 800 patients were included. Median age was 60 ± 16 years (IQR = 20 to 97 years); 35% were men; the median number of symptoms was 2. More than half of all patients, 710 (88, 7%), reported more than one symptom .600 patients (75%) presented 2 symptoms. The 15 most frequent combinations of two symptoms were studied. With 391 (65,2%) mentions, the combination of dyspnea and chest pain was the most frequently reported. The combinations of weakness and fever, dyspnea and chest pain were predictive for ICU admission. The combinations of Chest pain and fatigue, weakness and fatigue were predictive for in-hospital mortality.

Discussion & Conclusions: In the current study, combination of symptoms were frequent. Females were overrepresented in the group of patients with frequent combinations of symptoms. This is most likely explained by the fact that women mention significantly more symptoms at presentation. Despite the relatively small number of patients and the fact that the study was a single center study, combinations of symptoms at ED presentation are frequent and may be used to improve clinical outcome prediction. Future studies should investigate to which extent systematic assessment of symptoms could improve risk stratification tools and ultimately clinical practice.

#19144 : Decision-making - the benefit of bedside CRP within ambulance care

Authors:

Johanna Kaartinen (1), Marja Mäkinen (1), Anna Sjölund (2), Jouni Nurmi (3), Maaret Castrén (4)

1. PhD, Department of Emergency Medicine and Services, Helsinki University Hospital and Helsinki University, Helsinki, Finland. , Helsinki, FINLAND
2. M.D., Department of Emergency Medicine and Services, Helsinki University Hospital and Helsinki University, Helsinki, Finland. , Helsinki, FINLAND
3. Docent, PhD, Department of Emergency Medicine and Services, Helsinki University Hospital and Helsinki University, Helsinki, Finland. , Helsinki, FINLAND
4. Professor, Department of Emergency Medicine and Services, Helsinki University Hospital and Helsinki University, Helsinki, Finland. , Helsinki, FINLAND

Keywords: ambulance, bedside, decreased condition (DGC), Q-CRP

Abstract :

Background: Patients with degreased condition (DGC) for ambiguous reasons receive low triage priority. Their death risk is triple. Tools are needed to identify the critically ill patients from this group. The triage used today is not effective. The bedside point-of-care measurements are CRP, lactate acid and suPAR (Soluble Urokinase Plasminogen Activator Receptor). Elevated values associate with the probability of critical illness and predict a risk of death.

Purpose: To improve identification and proper prioritization of patients with non-specific symptoms prehospitally, we intend to investigate whether Q-CRP, a rapid test for CRP, correlates with time-critical states in the above-mentioned patient group alone or together with CRP, lactate and suPAR. The primary endpoint is need for hospital care.

Material: Patients over 18 years who exhibit non-specific symptoms and transported to the emergency room.

Method: In patients with unspecified conditions, defined according to the inclusion template, a venous blood sample was taken prehospitally at the scene by the EMS.

Analysis: Significance tests and regression analyzes with 95% CI were used. The diagnostic accuracy of Q-CRP, lactate, suPAR and combinations thereof were compared with optimal boundary values.

Results: A significant correlation was observed between the Q-CRP, CRP, suPAR and lactate values ($p < .05$). At the multivariate analysis CRP ($p = .000$), Q-CRP ($p = .005$), lactate ($p = .001$) and age ($p = .009$) were independent predictors of hospital admission, whereas suPAR and gender were not significant in this material. CRP, Q-CRP and lactate were the most predictive biomarkers in the risk stratification of patients with suspected infection initially admitted to hospital care.

Conclusion: Q-CRP and Q-CRP together with lactate can identify potentially critically ill patients from the patients with DGC. The Q-CRP may therefore help in early prehospital detection of the patient's critical condition

#19148 : Clinical phenotypes of acute heart failure based on signs and symptoms of perfusion and congestion at emergency department presentation and their relationship with patient management and outcomes**Authors:**

Oscar Miro (1), Pablo Herrero-Puente (2), Jacob Javier (3), Pere Llorens (4), F. Javier Martín-Sánchez (5), Xavier Rosselló (6), Víctor Gil (1)

1. Emergency Department, Hospital Clínic, Barcelona, Catalonia, SPAIN
2. Emergency Department, Hospital Universitario Central de Asturias, Oviedo, SPAIN
3. Emergency Department, Hospital de Bellvitge, Barcelona, Catalonia, SPAIN
4. Emergency Department, Hospital General d'Alacant, Alacant, SPAIN
5. Emergency Department, Hospital Clínico San Carlos, Madrid, SPAIN
6. CNIC, -, Madrid, SPAIN

Keywords: acute heart failure, outcome

Abstract :

Objective: To compare the clinical characteristics and outcomes of patients with acute heart failure (AHF) according to clinical profiles based on congestion and perfusion determined in the emergency department (ED)

Methods: 11,261 unselected AHF patients from 41 Spanish EDs were classified according to perfusion (normoperfusion=warm; hypoperfusion=cold) and congestion (not=dry; yes=wet). Baseline and decompensation characteristics were recorded as were the main wards to which patients were admitted. The primary outcome was 1-year all-cause mortality; secondary outcomes were need for hospitalisation during the index AHF event, in-hospital all-cause mortality, prolonged hospitalisation, 7-day post-discharge ED revisit for AHF and 30-day post-discharge rehospitalisation for AHF.

Results: 8,558 patients (76.0%) were warm+wet, 1,929 (17.1%) cold+wet, 675 (6.0%) warm+dry, and 99 (0.9%) cold+dry; hypoperfused (cold) patients were more frequently admitted to intensive care units and geriatrics departments, and warm+wet were discharged home without admission. The four phenotypes differed in most of the baseline and decompensation characteristics. The 1-year mortality was 30.8%, and compared to warm+dry, the adjusted HRs were significantly increased for cold+wet (1.660; 95%CI=1.400-1.968) and cold+dry (1.672; 1.189-2.351). Hypoperfused (cold) phenotypes also showed higher rates of index episode hospitalisation and in-hospital mortality, while congestive (wet) phenotypes had a higher risk of prolonged hospitalisation but decreased risk of rehospitalisation. No differences were observed among phenotypes in ED revisit risk.

Conclusions: Bedside clinical evaluation of congestion and perfusion of AHF patients upon ED arrival and classification according to phenotypic profiles proposed by the latest ESC Guidelines provide useful complementary information and help to rapidly predict patient outcomes shortly after ED patient arrival.

#19150 : Under-reporting the violence in the Emergency Department: still an unconscionable matter**Authors:**

Massimo ZANNONI (1), Cinzia BIONDANI (2), Alberto RIGATELLI (3), Chiara GIULIARI (2), Giorgio RICCI (4), Maurizio LORENZI (2), Roberto CASTELLO (1), Chiara BOVO (5)

1. Emergency and Accident Department, Azienda Ospedaliera Universitaria Integrata, Verona (VR), Italy, VERONA, ITALY
2. Prevention and Protection Service, Azienda Ospedaliera Universitaria Integrata, Verona (VR), Italy, VERONA, ITALY
3. Postgraduate School of Emergency Medicine, University of Verona, Verona (VR), Italy, Verona, ITALY
4. Emergency and Accident Department, Azienda Ospedaliera Universitaria Integrata, Verona (VR), Italy, Verona, ITALY
5. Hospital Health Direction, Azienda Ospedaliera Universitaria Integrata, Verona (VR), Italy, VERONA, ITALY

Keywords: Healthcare workers, Violence, Emergency Department, Occupational risk

Abstract :

Background: Violence against healthcare workers (HCWs) is increasing and Emergency Departments (EDs) frequently face with daily violence occurrence, with staff reporting several episodes each week. Literature shows that HCWs are considered most at risk of aggressive actions, but in Italy there are no consolidated statistics on the spread of the phenomenon, despite the fact that in recent times it is constantly being placed at attention through the media. Recently it has been deemed necessary to detect the episodes of aggression in the Azienda Ospedaliera Universitaria Integrata (AOUI) di Verona (I).

Methods: Starting from the Violent Incident Form (VIF) of Arnetz, a HCWs dedicated self reporting form is accessible 24/24 in our intranet.

Results: data refer to the episodes of aggression reported by HCWs of the AOUI - Verona in 2016-2018 years with reports increasing from 3 to 27 and 66 respectively. Most of the aggressions were by patients (2016: 33%; 2017: 77%; 2018: 73%) or relatives (2016: 67%; 2017: 15%; 2018: 20%) but also colleagues (2017: 8%; 2018: 5%) involving men as aggressors (2016: 60%; 2017: 67%; 2018: 73%) and women as victims (2016: 67%; 2017: 58%; 2018: 73%), mostly paramedics (2016: 100% nurses; 2017: 81% nurses, 11% physicians and 11% health worker; 2018: 82% nurses, 12% physicians and 6% health worker). In most of the cases the aggressor was in age group 18-30 (2017: 30%; 2018: 17%), 31-50 (2016: 67%; 2017: 41%; 2018: 48%) or 51-65 (2016: 33%; 2017: 19%; 2018: 20%) years. The preponderant percentage of the personnel attacked was in 50-59 years age group (40%) in 2018, slightly different from 2016 and 2017 prevalence of 40-49 years (2016:100%; 2017: 37%). Aggressions were mostly during routine activities or normal conversation (2017: 27%; 2018:38%) and following clarification requests (2017: 33%; 2018: 14%). Took place in wards spaces (2016: 33%; 2017: 48%; 2018: 23%) or in patient's room (2016: 33%; 2017: 26%; 2018: 23%), in the morning (6.00-9.00; 2017: 19%; 2018: 12%), between 12.00 and 18.00 (2016: 66%; 2017: 41%; 2018: 44%) and in the evening (21.00-24.00; 2018: 15%). The workers felt the situation degenerate into violence (2017: 67%; 2018: 64%) and help was needed to stop the aggression (2016: 77%; 2017: 70%; 2018: 51%). The aggressors described as "mentally unstable" (2016: 67%; 2017: 64%; 2018: 24%) used verbal and physical violence. Reports from EDs workers are present only from 2018 (35% of cases).

Discussion and Conclusions: Despite an increasingly number of reports received, data do not reflect the real extent of the phenomenon in our agency. Moreover few reports were received from structures that the literature identifies as having a high risk of aggression, such as the EDs are. This could be explained by poor information about the aggression reporting form accessible in the intranet. Aggressive behaviours are perpetrated by particularly fragile and vulnerable subjects, leading to a widespread tendency to justify aggressive actions. Increasing awareness and reporting of the phenomenon and strategies to recognize and manage aggressions is the next great challenge.

Trial Registration / Funding Information (only) :

This research received no external funding. The authors declare no conflict of interest.

#19151 : CORT-AHF study: Effect on outcomes of systemic corticosteroid therapy provided during early management of patients finally diagnosed with acute heart failure.

Authors:

Oscar Miro (1), Pablo Herrero-Puente (2), Jacob Javier (3), Pere Llorens (4), F. Javier Martín-Sánchez (5), Víctor Gil (1)

1. Emergency Department, Hospital Clínic, Barcelona, Catalonia, SPAIN
2. Emergency Department, Hospital Universitario Central de Asturias, Oviedo, SPAIN
3. Emergency Department, Hospital de Bellvitge, Barcelona, Catalonia, SPAIN
4. Emergency Department, -, Alacant, SPAIN
5. Emergency Department, Hospital Clínico San Carlos, Madrid, SPAIN

Keywords: corticosteroids, acute heart failure, outcome

Abstract :

Objective: Patients with undiagnosed dyspnea frequently receive corticosteroids in emergency departments while determining a final diagnosis, but their effect on the outcomes of patients with acute heart failure (AHF) without overt chronic obstructive pulmonary disease (COPD) exacerbation is unknown. We investigated whether systemic corticosteroids (new onset) given to AHF patients have any association with outcomes, with differentiated analyses for patients with and without COPD as a comorbidity.

Methods: We selected AHF patients from the EAHFE registry recording key data (new onset corticosteroid therapy, COPD condition). Patients with and without COPD were analyzed separately. We calculated unadjusted and adjusted ratios for corticosteroid-treated compared to corticosteroid-untreated patients for two co-primary endpoints: 90-day all-cause mortality (from index episode), and 90-day post-discharge combined endpoint (all-cause mortality or readmission for AHF), with intermediate time-point estimations. Other secondary endpoints were calculated, and some sensitive and stratified analyses were performed.

Results: We analyzed 11,356 patients; 8,635 without COPD (841 corticosteroid-treated, 9.7%) and 2,721 with COPD (753 corticosteroid-treated, 27.7%). There were several differences between treated and untreated patients, essentially because corticosteroid-treated patients were sicker. Although unadjusted outcomes were worse in corticosteroid-treated patients, especially in patients without COPD, these differences disappeared after adjustment: hazard ratios (HRs) for 90-day mortality (without/with COPD) were 0.95(0.71-1.26)/1.15(0.79-1.66), and 1.09(0.93-1.28)/1.02(0.86-1.21) for the post-discharge combined endpoint. Analyses of intermediate time-point co-primary endpoints and secondary outcomes rendered similar estimations. Sensitivity and stratified analysis did not significantly modify these results.

Conclusions: There is no evidence of harm related to the new onset of systemic corticosteroid therapy during an episode of AHF, either in patients with or without concomitant COPD.

#19152 : Identification of risk patients in emergency medical services**Authors:**

Marja Mäkinen (1), Heini Harve-rytsala (1), Jussi Pirneskoski (2), Maaret Castrén (3)

1. PhD, Department of Emergency Medicine and Services, Helsinki University Hospital and Helsinki University, Helsinki, Finland., Helsinki, FINLAND
2. M.D., Department of Emergency Medicine and Services, Helsinki University Hospital and Helsinki University, Helsinki, Finland., Helsinki, FINLAND
3. Professor, Department of Emergency Medicine and Services, Helsinki University Hospital and Helsinki University, Helsinki, Finland., Helsinki, FINLAND

Keywords: risk of falling, nutritional status, level of cognitive functioning activity, EMS

Abstract :

Background: Inadequate nutrition has been associated with growing risk of falling and impaired ability in elderly patients. Falling is a significant threat to the health of the elderly. It is estimated that one third of people over the age of 65 experience at least one falling each year. Over 60% of the falls cause serious injury or disability. Adequate nutrition increases the muscle strength of the elderly. Therefore, determining and managing the nutrition level is important for preventing falling. As far as we know emergency medical services has never before reported being a part of prevention by performing risk identification.

Aim: The purpose of the study is to assess whether it is possible to use a simple screening tool to find out the risk of falling, the nutritional status and the level of cognitive functioning activity when the EMS faces the elderly over the age of 70 years. In addition, the flow of information between primary care and emergency services and nutritionists is examined.

Material and method: Identification of poor nutrition is carried out in the Helsinki University hospital area. All people over the age of 70 requiring ambulance transport will be included in the study for 4 months during 2018. A structured electronic form is used to identify the malnutrition, the level of cognitive functioning activity and the risk of falling. The assessment is performed during the transport. The data is analyzed by the SPSS statistical program both by descriptive and statistical significance by looking at the methods suitable for the data.

Results: The results will be presented later

Conclusion: The information produced by the research aims to develop (a) Identifying in the ambulance those patients who are at risk; and (b) activating nursing staff and nutritionists and, by means of these measures, increase the number of patients receiving effective nutrition therapy.

#19153 : Comparison between emergency physicians' decision to hospitalize or discharge home and clinical risk categories of the MEESI scale among patients with acute heart failure**Authors:**

Oscar Miro (1), Víctor Gil (1), Pablo Herrero-Puente (2), Jacob Javier (3), Pere Llorens (4), F. Javier Martín-Sánchez (5), Xavier Rosselló (6)

1. Emergency Department, Hospital Clínic, Barcelona, Catalonia, SPAIN
2. Emergency Department, Hospital Universitario Central de Asturias, Oviedo, SPAIN
3. Emergency Department, Hospital de Bellvitge, Barcelona, Catalonia, SPAIN
4. Emergency Department, Hospital General d'Alacant, Alacant, SPAIN
5. Emergency Department, Hospital Clínico San Carlos, Madrid, SPAIN
6. CNIC, -, Madrid, SPAIN

Keywords: acute heart failure, outcome, risk stratification

Abstract :

Objective: The MEESI is a validated clinical decision tool that characterizes risk of mortality in emergency department (ED) acute heart failure (AHF) patients. The objective of this study was to compare the distribution of risk categories between hospitalized and discharged ED patients with AHF.

Methods: We included consecutive AHF patients from 34 Spanish EDs. Patients were retrospectively classified according to MEESI risk categories. We calculated the odds of hospitalization (vs. direct discharge from the ED) across MEESI risk categories. Next we assessed the following 30-day post-discharge outcomes: ED revisit, hospitalization, death, and their combination. We used Cox hazards models to determine the adjusted association between ED disposition decision and the outcomes among patients who were stratified into low and increased risk categories.

Results: We included 7,930 patients [age=80.5 (SD=10.1) years; women=54.7%; hospitalized=75.3%]. Compared to low-risk MEESI patients, OR for hospitalization of patients in intermediate, high and very-high risk categories were 1.83 (1.64-2.05), 3.05 (2.48-3.76) and 3.98 (3.13-5.05), respectively. However, almost half (47.6%) of all discharged patients were categorized as increased risk by MEESI, and 19.0% of all the increased risk patients were discharged from the ED. Among the low-risk MEESI patients, the 30-day post-discharge mortality did not differ by ED disposition (HR for discharged patients respect to hospitalized 0.65, 0.70-1.11), nor did it differ in the increased risk group (0.88, CI 0.63-1.23). The low risk MEESI patients had higher risks of 30-day ED revisit and hospitalization (1.86, 1.57-2.20; and 1.92, 1.54-2.40; respectively) as did the increased risk group (1.62, 1.39-1.89; and 1.40, 1.16-1.68), with similar results for the combined endpoint[MO(1)].

Conclusions: The disposition decisions made in current clinical practice for ED AHF patients calibrate with MEESI risk categories, but nearly half of the patients currently discharged from the ED fall into increased risk MEESI categories.

Acknowledge of funding: This study was partially supported by grants from the Instituto de Salud Carlos III supported with funds from the Spanish Ministry of Health and FEDER (PI15/01019, PI15/00773, PI18/00393, PI18/00456) and Fundació La Marató de TV3 (2015/2510).

#19156 : Time-pattern of adverse outcomes after an infection-triggered acute heart failure decompensation and the influence of early antibiotic administration and hospitalisation. Results of the PAPRICA-3 study**Authors:**

Oscar Miro (1), Pablo Herrero-Puente (2), Jacob Javier (3), Pere Llorens (4), F. Javier Martín-Sánchez (5), Víctor Gil (1)

1. Emergency Department, Hospital Clínic, Barcelona, Catalonia, SPAIN
2. Emergency Department, Hospital Universitario Central de Asturias, Oviedo, SPAIN
3. Emergency Department, Hospital de Bellvitge, Barcelona, Catalonia, SPAIN
4. Emergency Department, Hospital General d'Alacant, Alacant, SPAIN
5. Emergency Department, Hospital Clínico San Carlos, Madrid, SPAIN

Keywords: acute heart failure, outcome

Abstract :

Objective: To compare the clinical characteristics and outcomes of patients with acute heart failure (AHF) according to clinical profiles based on congestion and perfusion determined in the emergency department (ED)

Methods: 11,261 unselected AHF patients from 41 Spanish EDs were classified according to perfusion (normoperfusion=warm; hypoperfusion=cold) and congestion (not=dry; yes=wet). Baseline and decompensation characteristics were recorded as were the main wards to which patients were admitted. The primary outcome was 1-year all-cause mortality; secondary outcomes were need for hospitalisation during the index AHF event, in-hospital all-cause mortality, prolonged hospitalisation, 7-day post-discharge ED revisit for AHF and 30-day post-discharge rehospitalisation for AHF.

Results: 8,558 patients (76.0%) were warm+wet, 1,929 (17.1%) cold+wet, 675 (6.0%) warm+dry, and 99 (0.9%) cold+dry; hypoperfused (cold) patients were more frequently admitted to intensive care units and geriatrics departments, and warm+wet were discharged home without admission. The four phenotypes differed in most of the baseline and decompensation characteristics. The 1-year mortality was 30.8%, and compared to warm+dry, the adjusted HRs were significantly increased for cold+wet (1.660; 95%CI=1.400-1.968) and cold+dry (1.672; 1.189-2.351). Hypoperfused (cold) phenotypes also showed higher rates of index episode hospitalisation and in-hospital mortality, while congestive (wet) phenotypes had a higher risk of prolonged hospitalisation but decreased risk of rehospitalisation. No differences were observed among phenotypes in ED revisit risk.

Conclusions: Bedside clinical evaluation of congestion and perfusion of AHF patients upon ED arrival and classification according to phenotypic profiles proposed by the latest ESC Guidelines provide useful complementary information and help to rapidly predict patient outcomes shortly after ED patient arrival.

Acknowledgements and funding: This study was partially supported by grants from the Instituto de Salud Carlos III supported with funds from the Spanish Ministry of Health and FEDER (PI15/01019, PI15/00773, PI18/00393, PI18/00456) and Fundació La Marató de TV3 (2015/2510).

#19162 : COST ANALYSIS OF TRAFFIC ACCIDENTS IN WINTER SEASON THROUGH ANATOMIC SCORING

Authors:

dilek atik (1), burçe koçkan (1), benu bulut (1), hilmi kaya (1), ramiz yazıcı (1), ramazan güven (1), başar cander (1)

1. emergency department, kanuni sultan suleyman research and training hospital, istanbul, TURKEY

Keywords: TRAFFIC ACCIDENTS, ANATOMIC SCORING, COST ANALYSIS

Abstract :

INTRODUCTION:Traffic accidents have been a bleeding wound due to developing technology and increasing number of vehicles.High costs appear by tests and treatments as well as further health problems and loss of labour power in traffic accidents.The aim of the study was to assess the costs of traffic accidents from first referral to emergency department through anatomic scoring and to search the effect of traffic accident pattern and anatomic scores on the costs.**METHOD:**The study was conducted through retrospective review of hospital automation system, juridical records and patient files of the patients who referred our hospital between December,1,2018 and February,28,2019. 651 patients whose records were complete were enrolled into the study.Conformity test was performed for all variables to normal distribution;Kolmogorov Smirnov test was run to asses the conformity to parametric test criteria.The data obtained in the study within the scope of clinical research have a non-parametric quality in terms of statistics.Therefore, Kruskal-Wallis H tests were used for statistical evaluation of associated variables according to dependency status.**FINDINGS:**The patients enrolled into the study included 457 males and 194 females with an age average of 33.89.The patterns of traffic accidents were intra-vehicle traffic accident by 31.2%,extravehicular traffic accident by 50.5%,motorcycle accident by 18.1%.Injured body site of the patients were lower limb by 45.3%,upper limb by 35.9,head by 30.7% and face by 19%, respectively.GCS, AIS and ISS scores were grouped for statistical calculations.Evaluation of patient outcomes revealed discharge in a healthy state by 88.8%,admission to the clinic by 8.6%, admission to intensive care unit by 2% and exitus by 3%.Mean cost of traffic accidents was found 247,38TL.The effect of traffic accident pattern on the cost was not statistically significant.The effect of clinical outcomes on the cost was found statistically significant.There was a statistically significant effect of GCS,AIS,ISS trauma scores on the cost.A correlation test was performed in the study to detect a significant conformity between traffic accident patterns,clinical outcomes,trauma scores and cost.There was not any significant association between traffic accident patterns and cost.The association between clinical outcomes and cost was weakly significant. A positively weak association was found between the cost and GCS. The association between AIS and ISS and the cost was moderately significant and a positive correlation was found.**DISCUSSION:**Traffic accidents are one of the basic causes of death among younger population below 50 years of age. Traffic accident patterns were evaluated in terms of AIS and ISS efficiency and correlation.There was not any difference between test and treatment costs and traffic accident patterns when efficiency of traffic accidents was evaluated on costs.Costs increase by increase of AIS and ISS scores.Clinical outcomes are also effective on the cost.**CONCLUSION:**Traffic accidents usually cause multi-traumas and costs of the tests and treatment services are detected higher.The association and correlation between trauma scores and cost were evaluated; and costs increase by increase in numeric data of the trauma scores.An increase in costs were detected according to the clinical progress of the patients. We believe that trainings should be increased to reduce traffic accidents for health as well as country economy.

#19163 : Epidemiological profile of an acute renal failure at emergency department: an observational study**Authors:**

Nadia Zaouak (1), Yosra YAHIA (1), Khedija Zaouche (1), Abderrahim Achouri (1), Radhia Boubaker (1), Asma Ben Hamida (1), Hamida Maghraoui (1), Kamel Majed (1)

1. Emergency department, La Rabta hospital, tunis, TUNISIA

Keywords: Epidemiology-Acute renal failure-Emergency

Abstract :

Background : The mechanism of renal damage is often multifactorial and must be taken into account in the therapeutic approach. Acute renal failure (ARF) commonly points to the severity of patients. The main objective of this study was to determine the epidemiological profile of ARF at emergency department (ED) .

Methods: It was a retrospective observational study. All patients hospitalized at ED between July 2018 and April 2019 and presented an ARF were included. ARF was defined by clearance of creatininemia ≤ 60 ml/mn. Data of patients were collected and a descriptive analysis was done on SPSS22 software.

Results: 255 patients were included. The mean age was 64 ± 26 years. 157 (61,6%) were females and 98 (38,4%) were males. Medical history's patients were : hypertension (49%), diabete (51,7%) and dyslipidemia (14%). Diagnoses of hospitalization were sepsis (20%), acute heart failure (17%), acute coronary syndrome (14%), diabetic ketoacidosis (10%), septic shock (8%) and other shock states (6%). Mean creatininemia was $32,98 \pm 29$ mg/dl, uraemia = $1,29 \pm 0,7$ g/L, Natremia = 135 ± 4 mmoles/L, Kalemia = $4,3 \pm 0,7$ mmoles/L. The mortality rate was 7%. The duration of hospitalization was $34,6 \pm 35$ hours. 45,9% were discharged, 47% were transferred to other services.

Discussion and Conclusion: In literature, the main etiologies of acute renal failure are hypovolemia, sepsis, nephrotoxicity, cardio-vascular diseases and surgical causes. Intra-hospital mortality varies according to the studies. In a swiss study conducted at ED, sepsis and drug nephrotoxicity were the main causes of ARF. The mortality rate was 10%. Similarly, our study showed that sepsis was the most frequent cause of ARF and the mortality rate was 7%. Therefore, the etiological treatment is essential to improve the prognosis in ARF at ED.

#19164 : Knowledge about pressure ulcer prevention: A survey of EMS providers

Authors:

Marja Mäkinen (1), Elina Haavisto (2), Veronica Lindström (3), Karin Brolin (4), Maaret Castrén (5)

1. PhD, Department of Emergency Medicine and Services, Helsinki University Hospital and Helsinki University, Helsinki, Finland. , Helsinki, FINLAND
2. Professor, University of Turku, Department of Nursing Science, Satakunta central hospital, Turku, FINLAND
3. PhD, Department of Emergency Medicine at Södersjukhuset and Clinical Science and Education at Södersjukhuset, Karolinska Institutet, Sweden, Stockholm, SWEDEN
4. MSc, Department of Emergency Medicine at Södersjukhuset and Clinical Science and Education at Södersjukhuset, Karolinska Institutet, Sweden, Stockholm, SWEDEN
5. Professor, Department of Emergency Medicine and Services, Helsinki University Hospital and Helsinki University, Helsinki, Finland. , Helsinki, FINLAND

Keywords: Ambulance, EMS, PU, attitudes, knowledge

Abstract :

Background: Pressure ulcers may develop during emergency transport. In particular, patients immobilized for long ambulance transports are exposed to continuous pressure causing skin lesions, associated with morbidity and mortality. In 95% of the cases, pressure ulcers can be prevented. Research of the integration of prevention practices of pressure ulcers in the emergency medical services (EMS) context is scarce.

Aim: To describe the knowledge and attitudes of prevention of pressure ulcers practices in EMS. To produce information that can be used in the development of prevention practices and early identification of pressure ulcers in the prehospital setting.

Materials and methods: A cross sectional study. All EMS personnel in the Helsinki University Hospital area were invited to participate. A validated five-factor scale APuP instrument was used. The material was collected in spring and autumn 2017 through a structured e-questionnaire, which included two scales (34 claims) based on the prevention practices and early detection of pressure injuries to be rated on a three-point rating scale (1 = Right, 2 = Wrong, 3 = I don't know). The data was analyzed by the SPSS statistical program by descriptive statistics (mean and standard deviation).

Results: A total of 179 (72.7%) Finnish and 188 (28.8%) Swedish prehospital emergency care providers' participated in the study. The overall knowledge scores was FIN 63.8% vs. SWE 71.3% There was a positive correlation between rates of correct answers of participants ($r=0.83$; 95% 0.5236- 0.9489; two-tailed t-test $p< 0.000$). In general, both Finnish and Swedish participants proved to have positive attitudes towards PU prevention (FIN: 9.35/12 vs. SWE: 9.01/12). It was also observed that prehospital emergency care providers' PU education, working experience during their clinical placement were significantly related to both the Knowledge and the Attitude total scores ($p<0.000$).

Conclusion: According to the results, EMS personnel knowledge was insufficient in prevention and risk assessment of pressure ulcers and thus there is a need for further education.

#19165 : Cytokines circulate bound to albumin during sepsis**Authors:**

João Ferreira (1), Lucas Marino (1), Hermes Barbeiro (1), Denise Barbeiro (1), LuzMarina Gomez (1), Julio Alencar (1), Julio Marchini (1), Rodrigo Brandao (1), Heraldo Souza (1)

1. Faculdade de Medicina da Universidade de São Paulo, Faculdade de Medicina da Universidade de São Paulo, São Paulo, BRAZIL

Keywords: sepsis, septic shock, interleukins, biomarker

Abstract :

During sepsis, there is a dysregulation of the immune response, with several cytokines and chemokines being secreted in the blood. However, none of these cytokines proved to be a useful biomarker to identify prognosis in these patients.

It is known that cytokines may circulate bound to plasma proteins, particularly albumin. Therefore, we made the hypothesis that free cytokines, that is, the ones not bound to albumin, could be a more reliable biomarker to identify the severity of sepsis.

We collect blood samples from 81 patients presented to Emergency Room with the diagnosis of sepsis or septic shock, according to the criteria described in Sepsis-3.

Plasma samples from each patient were divided into two parts. The first one was submitted to albumin removal using a ProteoExtract® Albumin column. The second one was left untouched. Further, cytokines and chemokines were measured in both samples by Multiplex technology. Samples from the same patient (with or without albumin) were measured side by side in the same plaque. In order to calculate the percentage of free cytokines, the cytokine levels detected in the sample where albumin was removed were divided by the levels obtained in the sample that contained the whole plasma. Data are presented here as mean±SEM.

Some cytokines circulate heavily bound to albumin. MCP-1 and sCD40L plasma levels were found to be only $5.4 \pm 1.2\%$ and $8.2 \pm 1.2\%$ respectively, after albumin removal. On the other side IL-1 β ($94.4 \pm 1.9\%$), Interferon- γ ($75.4 \pm 4.3\%$), IL-12 p70 ($91.2 \pm 3.0\%$), IL-13 ($73.8 \pm 4.5\%$), IL-4 ($82.8 \pm 4.4\%$) circulate mostly free, since their concentrations after albumin removal is almost unchanged. A third group is represented by cytokines that circulate partially bound to albumin, IL-10 ($60.1 \pm 4.7\%$), IL-6 ($56.1 \pm 2.7\%$), IL-1Ra ($46.7 \pm 4.8\%$).

No differences were found comparing this ratio (cytokine level after and before albumin removal) between the patients who survived or not, or between the patients with sepsis and septic shock.

We conclude that albumin binding is variable among circulating cytokines during sepsis, however, free cytokines cannot be used as biomarker of prognosis in patients with sepsis.

Trial Registration / Funding Information (only) :

This work was funded by FAPESP (Fundação de Amparo a Pesquisa do Estado de São Paulo), grant #16/14566-4

#19166 : Epidemiological profile of elderly patients at Emergency Department: an observational study**Authors:**

Nadia Zaouak (1), Yosra YAHIA (1), Khedija Zaouche (1), Ramla Baccouche (1), Radhia Boubaker (1), Asma Ben Hamida (1), Hamida Maghraoui (1), Kamel Majed (1)

1. Emergency department, La Rabta hospital, tunis, TUNISIA

Keywords: Epidemiology-Elderly-Emergency

Abstract :

Background: Elderly patients often use urgent medical services. Emergency Department (ED) receive about 40% of elderly patients. The aim of this study is to determine the epidemiological profile of elderly patients in ED.

Methods : This is a retrospective observational study conducted in all old patients aged more than 75 years old admitted to ED between May 2018 and April 2019. Data of patients were collected and a descriptive analysis was done on SPSS22 software.

Results : A total of 233 elderly patients were included. The mean age was 75 ± 7 years. 48,8% were females and 51,4% were males. 33% suffered from chest pain, 30% from dyspnea, and 14% from fever. Patients had a history of hypertension (56%), diabetes (49%) and coronary disease (29,6%). The mean Charlson index was $1,45 \pm$. At admission systolic blood pressure was 118 ± 4 mmHg, diastolic blood pressure $56,6 \pm 3$ mmHg, heart rate $=97 \pm 32$ c/mn, respiratory rate $=21 \pm 7$ c/mn, Median Glasgow score = 13. Hospitalization diagnoses were: diabetic ketoacidosis (29%), acute coronary syndrome (16%), acute heart failure (9%), meningoenzephalitis (9%), sepsis (8%), hypoxemic pneumonia (8%), acute exacerbation of chronic obstructive pulmonary disease (6%), hemorrhagic syndrome (6%), stroke (4%). 35% were discharged, 45% were transferred to other services including 5% to intensive care unit. The rate of mortality was 20%.

Discussion and Conclusion : In one study conducted in elderly patients hospitalized at the ED, the mortality rate was 19%. The diagnoses retained were: acute heart failure in 23%, stroke in 9,7% and diabetic decompensation in 7,9%. Our results showed that metabolic and cardiovascular pathologies were the most frequent diagnoses in elderly patients admitted at ED with a mortality rate of 20%.

#19167 : Clinical decision rules in cervical spine injury assessment: a prospective study in a paediatric trauma centre**Authors:**

Natalie Phillips (1), Katie Rasmussen (1), Sally Gray (2), Kerrie Ann Abel (2), Geoff Askin (3), Robyn Brady (4), Mark Walsh (5), Jason Acworth (4), Franz Babl (6)

1. Emergency, Queensland Children's Hospital and, Child Health Research Centre, School of Medicine, University of Queensland, BRISBANE, AUSTRALIA
2. Emergency, Queensland Children's Hospital, Queensland Health, BRISBANE, AUSTRALIA
3. Orthopaedic Department (Spinal Services), Queensland Children's Hospital and, School of Medicine, University of Queensland, BRISBANE, AUSTRALIA
4. Emergency, Queensland Children's Hospital and, School of Medicine, University of Queensland, BRISBANE, AUSTRALIA
5. Radiology Department, Queensland Children's Hospital and, School of Medicine, University of Queensland, BRISBANE, AUSTRALIA
6. Emergency, Royal Children's Melbourne, Murdoch Children's Research Institute and, Department of Paediatrics, University of Melbourne, Melbourne, AUSTRALIA

Keywords: CHILD, EMERGENCY MEDICINE, SPINAL INJURIES, TOMOGRAPHY, X-RAY COMPUTED, X-RAY

Abstract :**Background:**

Paediatric cervical spine injury (CSI) is rare but can have devastating consequences. In an attempt to identify all children with CSI, many children are assessed for possible injury and may either be "clinically cleared" or receive imaging to exclude radiologically apparent injury. Clinical decision rules (CDRs), or proposed rules, are commonly used to guide imaging decisions despite limited evidence for their use in paediatric populations.

Objectives:

To determine the frequency of previously identified risk factors for CSI in children presenting to a single Australian centre and to assess the performance of commonly used CDRs or proposed rules when strictly applied to our population, including the projected impact on imaging rates if these CDRs were strictly applied.

Method:

Prospective observational study across one year of all children under 16 years presenting to Emergency Department (ED) with possible CSI as defined either immobilization for possible CSI, neck pain in the context of trauma or otherwise considered at risk by the ED team. Those with imaging prior to arrival were examined as separate cohort. CDR variables for the National Emergency X-ray Utilization Study (NEXUS) rule, Canadian Cervical Spine Rule and proposed Paediatric Emergency Care Applied Research Network (PECARN) rule were collected prospectively and applied post hoc.

Results:

1010 children were enrolled; 973 had not received prior imaging. Of these 973, two thirds were male, median age was 10.9 years and 16% were aged under 5. 40.7% received imaging of their cervical spine with 32.4% receiving X- Rays, 13.4% Computed Tomography and 3% Magnetic resonance imaging. 5 children had CSI. Nine children of the 37 with prior imaging had CSI.

All 3 CDRs identified the 5 children with CSI who had not received prior imaging (Sens 100%, 95%CI 56-100). The NEXUS rule did not identify 2 out of the 9 children with prior imaging.

If strictly applied as a rule for imaging, all 3 CDRs or proposed CDRs would increase imaging rates in our setting, with individual CDR guided rates ranging between 44 and 68%. Despite these higher projected imaging rates, and while all but 2 imaged children were positive for at least one of the three rules (i.e. imaging indicated according to the CDR), no single rule suggested that all children imaged in current practice should actually be imaged; individual NEXUS and PECARN CDRs were positive in 82 and 91% of those imaged respectively.

Conclusion:

Paediatric CSI is rare, and while many children are clinically cleared without imaging, a considerable percentage receive imaging for relatively few injuries detected. CDRs have been proposed to guide imaging decisions, however the use of those currently available to the paediatric practitioner, could, if strictly applied, result in more children receiving imaging than occurs in current practice. Research with a larger cohort is required to assess whether a more refined CDR can be designed to limit discomfort, cost and radiation exposure, and to formally determine the performance of current rules (including sensitivity in injury detection) in the paediatric setting.

Trial Registration / Funding Information (only) :

Funding: The study was funded by a grant from the Emergency Medicine Foundation (Australasia) Queensland Program- EMSS-404R21-2014.

#19168 : Evolution of bystander intention to perform cardiopulmonary resuscitation after training : an online survey.**Authors:**

Django Rosa (1), Mélanie Suppan (2), Robert Larribau (1), Marc Niquille (1), François Sarasin (1), Simon Regard (1), Laurent Suppan (1)

1. Division of Emergency Medicine, Geneva University Hospitals, Geneva, SWITZERLAND

2. Division of Anesthesiology, Geneva University Hospitals, Geneva, SWITZERLAND

Keywords: resuscitation, CPR, education, out-of-hospital cardiac arrest (OHCA), behaviour

Abstract :**Background:**

Early cardiopulmonary resuscitation (CPR) dramatically increases the chances of neurologically intact survival after cardiac arrest. CPR is however initiated by bystanders in less than half of all out-of-hospital cardiac arrests. The probability of starting CPR depends on the intention to perform resuscitation, which can be divided into three components: attitude, perceived norms, and self-efficacy. The aim of our study was to evaluate how these components change according to the time elapsed since the last CPR training.

Method:

After consultation of our local ethics committee, a web-based survey was created. Intention to perform CPR was assessed by 17 questions based on a 4-point Likert scale.

A link to the survey was sent via e-mail by a Red Cross National Society affiliated CPR training centre based in Geneva, Switzerland, to all previous participants for whom an electronic address was available. No personal data other than that required for the demographic analysis was ever recorded or asked for.

After connection to the web site, a consent form and confidentiality statement were immediately displayed.

Surveys were excluded if they were completed by healthcare professionals, healthcare students, or if the last CPR training took place more than five years prior to our study.

Data was stored in an encrypted MySQL database, extracted to a comma-separated value file, and analysed using Stata 15. Participants were sorted in two groups according to their last CPR training (< 1 year and \geq 1 year). Fisher's exact test or chi-square test were used according to normality and sample size. A p value < 0.05 was considered significant.

Results:

3360 e-mails were sent at the end of January 2019. 162 surveys were included in our analysis (59 were excluded according to our criteria). There was no significant difference in demographics between the two groups.

Attitude: 5 out of 6 elements did not differ significantly. The \geq 1 year group was more worried about the risk of contracting a transmissible illness in (p=0.010).

Perceived norms: 5 out of 6 elements did not differ significantly. Participants in the \geq 1 year group were more prone to the risk of diffusion of responsibility (p=0.011).

Self-efficacy: 2 out of 5 elements did not differ significantly. Participants in the \geq 1 year group felt less confident about their ability to recognize a cardiac arrest (p < 0.001) and to perform CPR (p=0.029). They also felt they wouldn't be helpful if they had to deal with a cardiac arrest (p=0.004).

Conclusion:

After CPR training, elements related to all three components determining the intention to perform CPR decreased significantly over time. This might prevent some bystanders from providing early CPR, and further research should therefore focus on means to prevent, avoid, or compensate this decrease, far beyond technical considerations.

Trial Registration / Funding Information (only) :

N/A

#19169 : Developing the role of emergency physicians in disaster relief mission during Lombok earthquake**Authors:**

Ali Haedar (1), Alfrina Hany (2), Aulia Dewi Kusumawati (3), Aminnudin Ghafur (3)

1. Emergency Physician, Universitas Brawijaya, Malang, INDONESIA
2. Critical Care Nurse, Universitas Brawijaya, Malang, INDONESIA
3. Emergency Medicine Resident, Universitas Brawijaya, Malang, INDONESIA

Keywords: disaster response, emergency physicians, humanitarian assistance, Lombok earthquake

Abstract :**Background:**

On 5 August 2018, a destructive and shallow earthquake measuring Mw 6.9 (ML 7.0 according to BMKG) struck the island of Lombok, Indonesia. It was the main shock following its foreshock, a nearby Mw 6.4 earthquake on 29 July. It was followed by another 6.9 earthquake on 19 August 2018. Officials stated that at least 80% of structures in North Lombok were either damaged or destroyed. In the aftermath of the earthquake 558 people were confirmed killed while more than 7,000 were confirmed injured. More than 417,000 people were displaced.

Methods:

Medical - Disaster Assessment Team Universitas Brawijaya (DAT-UB) was assigned to perform disaster relief mission for the Lombok earthquake. Mainly to set-up emergency medical care system; pre-hospital emergency care & referral system, in-hospital emergency care system, and disposition & evacuation system.

Results:

Our four steps to perform in disaster response are coordination, prepare equipment & tools, build the system, and arrange the facilities. (1) Coordination: When we resolved to play a role in Lombok earthquake relief, we knew we would need key partners to be as impactful with our efforts as we knew we needed to be. To put it simply, the more we prepare beforehand, the better our response will be. We build relationships and develop coordination plans with local people and local Governments, disaster relief agencies, Health Agencies, non-governmental organizations, civil society and university partners. (2) Prepare equipment & tools: Before deployed to the disaster affected area, we need to assess the impact of the disaster. Based on the data of how many people are to be affected and how many are in critical need, we build a plan for the most urgent but visible actions to perform. (3) Build the system: our team developed an inter-agency operational plan in coordination with the health cluster members and set up reporting mechanisms at this stage to track how, who, where, when, & why assistance is delivered and when needs are changing. In our mission, we assisted the hospital to re-establish its pre-hospital emergency care & referral system, in-hospital emergency care system, and disposition & evacuation system after emergency care at the emergency room. (4) Arrange the facilities: field hospital plays a critically important role in disaster response, from natural calamities like earthquake in Lombok, to outbreak of disease and violent conflicts. These facilities are the primary drivers for reducing the human life consequences of disaster, and helping survivors recover more quickly.

Discussion & Conclusions:

Emergency physicians are an important part of the disaster response and have a specific role. The team must have quality, training and equipment or supplies so it can respond with success rather impose a burden on the local system. They also must strive for self-sufficiency, a quality of care that is appropriate for the context, with credentials that meet a minimum acceptable standard. We have learnt that collaboration is key for disaster response efforts, because there is no Superman in a humanitarian assistance and disaster response.

#19170 : PAIN MANAGEMENT IN THE URGENCY AND EMERGENCY SETTING IN THE PATIENT WITH MAJOR TRAUMA: THE CONTRIBUTION OF THE REENGINEERING OF THE Therapeutic Diagnostic pathway (TDP)**Authors:**

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), SERENA MARRA (2), SARA MACEDONIO (3), SEBASTIANO GEROSA (3), STEFANO PERLINI (4), MARIO MOSCONI (5), FABRIZIO CUZZOCREA (5), FRANCESCO BENAZZO (5), FABIO SCIUTTI (6), MIRKO BELLIATO (6), GIORGIO IOTTI (6), LORENZO COBIANCHI (7), SABINO LUZZI (8), RENATO GALZIO (8), ELVIS LAFE (9), FEDERICO ZAPPOLI THYRION (10), ALESSANDRA PALO (6)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. EMERGENCY DEPARTEMENT, SST SANCARLO BORROMEO, PAVIA, ITALY
3. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. , POLICLINICO , pavia, ITALY
5. orthopaedics, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. INTENSIVE CARE UNIT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
7. SURGERY, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
8. Neurosurgery, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
9. NEURO RADIODIAGNOSTIC, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
10. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: PAIN MANAGEMENT, EMERGENCY DEPARTEMENT, MAJOR TRAUMA

Abstract :

Introduction: Major Trauma (MT) constitutes in Western countries the first cause of death and permanent disability in the population below 45 years of age. The pathology often causes pain and suffering to the patient, but there are not many data in the literature on pain and its management in the setting of the first assessment of the urgency of the patient (PCs).

Purpose: A study was conducted to assess the impact of the new corporate protocol at our ED, in terms of appropriateness of pain management, during its first months of application.

Materials and methods: Enrolled PCs with MT stated to our ED, in the period January-May 2018. Assessed: The ISS score of gravity of the PZ; Anatomical lesions locations; The outcome of patients and hospitalization departments; The data relating to the recording of pain and its management

Results: In the period considered, acceptance 126 patients adhering to the classification criteria for severe trauma, 105 men 21 women, with an average age of 43 years, have reached the emergency room.

The average ISS identified is 15.4; Well 51 patients at the end of the course had an estimated ISS > 14. 41% of patients were discharged directly from PS, the 1% is unfortunately deceased. The remaining patients were hospitalized; In particular, 12% in resuscitation, 24% in orthopaedics, 6% in general surgery and 6% in neurosurgery.

In almost all patients it was possible to detect lesions at the expense of several body districts and the most frequent traumas were observed at the cranial level (27%), thoracic (22%) and spine (17%).

For more than 100 patients, data relating to the presence of pain are available, already in the first context of the urgency, 84 of these have necessitated of the analgesia. The most administered analgesic is paracetamol, followed by Fentanest and sufentanyl. Very used tramadol and fans.

About 20 patients needed sedation to manage an anxiety or procedural condition. The medications used in these cases were Propofol, ketamine and benzodiazepines.

Conclusions: Application of the new protocol has allowed, thanks to an adequate training of physicians and nurses, a rapid response in terms of appropriateness in the recognition of pathology, the correct application of diagnostic skills and Therapeutic also in the recognition of pain and in the correct initiation to TRP analgesic

#19172 : Non-ST segment elevation myocardial infarction: comparison of the electrocardiographic findings**Authors:**

fatma Mejri (1), syrine keskes (1), dhekra Hosni (1), ines chermiti (1), montasser bhouri (1), amira Bakir (1), najla elheni (2), Sami Souissi (1), Hanan Ghazali (1)

1. emergency department, regional hospital of ben arous, ben arous, TUNISIA
2. , regional hospital of ben arous, ben arous, TUNISIA

Keywords: acute coronary syndrome, electrocardiogram, emergency department

Abstract :**Introduction:**

The 12-lead electrocardiogram (ECG) is the first line for the diagnosis of acute coronary syndrome. It can show an ST-segment depression, T-wave inversion or no ischemic changes. ST-segment depression has been considered to be a high-risk ECG finding in patients with non ST-segment elevation myocardial infarction (NSTEMI) with an increased risk of early and long-term cardiovascular events

However, limited data are available on the characteristics and treatment of patients with NSTEMI with the other presentations.

Objective: To compare the clinical and biological characteristics and outcomes of NSTEMI subgroups: ST segment depression, T wave depression and no ischemic changes.

Methods: A prospective observational study was conducted over height years. Patients were eligible for inclusion if the diagnosis of NSTEMI was made (based on anamnestic criteria, clinical, electrocardiographic and biological). The demographics, co-morbidities, clinical, biological data and in-hospital procedures were collected. The ECG findings were categorized into three groups: Group 1 (no ischemic changes), Group 2 (T-wave inversion) and Group3 (ST segment depression). The prognosis was based on the evaluation of mortality at 6 months. Multivariate analysis by multiple logistic regressions was performed.

Results: Inclusion of 660 patients. Group 1 (no ischemic changes n=163), Group 2 (T-wave inversion n= 131) and Group3 (ST segment depression n=316). Mean age was 61 ± 12 years. Sex ratio =1.38. Comorbidities n (%): hypertension 374(57), diabetes 287(44), dyslipidemia 188(29), known coronary artery disease 189(29). The comparative study of clinical, biological characteristics and outcomes of the 3 groups (no ischemic changes vs. T wave inversion vs. ST segment depression) founds: patients in group (T-wave inversion) were more aged : mean age was 58 years (35,88) vs. 87 years (18,60) vs. 62 years (29,93); men belong generally to group (ST segment depression) (56 vs. 56 vs. 62%) ; group (T-wave inversion) were more likely to have a history of diabetes (41 vs. 56 vs. 46%) ;ultra-sensible troponin were more likely elevated in group (T-wave inversion): 17 vs. 37 vs. 35 %). The mortality rate at six months was 1, 2 and 10% respectively. Patients with ST segment depression had a higher risk of mortality with OR=21, $p < 0.001$, 95% CI [0.773 – 0.972].

Conclusions:

The clinical and angiographic characteristics and treatment and outcomes of patients with NSTEMI differed substantially according to the presenting ECG findings. Patients with ST-segment depression have a greater risk of adjusted in-hospital mortality compared with the other groups. These findings highlight the importance of integrating the presenting ECG findings into the risk stratification algorithm for patients with NSTEMI.

#19173 : Charlson index score in elderly's prognosis at emergency department : an observational study**Authors:**

Yosra YAHIA (1), Nadia Zaouak (1), Khedija Zaouche (1), Hadil Mhadhbi (1), Radhia Boubaker (1), Asma Ben Hamida (1), Hamida Maghraoui (1), Kamel Majed (1)

1. Emergency department, La Rabta hospital, tunis, TUNISIA

Keywords: Charlson index score-Elderly-Prognosis-Emergency

Abstract :

Background : Presentation of elderly patients to Emergency Departments (ED) is more and more increasing. The CHARLSON index score is used to estimate the risk of death due to comorbidities. The aim of this study is to evaluate the ability of CHARLSON index score to predict prognosis in elderly patients hospitalized at ED.

Methods : This is a retrospective observational study conducted in elderly patients (≥ 65 years) admitted to ED between May 2018 and January 2019. Data of all patients were collected and the CHARLSON index score was calculated at admission. A statistical analysis was done on SPSS22 software using Student's t-test ($p < 0,05$). The main study endpoints were the use of mechanical ventilation or vasoactive drugs and inpatient mortality.

Results: A total of 233 elderly patients were included. The mean age was 75 ± 7 years. 111 (48,5%) were females and 120 (51,4%) males. Main medical history's patients were : hypertension (55%), diabete (44%) and heart failure (26%). Hospitalization diagnoses were: acute coronary syndrome (35%), hypoxemic pneumonia (11%), acute heart failure (10%), diabetic ketoacidosis (9%), acute exacerbation of chronic obstructive pulmonary disease (9%), meningoencephalitis (5%), sepsis (8%) and hemorrhagic syndrome (7%). Mechanical ventilation was used in 23% of patients and vasoactive drugs in 17,3%. 65% were discharged, 35% were transferred to other services including 1,5% to intensive care unit. The mean duration of stay was $35,17 \pm 43$ hours. The mortality rate was 22% and mean CHARLSON index score was $1,2 \pm 0,48$. The score was significantly correlated with duration of stay ($p = 0,000$) and vasoactive drugs ($p = 0,05$) but not with mechanical ventilation ($p = 0,73$) and inhospital mortality ($p = 0,88$).

Discussion and Conclusion : The Charlson Index score provides a simple mean to quantify the effect of comorbidities incorporating the severity of a particular disease and taking into account the cumulative effects of multiple pathological processes on the clinical outcomes and particularly on the mortality. In our study the CHARLSON index score wasn't useful for predicting the inhospital mortality in elderly patients admitted to ED but it was significantly correlated to the use of vasoactive drugs. Further studies seem necessary to confirm these results.

#19174 : Acute poisoning by cardiotoxic drugs in the emergency department**Authors:**

Sana Tabib (1), Ines Chermiti (1), Hanène Ghazali (1), Dhekra Hosni (1), Amel Ben Garfa (1), Saoussen Chiboub (1), Mohamed Mguidiche (1), Jamila Habli (2), Souad Chkir (2), Sami Souissi (1)

1. Emergency department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA
2. Cardiology department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA

Keywords: Poisoning, cardiotoxic agents, management, acute voluntary intoxication

Abstract :

Introduction : Acute voluntary intoxication (AVI) are increasing nowadays and represents the second cause of mortality in young adults behind traumatic causes. Poisoning by cardiotoxic drugs is a risk factor of over-mortality due to cardiovascular complications (cardiac shock, bradycardia, membrane-stabilizing effects (MSE)...) and therapeutic difficulties.

The aim of our study was to describe management of patients admitted to the emergency department (ED) for AVI by cardiotoxic drugs.

Methods: we conducted a retrospective, longitudinal and descriptive study during six years.

We included patients aged more than 16 years old admitted for AVI by cardiotoxic agents. Cardiotoxic drugs included antiarrhythmic drugs, hypotensive agents and drugs causing MSE.

All descriptive data was collected: demographic, clinical, paraclinical and therapeutic. Level of intention of the suicide attempt was evaluated by the suicide intent scale (SIS)

Results: Three hundred patients were admitted with AVI from whom 122 used cardiotoxic drugs (37%). Mean age 29 ± 14 years. Sex-ratio 0.27. Thirty-one percents of patients ($n=35$) had no medical history and 39% ($n=43$) had a psychiatric past medical history. Six patients (5%) had a history of hospitalization in intensive care after a suicide attempt. Median time to ED visit after drug ingestion was 2 [1-4] hours with extremes ranging from less than an hour to 17 hours. Multidrug poisoning: 66 patients (59%). Cardiotoxic drugs types (%): antidepressants(31), neuroleptics(30), beta-blockers(20), calcium antagonists(15), carbamazepin(15), theophylin(15), ACE inhibitors(7).

Clinical findings: half of patients had tachycardia, 19 patients had bradycardia, 12 patients had hypotension and 10 patients had a GCS less than 9.

MSE was diagnosed in five patients and atrioventricular block in one patient.

Treatment procedures (n): early digestive tract decontamination (19), activated charcoal (47), vaso-actives agents (6), intubation (17), external pacing (2).

Forty-one patients (37%) were admitted to intensive care unit. Mortality

Mean ISS 8 ± 5 . Fifty six patients (50%) had a score greater than 8.

Conclusions: Poisoning by cardiotoxic agents was frequent, concerned a young population and represented more than one third of all AVI. Major complications were not frequent. Local protocols, trained emergency teams and up-to date skills are the keys for successful management of these patients.

#19175 : Myocardial strain as a marker of disease severity in infants with bronchiolitis, a pilot study**Authors:**

Anna Maria Caterina Musolino (1), Giulia Vanina Cantone (2), Braguglia Annabella (3), Melania Evangelisti (2), Maria Clemente (3), Elena Boccuzzi (1), Maria Chiara Supino (1), Maria Pia Villa (2), Anna Claudia Massolo (3)

1. Department of Emergency Services, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy , Rome, ITALY
2. 2nd Faculty of Medicine and Psychology, Pediatric Department, Sant'Andrea Hospital, Rome, Italy, Rome, ITALY
3. Department of Medical and Surgical Neonatology, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy , Rome, ITALY

Keywords: Bronchiolitis, Myocardial Strain, Functional Echocardiography

Abstract :

Introduction: Bronchiolitis is a respiratory viral infection, in most severe cases this may lead to acute respiratory failure and pulmonary hypertension (PH), although echocardiographic evidences of PH have been reported in mild cases too. PH may potentially affect cardiac function, though this has never been investigated so far.

Aim: To evaluate cardiac function in infants with bronchiolitis.

Methods: Infants with evidence of bronchiolitis were included. All cases underwent viral antigen testing on nasopharyngeal aspirates, arterial blood gas test and functional echocardiography within 24 hours from admission. Systolic and diastolic function for the left ventricle (LV) and right ventricle (RV) were assessed with longitudinal strain, as a measure of percentage of myocardial deformation. Based on existing normative data cut-off for RV and LV function were assessed. PH was defined by the presence of tricuspid regurgitation jet (TR) and septal position quantified by end-systolic eccentricity index (EI ES). Main outcomes (duration of respiratory support, DRS, and length of stay, LOS), were collected.

Results: 28 infants, of which 15 males and 13 females, age 31 ± 19 days, weight 3.160 (1.960–4.010) kg. 17 and 11 patients had syncytial respiratory virus and rhinovirus infection respectively. Cases with bronchiolitis showed significantly lower values of LS for both ventricles (LV: $p0.02$ and RV: $p0.03$) compared to normative values. Among these, 12 (43%) had normal biventricular function, 10 (36%) showed LV dysfunction and 6 (21%) a biventricular dysfunction. No significant data were found for TR and EI ES. Infants with biventricular dysfunction showed a significant increase in LOS ($p0.03$) and DRS ($p0.03$) compared to those with normal function.

Conclusions: Infants with bronchiolitis may present myocardial impairment. Cardiac function may be related to disease severity and should be routinely assessed. Future studies with larger samples are needed to confirm these data.

Trial Registration / Funding Information (only) :

Nothing to disclose.

#19177 : Value of SIRS, NEWS and qSOFA in the identification of sepsis and septic shock in the emergency department :A prospective observational study**Authors:**

Hadil MHADHBI (1), Khédija ZAOUCHE (2), Yosra YAHYA (2), Radhia BOUBAKER (3), Ramla BACCOUCHE (2), Abdelwaheb MGHIRBI (2), Hamida MAGHRAOUI (2), Kamel MAJED (2)

1. HMPIT, HMPIT, Tunis , TUNISIA
2. les urgences , La Rabta, Tunis, TUNISIA
3. la Rabta emergency departement, la rabta, tunis, TUNISIA

Keywords: SIRS; NEWS; qSOFA;sepsis ; septic shock ;diagnosis;emergency departement;early recognition

Abstract :

Background: Sepsis is a complex syndrome whose the early recognition is sometimes difficult in the emergency department(ED). There have been significant debate regarding the use of clinical decision tools such as Systemic Inflammatory Response Syndrome (SIRS); quick Sepsis-related Organ Failure Assessment (qSOFA)and the National Early Warning Score (NEWS) in the early recognition of sepsis and septic shock. The purpose of our study was to evaluate and compare the accuracy of SIRS, NEWS and qSOFA for the identification of sepsis and septic shock in the emergency departement (ED).

Methods: A prospective observational study was performed in non surgical patients over the age of 18 years old admitted to the ED over a period of one year .The three scores were calculated at admission. We assessed predictive ability of the SIRS, NEWS and qSOFA for the diagnosis of sepsis and septic shock using the area under the receiver-operating characteristic (AUROC) curves.

Results: A total of 600 patients were included. The mean age was 59 ± 17 years. 369 (61, 5%) were male. The mean SIRS was 2 ± 1 , the mean NEWS was 6 ± 3 and the mean qSOFA was 1 ± 1 . The prevalence of sepsis was 16, 8% of which 1,8% patients had a septic shock.The three scores were significantly correlated with the diagnosis of sepsis and septic shock ($p < 0.001$). For SIRS : AUROC was 0,670 (95% confidence intervals [CI] 0,610 to 0,730). For NEWS: AUROC was 0, 810 (95% confidence intervals [CI] 0,772 to 0,849). For qSOFA: AUROC was 0,706(95% confidence intervals [CI] 0,646 to 0,766).

Discussion & Conclusions: Several studies were conducted to evaluate the usefulness of different scoring systems in the early identification of sepsis and septic shock in the ED, When the existing studies in the literature are examined, it is seen that there are different and contradictory results. This is thought to be due to different patient populations, different scoring systems and the fact that studies are performed prospectively or retrospectively, but no study compared in the same time SIRS, NEWS and qSOFA. In our study NEWS was more accurate than both SIRS and qSOFA for the early detection of sepsis and septic shock.

#19178 : Compliance with recommended follow up chest imaging in patients discharged from the Emergency Department**Authors:**

Melanie Sneddon (1), Monica Wallace (1), Christopher Dale (1)

1. Emergency department, Royal Alexandra Hospital, Glasgow, UK

Keywords: follow up, emergency department, radiology, chest film, CXR, imaging

Abstract :

Radiologists often include recommendations for follow-up imaging in their report of abnormal chest x-rays (CXRs) that have been conducted by the Emergency Department (ED). This audit aimed to assess if follow-up imaging was being performed as recommended by the radiology department for patients who had been discharged home the same day they presented to Royal Alexandra Hospital (RAH), Scotland. A retrospective, cohort study was carried out using patient data from the RAH ED during the period of 01/01/2018 to 30/06/2018 to investigate if follow-up chest imaging was being arranged correctly for those who had been recommended it. There were 35 patients who fit the criteria for the study. The results showed that 60% of patients who were discharged from RAH ED received the follow-up CXR they had been recommended by the radiologist. The results highlighted a need for a standard procedure in the ED and in the radiology department for how to respond when a patient who is discharged from the ED requires follow-up imaging.

#19179 : OPTIMIZATION OF THE RECOGNITION AT THE DOOR OF THE PATIENT WITH MAJOR TRAUMA THROUGH THE REENGINEERING OF THE TDP: THE EXPERIENCE OF A LOMBARD TRAUMA CENTER**Authors:**

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), SERENA MARRA (2), ALESSANDRA PALO (3), SARA MACEDONIO (4), SEBASTIANO GEROSA (4), MARIO MOSCONI (5), FABRIZIO CUZZOCREA (5), FRANCESCO BENAZZO (5), FABIO SCIUTTI (3), MIRKO BELLIATO (3), GIORGIO IOTTI (3), LORENZO COBIANCHI (6), PAOLO DIONIGI (6), SABINO LUZZI (7), RENATO GALZIO (7), ELVIS LAFE (8), FEDERICO ZAPPOLI THYRION (9), albamuzzi (10), carlo marena (10), giuseppina grugnetti (11), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. EMERGENCY DEPARTEMENT, SST SANCARLO BORROMEO, PAVIA, ITALY
3. INTENSIVE CARE UNIT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. orthopaedics, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. SURGERY, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
7. Neurosurgery, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
8. NEURO RADIODIAGNOSTIC, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
9. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
10. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
11. sitra, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY

Keywords: TRIAGE, EMERGENCY DEPARTEMENT, MAJOR TRAUMA

Abstract :

Introduction: Major Trauma (MT), first cause of death and permanent disability in the population under the age of 40, is a time-dependent pathology. There is broad consensus in the literature how prompt recognition and treatment of these patients leads to a significant reduction in residual mortality and disability. In 2017 it was conducted in our ED, Trauma Center, a reengineering of TDP for patients with MT to optimize their recognition at the door and management.

Purpose: Assess the impact and efficacy of the new PTD in early recognition of patients with MT.

Materials and methods: Patients identified to Triage as MT were analyzed and then compared with those that had diagnosis of MT to discharge by comparing the entire year 2014, that is before the re-engineering TDP, and the entire year 2017, first year of introduction of the new TDP with started sensitization of staff.

Results: During 2014, less than 100 patients with major trauma were identified at Triage, of which only 3% were triaged as red code. This population had a median age of 70 years with a prevalence of female sex. The waiting time for the medical exam had an average of 30 minutes and a median of 18 minutes. The color codes at the resignation were so divided: 3% red, 42% yellow, 55% green. 54% was hospitalized and 44% discharged.

Analyzing patients who have had the diagnosis of severe trauma discharge in the same year, only 58% had been correctly identified at Triage. This population had a median age of 40 years with a male prevalence, in line with the data of international literature. The color codes at the discharge were so divided: 52% red, 45% yellow, 3% green.

During 2017, 187 patients with MT were identified at triage. This population had a median age of 40 years with a prevalence of male sex. The waiting time for the medical exam had an average of 13 minutes and a median of 5 minutes. The color codes at the resignation were so divided: 42% red, 34% yellow, 24% green. Analyzing patients who were diagnosed with severe trauma discharge in the same year, 70% had been correctly identified at Triage. This population had a median age and a male prevalence overlapping with that of the population identified at triage as TG. The color codes at the discharge were so divided: 48% red, 28% yellow, 24% green.

Conclusion: The reengineering of the PDTA for PZ Con TG has allowed an earlier recognition of the population of PZ with TG since the triage with positive repercussions on the average and median times of waiting that have decreased considerably. In the modification the percentage of

undertriage (1%) and Overtriage (38-40%) Calculated by means of Cribari formula for the 2017 are in line with what is hoped by the American College of Surgeon (under Triage < 5%; overtriage > 50%).

#19180 : Epidemiological, clinical and evolving characteristics of st-elevation myocardial infarction in both urban and rural environment.**Authors:**

Chrifa Aouini (1), Dorra Loghmari (2), Farrouk Douma (1), Rabeb Mbarek (3), Fedi Dziri (1), Mounir Naija (1), Naoufel Chebili (1)

1. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA

Keywords: STEMI,enviroment,ECG,MECU

Abstract :**Epidemiological, clinical and evolving characteristics of st-elevation myocardial infarction in both urban and rural environment.**

C Aouini,D Loghmari,F Douma,R Mbarek,F Dziri,M Naija,N Chebili.

BACKGROUND:

the medical care quality of st-elevation myocardial infarction (STEMI) depends basically on the precocity of the intervention and the adopted reperfusion strategy. The access to an adequate care of STEMI in rural areas might eventually be challenging for multiple reasons . The aim of the study was to evaluate epidemiological, clinical and evolving particularities of STEMI in rural areas in comparison to urban areas.

METHODS: We collected 302 STEMI resuscitated by the mobile emergency care unit (MECU) within a comparative study over a period of 12 monthes from January 2018 to December 2018.

RESULTS:

111 patients with STEMI came from rural areas compared to 191 coming from urban areas. 75% of STEMI cases from rural areas were male. The average age was 59 year compared to 62 year for urban areas. 66% of the calls coming from rural areas were carried out by doctors at the peripheral hospital versus 23% done by doctors at academic hospitals. 65% of STEMI from rural areas were in regional and district hospitals, 23 % were in university hospitals in which 59% were in the emergency department with significant difference of 0.009 compared to urban areas .79% of calls from rural areas were diagnosed STEMI compared to 14% were identified as chest pain . 12.7% were patients with coronary artery disease(versus 17% in urban areas), 30% suffered from hypertension (versus 17% from urban areas) 30% were people with diabetes versus 28.5%from urban areas and 28% were smokers versus 26% from urban areas . We didn't report any significant difference for the medical past . 24.5% of STEMI from rural areas were not complicated versus 36% from urban areas with significant difference of 0.05. The complications we reported were cardiac arrest in 3% in both areas ,cardiogenic shock in 3% of the cases (4% in urban area) , rhythm troubles in 6% of the cases (10% in urban areas), left heart failure in 5.6% of the cases (versus 9.6% in urban areas, p=0.03).

As for the delay between the first sign of pain and the arrival of the MECU ,we noticed slightly longer delays in rural areas 3.6 hours versus 3.2 hours in urban zones without significant difference . For the reperfusion treatment, 30% of rural STEMI were thrombolysed compared to 36% of urban STEMI . 30% took advantage of angioplasty versus 32% of urban cases.

CONCLUSION: In our study group, delays of interventions are a little bit longer in rural areas with a more important complication rate but almost the same reperfusion strategy in both areas.

Trial Registration / Funding Information (only) :

no funding

#19182 : Qualitative study on using simulation to prepare emergency trainees for major incident management**Authors:**

Kishu Pharasi (1), Salwa Malik (1)

1., Brighton and Sussex University Hospitals NHS Trust, Brighton, UK

Keywords: simulation, education, high fidelity, major incident

Abstract :

Mass casualty incidents and disasters, dubbed major incidents in the UK's National Health Service (NHS), are events that all healthcare professionals hope to never have to manage yet need be prepared for. With the recent increase in the incidence of terror attacks, as well as the risks posed from natural disasters, transport incidents and structural failures, emergency departments and their staff play a significant role in the effective management and care of the casualties. Though the NHS requires hospitals to run live exercises every 3 years, a table top exercise every year and a communications test every 6 months – full scale live exercises rare due to excessive cost and labour.

To address this gap in training we propose that simulation-based training can offer a viable economic, high fidelity, and effective supplement to current teaching. By designing and running a novel multi-simulation training day we aimed to gain qualitative feedback on the effectiveness of simulation-based education on major incident preparedness.

The training day was run for 20 senior emergency doctors in training and was built around the scenario of a bomb blast at a local festival. Based on this scenario, trainees rotated through three different settings/roles in the major incident response. Each setting/role was simulated using a different simulation technique. As the overall scenario and prepared casualty cards were the same – the scenarios were run in parallel in different rooms with each setting able to communicate with the other via radio.

Room 1 used table top simulation to train initial response at the scene of the incident by triage sorting casualties, designing a casualty clearing station and creating a METHANE report. Room 2 was a board-game simulation of the local emergency department with the aim of practicing departmental organization and resource allocation. Room 3 was a simulation of a four-bed resus where high fidelity mannikins and volunteers in moulage were used to practice triage sort and clinically manage P1 casualties. The scenario was run fully three times in 45 min sessions so that trainees could rotate and learn from different settings.

Qualitative feedback was collected anonymously through feedback forms at the end of the training day. Feedback was received from 14 of the 20 participants. Pre and post session confidence in managing major incidents was collected using a 100-point Likert scale. Average pre-session confidence was calculated at 17.8% and post session confidence at 48.6%. 100% of responders strongly agreed or agreed that simulation-based training was an effective way to prepare for major incidents and 100% would recommend this training day to colleagues.

Overall, we found that emergency trainees lack confidence and experience in managing major incidents. This qualitative study provides evidence that simulation-based education can be a useful tool in teaching these skills in an economic, high-fidelity and effective manner. The novel use of parallel run simulation adds to the fidelity of the experience. This provides justification for further use and development of simulation-based education in training doctors for major incident preparedness. This study did not receive any specific funding.

Trial Registration / Funding Information (only) :

Nil

#19183 : Poisoning in pregnancy and effects on the fetus

Authors:

Evvah Karakılıç (1), Ilknur Demir Karakılıç (2), Engin Özakın (1), Nazlı Ozcan Yazlamaz (3), Gözde Yağar Gök (3)

1. Emergency Medicine, Eskişehir Osmangazi University School of Medicine, Eskişehir, TURKEY
2. Department of Obstetrics and Gynaecology, Eskişehir Şehir Hospital, Eskişehir, TURKEY
3. Emergency Medicine, Eskişehir Osmangazi University School of Medicine, Eskişehir, TURKEY

Keywords: Poisoning, pregnancy, carbon monoxide, drugs

Abstract :

Background: Poisoning in pregnancy can be accidental or intentional. Drug and carbon monoxide poisoning during pregnancy is important for emergency physicians because of the potential for acute life threat or possible life-long implications for both the mother and fetus. Physiologic changes in pregnancy may influence the absorption, distribution, and metabolism of various toxic agents. In our study, we aimed to investigate the toxicological outcome among the pregnant woman admitted for acute poisoning and their fetus.

Methods: In this retrospective cross-sectional study, in five years period (January 2013- January 2018), 117 pregnant women admitted to the emergency department with poisoning included the study. The records of patients contained incomplete information were excluded. Remaining 76 files were examined. Hospitalization with severe poisonings and contacted with by phone among these patients, 7 carbon monoxide and 11 drug poisoning, were included in the study. The clinical outcomes of pregnant women and their baby were evaluated with hospital files and asking questions by telephone.

Results: 11 drugs intoxications included in the study (4-28 week). 5 of 11 pregnant women admitted to an intensive care unit. The first patients, 28 weeks pregnant, took 1.5 grams sertraline, 4 grams quetiapine 3 hours ago. Patient intubated (GKS:5, hypotensive 95/58 mmHg) and Gastric lavage and supportive treatment were performed. The viable fetus was detected in USG and no pathological findings in nonstress test. After 3 days, the birth was delivered by cesarean due to the deceleration in nonstress test. However, 6 hours later, the baby died. The second patient, 4 weeks pregnant, took 25 mg olanzapine. She had blurred consciousness (GKS: 9), and no abnormal finding include ECG and vital sign. She observed in ICU 3 days, discharged with healing. Now she has a twine baby, but one of them has a hearing impairment (Olanzapine may cause loss of hearing in adults). Other nine pregnant women discharged with healing, and they had healthy babies.

In our study group, we found 7 pregnant women poisoned with carbon monoxide (CO). 5 patients' level of carboxyhaemoglobin (COHb) was higher than 15% (maximum 38%), but no chest pain, syncope or another severe symptom. 4 of 5 patients get hyperbaric oxygen therapy (HBOT), one of refuse HBOT. 2 pregnant women had less than 15% COHb level, but they hospitalized due to headache, vomiting and monitoring the fetus. After the observation, they discharged with healing. No negative feedback from the all family about their baby on the phone call.

Discussion: Our results demonstrate that the clinical finding of CO poisoning is important for maternal and fetal morbidities. Even if pregnant women have high COHb level, but not severe, infants were born unaffected in cases where the mother was not affected clinically. On the other hand, the type of drugs and severity of intoxication is found associated with fetal and maternal morbidity in drug poisoning

#19184 : prognostic value of blood lactate in Carbon monoxide poisoning seen in emergencies:**Authors:**

ala Zammiti (1), Hela ben Turkia (2), Maroua Mabrouk (3), siwar jerbi (3), Ines Chermiti (4), Ahlem Azouzi (4), hanene ghazeli (5), Sami Souissi (6)

1. emergency department , emergency departement of regional hospital of Ben Arous, ben arous, TUNISIA
2. urgences, emergency departement of regional hospital of Ben Arous, ben arous, TUNISIA
3. emergency department , regional hospital of Ben Arous, ben arous, TUNISIA
4. urgences, Hopital regional de Ben Arous, Ben Arous, TUNISIA
5. urgences, Hopital regional de Ben Arous, ben arous, TUNISIA
6. emergency department , regional hospital of Ben Arous, Ben Arous, TUNISIA

Keywords: poisoning; lactate; emergency departement

Abstract :**Introduction :**

Carbon monoxide poisoning (COP) is the most frequent cause of accidental intoxications deaths in the world. It is a common cause of neuropsychic sequelae. The lactate level is an early marker of severity in several pathologies but remains under studied as a prognostic factor at the COP.

The aim of this study was to determinate the prognostic value of blood lactate levels at one month, for COP patients in the emergency departments.

Methods :

An observational prospective study was conducted over 26 months. Patients aged over 16 years old, diagnosed with COP confirmed by anamnestic context, clinical symptomatology and determination of carboxyhemoglobin (HBCO) in the blood, were included. A lactate level determination was performed at admission. Clinical, therapeutic and evolutionary parameters were collected. The prognosis at one month was evaluated through a phone survey. A comparative study was conducted between the two groups of patients according to the lactate level: normal blood lactate (≤ 2 mmol / L) and high blood lactate (> 2 mmol / L).

Results :

We included 133 patients, the mean age was 37 ± 13 years, the sex ratio was 2. The source of intoxication was (%): gas water heater (63), brazier (24), heater with gas (13). The symptomatology was dominated by neurological signs (%): headache (80), vertigo (58), unconsciousness (22) and seizures (7). The average value of HBCO was $22 \pm 8\%$. High blood lactate was noted in 84 patients (63%) and mean blood lactate was 2.65 ± 1.5 mmol / L. All patients received normobaric oxygen therapy and 13% received hyperbaric oxygen therapy. The evolution at one month was marked by the occurrence in 19% of cases of minor neuropsychic sequelae (%): anxiety (13), headache (13), irritability (4), sleep disorders (4). The group of patients with high blood lactate had a lower median Glasgow score (14 vs. 15, $p = 0.03$) and more prolonged loss of consciousness (> 5 min): 6 vs 0 in the normal lactate group ($p = 0.04$). The one-month prognostic analysis found no significant difference between the two groups for neuropsychic sequelae.

Conclusion :

The initial high blood lactate is an indicator of clinical severity in COP but does not predict the occurrence of neuropsychic sequelae at one month.

#19185 : Observational first romanian international training on disaster medicine addressing the interests of the medical students' community. A pilot study.

Authors:

Eugenia - Maria Muresan (1), George Teo Voicescu (2), Adela Golea (3)

1. Instructor - Department of Emergency Medicine, University of Medicine and Pharmacy Cluj, Cluj - Napoca, ROMANIA
2. Department of Emergency Medicine, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Cluj-Napoca, ROMANIA
3. Associate Professor - Department of Emergency Medicine, University of Medicine and Pharmacy Cluj, Cluj - Napoca, ROMANIA

Keywords: emergency medicine, full-scale exercise, medical education, peer-to-peer education, table-top simulation

Abstract :

Introduction. Considering the dynamics of modern society, man-made or nature-inflicted disasters have marked the recent decades and triggered international response initiatives to alleviate these burdensome situations. On a smaller-scale perspective, medical students (MS) represent a valuable resource in such events, if awareness and introductory training are provided. The aim of our observational study is to document the most effective teaching method for such a particular learning group and the impact of peer-to-peer teaching.

Method. International Training on Disaster Medicine (ITDM) is an International Federation of Medical Students Associations initiative and the Cluj-Napoca event organized in November 9-11, 2018 in partnership with University of Medicine and Pharmacy Cluj-Napoca (Romania) was the first on a national level. The target group was represented by MS who could demonstrate a keen interest in disaster medicine. Interactive lectures delivered by previously instructed MS in disaster preparedness (as part of Training Disaster Medicine Trainers program of University of Eastern Piedmont Novara, Italy), alongside with table-top, manikin and live real-size simulations provided a novel learning environment for the attendance. During the workshops and real-size simulations, emergency medicine physicians (resident and attending) have been employed as observers to document response times, triage accuracy and organizational dynamics. Based on the data from the first course, descriptive statistics have been produced. ITDM Cluj 2019 will take place between May 23^d and 26th and data will be collected and included in the final analysis, in order to produce statistically significant observations.

Results. 20 participants from 9 countries were selected (from 62 applicants) based on an online application form. 6 of them had previous learning or disaster response experiences. The 3-days course included 13 academic lectures and 5 workshops (3 table-top simulations (TTS) on days 1 and 2, 2 real-size simulations (RSS) on day 2 (manikin) and day 3 (human victims)). 70% of the lectures and all workshops involved a peer-to-peer educational approach. A pre-test and post-test have assessed the academic progress. METHANE comprehensiveness, organizational dynamics such as assigning on-scene officers (incident commander, triage, treating and evacuation officers) and triage accuracy have improved constantly, when comparing day 1 to day 2 TTS and manikin RSS versus human victims RSS. Manikin RSS had poorer results than day 1 TTS and human victims RSS in terms of first responders's disaster confirmation call (13 minutes compared to 1.5 minutes and 2 minutes, respectively) and triage accuracy (51% compared to 63% and 61%, respectively).

Discussions and conclusions. MS presented a genuine interest in disaster medicine, with ITDM Cluj 2018 registering 3 applications/ available position. Theoretical knowledge was significantly improved on topics such as disaster development, recognizing, alerting, triage and medical procedures. Practical applications of theoretical knowledge have empowered participants to deal successfully with more difficult scenarios. Trained MS could contribute to a competent and qualitative response action in natural and humanitarian crisis and their development can be successfully achieved by inexpensive means such as peer-to-peer table-top and manikin simulations.

#19186 : REENGINEERING OF THE Therapeutic Diagnostic pathway (TDP) FOR PATIENTS WITH MAJOR TRAUMA: ANALYSIS OF THE PERFORMANCE OF a LOMBARD TRAUMA CENTER (TCr)

Authors:

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), SARA MACEDONIO (2), SEBASTIANO GEROSA (2), SERENA MARRA (3), STEFANO PERLINI (4), MARIO MOSCONI (5), FABRIZIO CUZZOCREA (5), FRANCESCO BENAZZO (5), GIORGIO IOTTI (6), MIRKO BELLIATO (6), FABIO SCIUTTI (6), LORENZO COBIANCHI (7), PAOLO DIONIGI (7), ELVIS LAFE (8), FEDERICO ZAPPOLI THYRION (9), carlo marena (10), alba muzzi (10), giuseppina grugnetti (11), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. EMERGENCY DEPARTEMENT, SST SANCARLO BORROMEO, PAVIA, ITALY
4. , POLICLINICO , pavia, ITALY
5. orthopaedics, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. INTENSIVE CARE UNIT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
7. SURGERY, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
8. NEURO RADIOLOGIC, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
9. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
10. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
11. sitra, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY

Keywords: TRIAGE, EMERGENCY DEPARTEMENT, MAJOR TRAUMA

Abstract :

Introduction: Major Trauma (MT) in Western countries is the first cause of death and disability under 45 years, with high social costs. In the hours immediately following the MT is placed greatest number of avoidable deaths (AD). AD' percentage in USA is 5%, in Italy 26%. International studies have shown reduction by 15-25% in AD when MT is managed at TCr in an organized trauma management system. Hence the interest in the optimization of TDP. In 2017 it was carried out in our ED, seat of Trauma Center, a reengineering of TDP for patients affected by MT.

Purpose: Evaluate the impact of new TDP in terms of diagnostic appropriateness and rapidity, during its first months of application.

Materials and methods: Enrolled patients with MT, in the period January 2018-March '19. Assessed: The time (T) of waiting and process, the correct request for imaging and the T for its execution and reporting; The ISS score of gravity of the PZ; Anatomical lesions locations; The outcome of patients and hospitalization departments; The calculation of Overtriage and undertriage with formula of Cribari

Results: 549 patients (pz) were enrolled, 80% M, average age 43 aa. From a preliminary analysis (shortly we will have full analysis) shows: median wait T of 5 minutes (m) T average of execution of E-FAST from time of Visit 6.8 m. T median of report of TC total Body 50 m. T of permanency in ED : Median 5 h and average of 14. 78% of these pz had written report of E-FAST by PS physician. 76% of pz performed TC total body (trend in net increase compared to previous years), and this was found to be positive for post traumatic lesions in 56% of cases. The average ISS identified is 15.4. Over 40% patients at the end of the course had an estimated ISS > to 14. In almost all patients it was possible to detect lesions at the expense of several body districts and the most frequent traumas were observed at the cranial level (27%), thoracic (22%) and spine (17%). Of the 47 pz with spinal trauma 6 reported spinal lesions with permanent damage, for 5 of these was possible to perform MRI in emergency regimeN, 41% of patients are been discharged directly from the PS, less than 1% mortality. The remaining patients were hospitalized; In particular, 12% in resuscitation, 24% in orthopaedics, 6% in general surgery and 6% in neurosurgery. There is a situation of overtriage that is around 39% of access, around 1% under Triage calculate with method Cribari.

Conclusions: The application of the new protocol has allowed a rapid response in terms of appropriateness in the recognition of the pathology; A correct use of diagnostic resources with an appropriate start to the dedicated pathways, which made possible the effective conclusion of the patient's diagnostic-therapeutic process. Over and under triage are in line with what the American College of Surgeon advocated

#19187 : Morel-Lavallée syndrome in emergency trauma**Authors:**

Camille Choufani (1), Laure Lebon (2), Abdo Khoury (3), Stéphane Foucher (4), Olivier Barbier (1), Hugues Lefort (5)

1. Department of orthopaedic surgical, Begin Military Teaching Hospital, Paris, FRANCE
2. Emergency Medical Service, Fire Brigade of Paris, Paris, FRANCE
3. Department of Emergency Medicine and Critical Care, University of Franche-Comté, Besançon University Hospital, Besançon, FRANCE
4. Department of emergency medicine, Saint-Anne Military Teaching Hospital, Toulon, FRANCE
5. Emergency Medical Department, Legouest military teaching hospital, French military health service, Metz, FRANCE

Keywords: Morel-Lavallée, knee, medical, emergency

Abstract :

Introduction: Morel-Lavallée syndrome (MLS) is a trauma that remains rare: a closed separation between the fascia superficialis and cutaneous-under-cutaneous tissue. This empty space is filled by liquid and can be complicated by an infection and tissue necrosis. Regularly described in heavy trauma, one should be aware of MLS in all patients presenting to the Emergency Department (ED) for minor trauma,

Methods: This is a case report of sub-patellar MLS in a confirmed parachutist. Clinical presentation and management are discussed in a review of the literature (PubMed®) throughout the past ten years. We would like to draw attention of the emergency physicians for this pathology and give them practical tools to properly manage these patients in order to avoid functional and socio-economic complications.

Results: Our patient presented to the ED after having felt a left sub-patellar light pain on landing. Although it was a low velocity landing on a stable ground, he noticed a progressive swelling, followed soon by progressive loss of articular amplitude. Testing at the ED was painful. No clear diagnosis was made in the ED. MRI shows an intra-articular swelling without any tendineo-ligamentous lesions, Conservative treatment was applied with a peripatellar semi rigid cast, followed by physio and cryotherapy. Evolution was favourable.

Discussion: The presence of associated clinical signs (dermabrasions, hypermobility with palpation, superficial hypo-sensibility) and the MRI in immediate post-emergency are the helping elements to the early diagnosis.

For our patient, the evolution was positive with a healing without sequelae by a conservative medical treatment. The initial conservative treatment is simple and adaptable to the daily life limiting the non-favourable outcome of the MLS such as functional, infection or even necrosis complication. The precocity of the diagnosis as much as the early medical treatment limit the invasive procedures as puncture-aspiration, sclerosing products or even surgery. Except the time needed for healing, the lesion size and the therapeutic observance are the two other important prognosis factors. The conservative treatment has no place in the event of infection, of cutaneous necrosis or if surgical lesion.

The take home messages released by the literature experiment on the MLS are : 1) rule out differential diagnoses such as noble periarticular element lesions or tumours, 2) apply early contention, do cryotherapy and rehabilitation.

Conclusion: This literature analysis of this specific case point out the importance of the early diagnosis and management of MLS in the ED. It helps us avoid surgery and functional complications.

#19188 : Performance of the rapid acute physiology scoring (RAPS) in the emergency department: An observational prospective study**Authors:**

Hadil MHADHBI (1), Yosra YAHYA (2), Khédija ZAOUCHE (2), Ramla BACCOUCHE (2), Radhia BOUBAKER (3), Hamida MAGHRAOUI (2), Abdelrahim ACHOURI (3), Kamel MAJED (2)

1. HMPIT, HMPIT, Tunis , TUNISIA
2. les urgences , La Rabta, Tunis, TUNISIA
3. la Rabta emergency departement, la rabta, tunis, TUNISIA

Keywords: mortality ;emergency department; scoring system ;RAPS

Abstract :

Background: The Rapid Acute Physiology Score (RAPS) was developed and tested for use as a severity scale in critical care transports. RAPS is an abbreviated version of the Acute Physiology and Chronic Health Evaluation (APACHE-II) .Although this score is widely accepted, its applicability in patients admitted to the emergency department has not been thoroughly evaluated. The aim of this study was to assess the performance of the RAPS in predicting intrahospital mortality of patients admitted to the emergency department (ED).

Methods: We performed a prospective observational study in medical, surgical and trauma patients admitted to the(ED) over a period of one year. Data related to variables from the RAPS were collected on all consecutive patients admitted at the (ED). The endpoint was intrahospital mortality. Test performance was assessed using the area under the receiver operating characteristic curve.

Results : A total of 600 patients were included, The mean age was 60 ± 17 years.376 of them (60, 7%) were male. The mean RAPS was 7 ± 4 . Overall hospital mortality was 14, 5%. The RAPS was significantly correlated with inpatient mortality ($p=0,000$). The AUROC for application of RAPS to this population was 0,802 (95% confidence intervals [CI] 0,763 to 0,842).

Discussion & Conclusions: Despite the relatively small number of patients and the fact that it was a single center study, RAPS was a reliable and powerful predictor of intrahospital mortality in patients admitted to the ED. In fact same results were found in many studies in the literature. However, for more precise results, there is a need for multicentered Studies with a high number of patients and different patient groups.

#19189 : Diagnosing rare upper limbs tendon ruptures in the emergency room (proximal or distal biceps, distal brachial triceps)**Authors:**

Camille Choufani (1), Laure Lebon (2), Abdo Khoury (3), Stéphane Foucher (4), Olivier Barbier (1), Hugues Lefort (5)

1. Department of orthopaedic surgical, Begin Military Teaching Hospital, Paris, FRANCE
2. Emergency Medical Service, Fire Brigade of Paris, Paris, FRANCE
3. Department of Emergency Medicine and Critical Care, University of Franche-Comté, Besançon University Hospital, Besançon, FRANCE
4. Department of emergency medicine, Saint-Anne Military Teaching Hospital, Toulon, FRANCE
5. Emergency Medical Department, Legouest military teaching hospital, French military health service, Metz, FRANCE

Keywords: upper limbs, tendon, rupture

Abstract :

Introduction: The rupture of the tendons of the upper limb has an increasing incidence because of multiple factors. The two main diagnosis are rupture of the proximal and distal biceps (PDB) and rupture of the distal brachial triceps (DBT). These pathologies are often missed in the early stages, and treatment is not initiated. We aim at pointing out practical and simple key-points in order to achieve early diagnosis in the ED.

Methods: We conducted a literature (PubMed®) search for case reports of rupture of the PDB or DBT. We searched for the anatomical, biomechanical and mechanism of these lesions and the predisposing factors behind that. This will help the clinician choose between a medical and a surgical option in the management of these lesions.

Results: The first case is a patient of 47 years old having a total functional impotence of the left elbow following a fall. The examination reveals a hematoma with deficit of extension. Radiography shows a wrenching of the edge on postero-superior face of the ulna. Rupture of the tricipital tendon by wrenching of its distal insertion was our first diagnosis. It was confirmed while surgery when a reinsertion of the osseous fragment with its tendon portion was performed. The evolution was good after immobilization and progressive rehabilitation.

The second case is a patient of 40 years old presenting difficulties with his arm since 48 hours following an effort of holding heavy loads. The initial abrupt pain disappeared and was replaced by a loss of force of the biceps (retraction of the bicipital muscular mass). We confirmed the diagnosis of proximal rupture of the bicipital tendon by an ultrasound. Reinsertion was done by surgery. The evolution was favourable after immobilization and progressive rehabilitation.

Discussion: The ruptures of the tendons of the PDB and DBT are supported by an sports malpractice, a consumption of supporting products, an because of the increase interest in sports in the general population. The rupture occurs on an eccentric forced movement applied to the muscle in contraction. The most frequent site of rupture is the tendon insertion. In the Emergency Department, the examination is difficult to realize because of pain. A good inspection can be enough to have the diagnosis by revealing the tendon gap or a muscular retraction. X-ray is generally normal. Ultrasound in emergency is enough to do the diagnosis.

The conservative treatment is always possible. The surgery is preferred for the patients with strong functional demand. This diagnosis, which remains rare, is often ignored by the emergency medicine physicians (EP) in a painful patient, whereas any delay of caring deteriorates the quality of functional recovery.

Conclusion: This work brings a better comprehension of these tendon ruptures in the emergency phase. These simple take home messages for the EP make it possible to carry out early diagnostic to improve efficiency of the course of care and functional rehabilitation *ad integrum* while limiting the deadlines and the complications.

#19190 : Nurse management of seizures in adults at Emergency Department : a survey study**Authors:**

Yosra YAHIA (1), Nadia Zaouak (1), Khedija Zaouche (1), Abdelwaheb Mghirbi (1), Teycir Kharraz (1), Asma Ben Hamida (1), Hamida Maghraoui (1), Kamel Majed (1)

1. Emergency department, La Rabta hospital, tunis, TUNISIA

Keywords: Nurse-Management-seizures-adults-Emergency

Abstract :

Introduction: Seizures often lead patients to go to Emergency Department. It can be a life-threatening and functional emergency. The purpose of our study is to assess the degree of nurses' knowledge about seizures at ED.

Methods: We conducted a survey study in March 2019. An anonymous questionnaire was distributed to emergency registered nurses of four teaching hospitals. Data were collected and analysed on SPSS22 software by a descriptive method.

Results: 50 questionnaires were collected. 90% of the respondents were aware of the precautions to be taken in triage for convulsing patients, particularly regarding to the positioning and the Guedel canula set. Epileptic status was well known as a life-threatening complication of convulsive crisis. For conditioning, 92% of nurses considered the establishment of a peripheral venous route and 78% the scopic monitoring. Concerning therapeutic management, 42.5% of nurses hadn't enough knowledge about the use of benzodiazepines in first-line anticonvulsant treatment. 76% had known with precision how to practice a resucrage in case of hypoglycemia.

Discussion and Conclusion: The role of nurses is very important in identifying convulsive crisis, which can occurs while patient arrives to the triage. Nurses ensure the application of first conditioning gestures and the administration of therapeutic treatments. Moreover, the unpredictable evolution of this clinical presentation requires a close monitoring in which the nurse plays an important role. Our study shows that some knowledge gaps remain in seizures' management of adults at ED. Continuing education of emergency nurses is necessary to optimize this care.

#19191 : EVALUATION OF THE COMPLIANCE OF MEDICAL, SURGICAL AND INTENSIVE CARE DEPARTMENTS IN PROVIDING BED CAPACITY IN AN ITALIAN SECOND-LEVEL DEA IN CASE OF EMERGENCY**Authors:**

IRIDEFRANCESCACERESA (1), GABRIELESAVIOLI (1), VALENTINAANGELI (2), VIOLANOVELLI (3), albamuzzi (4), carloarena (4), giuseppina grugnetti (5), MARIA ANTONIETTA BRESSAN (1), PAOLO DIONIGI (6)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. DIREZIONE MEDICA DI PRESIDIO, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
5. sitra, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
6. SURGERY, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: DISASTER MEDICINE, BED CAPACITY, EMERGENCY DEPARTEMENT

Abstract :**Introduction:**

The Bed Surge Capacity is a very important information in the articulation of all phases of the PEIMAF inside the hospital as the pre-hospital organization. This results in the importance of a more precise detection of the evaluation the compliance of the departments is therefore an integral part of the evaluation of PEIMAF.

Purpose: To evaluate the compliance of the various departments to report the bed surge capacity in an Italian DEA of II level. Hospital, surgical and medical departments were involved, through the real time detection of the number of beds available/readily deliverable at the IRCCS Policlinico Foundation "San Matteo" at 2 and 24 h from a hypothetical maxiemergency, Through four total simulations (three for phase 1 and one for Phase 2), both of which consist of two detection times (T2 and T24).

Materials and methods

The estimation of the hospitalization capacity and the surgical capacity of the foundation was assessed on weekdays and holidays, dividing the beds free/readily deliverable

The compliance of the departments in a scale of 1 to 10 has been assessed, considering 4 factors: the availability (voluntary adhesion of the staff), the time of compilation (important since the study aims to evaluate the free and liberable beds Throughout the hospital in the same precise timeframe), the speed of response, the actual delivery of data and their completeness, the presence of any suggestions (expression of active involvement of staff)

Results

The study phase saw the involvement of 105 subjects belonging to the health staff, including 68 doctors and 36 nurses of the eighteen departments belonging to the medical Area (nephrology, rheumatology, cardiology, pneumology, general medicine 1 and 2 and gynecology), of the eight departments belonging to the surgical Area (General surgery 1 and 2, vascular surgery, urology, neurosurgery, pediatric surgery, orthopaedics and otorhinolaryngology), intensive care (resuscitation including the wing of Resuscitation 1 and the ARA Wing – TYPE), of the Subintensive departments (UTIC and Stroke Unit) and a nursing coordinator.

2326 total evaluations were performed in the six survey times, carried out on an average of 388 patients (T2:369, T24:399; II T2 399, T24 387; III T2 413, T24 385)

The compliance with the simulation obtained an average of 7.5 out of ten:

Conclusions:

The compliance of the departments in the estimate of the bed surge capacity was satisfactory. This is probably due to a long and articulated process of formation that took place in our foundation. The analysis of response times allowed to see how the compliancy increased with the recurrence of the surveys. These data therefore suggest how the periodic detection of the bed surge capacity could be a tool not only of evaluating the efficacy of PEIMAF but also a valid tool of exercise to make the health staff faster and effective in decisions to be taken during an emergency.

#19192 : COST ANALYSIS BY GCS SCORE OF THE PATIENTS IN EMERGENCY INTENSIVE CARE UNIT

Authors:

dilek atik (1), CESAREDDİN DİKMETAŞ (1), ramazan güven (1), başar cander (1)

1. emergency department, kanuni sultan suleyman research and training hospital, istanbul, TURKEY

Keywords: COST ANALYSIS, GCS, EMERGENCY INTENSIVE CARE UNIT

Abstract :

OBJECTIVE: Critically ill patients are those who are dependent on advanced monitoring instruments and therapy for survival because of dysfunction or failure of 1 or more organs/ systems. The care of critically ill patients relies upon the use of skilled personnel and sophisticated equipment with the expenditure of large amounts of time and money. The intensive health service provided in intensive care units affects the healing process of patients. The treatments and invasive procedures applied in intensive care increase the life expectancy of patients, but also involve high costs. This study aims to investigate the effects of clinical processes, examinations and treatments on cost in inpatients in emergency intensive care units. **Methods:** A total of 108 patients with complete records were included in the study. This study was carried out retrospectively with the demographic examination of the intensive care patients hospitalized. The data obtained by the study carried out within the scope of clinical research are statistically nonparametric. For this reason, Kruskal-Wallis H tests were used in the statistical evaluation according to the related categorical (nominal or ordinal) and independent numerical groups, as the case may be. **Findings:** The average length of stay in the intensive care unit was 5.2 day (min, max) (1.50). As the day of hospitalization increased, the cost of patients increased (p: 0.00). The average cost of intensive care patients was 3947TL (min=252.9TL, max=35879TL). The average medicine cost was 820.2TL (min=0 TL, max=9077.68 TL). The average operation cost of the patients was 3126.2 TL (min=223.71 TL, max = 28732.13 TL). The clinical results and the effect on cost were found to be statistically significant (χ^2 :16.263 and p=0.001). The effect of MV usage on cost was found to be statistically significant (χ^2 :12.515 and p=0.002). **Discussion:** ICUs are expensive because they require high technology and highly qualified staff. In our study, the average cost was 3947 TL, the average transaction cost was 3126.2 TL and the average cost of medicine was 820.2 TL . In a cost study conducted in seven ICUs from different European countries, it was reported that direct costs in ICUs per day differed between 1.168 € and 2.025 € and that staff costs were the most important item. According to our study, our intensive care costs were lower compared to intensive care costs of European countries; but the cost of treatment was higher than cost of medicines and consumables according to the other studies. Invasive procedures applied to patients, length of stay in intensive care unit and final results increase the cost. **Result:** In intensive care units, the duration of stay and invasive procedures cause high costs. . According to the results of our study, it was thought that the Glasgow Coma Scale could be helpful in referring patients to the right intensive care unit in the grade system and could benefit the country and health economics regarding the costs of patients.

#19194 : Quick sepsis-related organ failure assessment (qSOFA) vs CURB-65 in predicting outcomes of pneumonia**Authors:**

Sana Tabib (1), Ines Chermiti (1), Manel Kallel (1), Soumaya Mahdhaoui (1), Saoussen Chiboub (1), Ahlem Azouzi (1), Sami Souissi (1), Hanène Ghazali (1)

1. Emergency department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA

Keywords: pneumonia, scores, outcomes

Abstract :

Introduction: Pneumonia as an acute infection of the pulmonary parenchyma presented clinically with different degrees of severities. Despite all the medical advances and majors antibiotics, complications and mortality remains high. Early evaluation of the risk of sepsis/septic shock and respiratory distress is the key to reduce it.

The aim of our study was to compare qSofa as a simplified score to detect sepsis vs CURB65 witch is a more specific score for pneumonia.

Methods: This is a prospective observational study conducted in emergency department (ED) during two years. Inclusion of adult patients admitted to ED with community acquired pneumonia (CAP). In addition to demographic, clinical and paraclinical characteristics, qSOFA and CURB-65 scores were assessed and compared in terms of assessment of initial severity (need for fluid expansion, use of vasoactive drugs, dual antibiotic therapy) and outcomes (mortality at one month and Intensive care Unit (ICU) admission.)

Results: Inclusion of 284 patients. Mean age: 68 ± 17 . Sex-Ratio: 1.23. Comorbidities n(%): diabetes 86(39), hypertension 126(46), structural heart disease 36(13), chronic obstructive pulmonary disease 51(19), active smoking 45(17) and past history of pneumonia 12(4). Clinical features mean \pm SD: respiratory rate 23 ± 5 , heart rate 98 ± 20 , systolic blood pressure 129 ± 43 and oxygen saturation at room air 92 ± 9 . Five patients had altered mental status. Oxygen support n(%): nasal cannula 19(24), simple facial mask 36(46), reservoir mask 21(27), non-invasive ventilation 2(1). Treatment n(%): fluid expansion reported 67(25), vasoactive drugs in 5(2), dual antibiotic therapy 45(18). Nine patients (7.5%) were admitted to ICU. Mortality rate at one month was 4.5%. qSOFA distribution n(%): class 0 114 (41), class 1 142(51) and positive 21 (8). CURB65 was positive in 117 (53.2%). Comparative analysis (CURB65 AUC; p vs qSOFA AUC; p): use of vasoactives drugs (0.863; 0.006 vs 0.532; 0.809), need for fluid expansion (0.602; 0.019 vs 0.574; 0.091), dual antibiotic therapy (0.612; 0.032 vs 0.603; 0.048), ICU admission (0.673; NS vs 0.382; NS) and mortality at one month (0.705; 0.061 vs 0.523; 0.832).

Conclusions: Comparing qSOFA and CURB65 showed the superiority of CURB65 regarding predicting severity and outcomes.

#19195 : IMPACT OF THE AGED POPULATION HOSPITALIZED ON PLANNING AND IMPLEMENTATION OF PEIMAF. EXPERIENCE OF AN ITALIAN LEVEL II DEA.**Authors:**

IRIDEFRANCESCACERESA (1), GABRIELESAVIOLI (1), VALENTINAANGELI (2), VIOLANOVELLI (3), albamuzzi (4), carloarena (4), giuseppina grugnetti (5), PAOLO DIONIGI (6), GIOVANNI RICEVUTI (1), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. DIREZIONE MEDICA DI PRESIDIO, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
5. sitra, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
6. SURGERY, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: DISASTER MEDICINE, BED CAPACITY, EMERGENCY DEPARTEMENT, OLD PEOPLE

Abstract :

Introduction: One of the information that is asked immediately following a maxi-emergency or a catastrophe is the capacity of reception of wounded who at that time the hospital presents, later fundamental information in the articulation of the PEIMAF is to identify the capacity of beds available (bed surge capacity) that can put in place during the Maxiemergency. The beds are not able to be freed for reasons of the patient's safety, but also for reasons of high need of assistance or the presence of certain fragile categories, especially the elderly. In Italy This populazioen is very represented by having our country an old-age index of 169 seniors for 100 young people.

Purpose and methods: to assess the fragile population impact and in particular of the elderly, on the bed surge capacity in eighteen hospital departments through the real-time detection of the number of beds available/readily deliverable at the foundation IRCCS Policlinico "San Matteo" at 2 and 24 h from a hypothetical maxiemergency, through four total simulations (three with regard to phase 1 and one for phase 2) both consist of two detection times (T2 and T24), in weekdays. The estimation of the capacity of hospitalization was assessed by dividing the beds free/readily deliverable by typology (medicines, surgeries, intensive care and subintensives).

Results: 2326 total evaluations were performed in the six survey times, carried out on an average of 388 patients (T2:369, T24:399; II T2 399, T24 387; III T2 413, T24 385), of which about 52% with an age exceeding 70 years.

It has been obtained that among the parameters that most influence the possibility to resign/transfer patients are: the diagnosis of admission, the intensity of care and the age of the patients hospitalized

In fact, beds occupied by patients under the age of 70 years were found to be deliverable in Phase 1 surveys on average in 32.5% of cases (categories C, D, E, F) and in 23% of cases if they had more than 70 years (in 9% average of cases the data was not available).

This is a fact that finds an explanation in the physiopathology of the elder compared to the young person, as considered a complex patient 13, characterized by relevant multimorbidity, disability, instability of the State of health and social factors, which determine Invariably a multidimensional assessment of the patient is in the diagnostic phase and, more so, in the therapeutic phase: all these factors making the elder a fragile and needy subject of careful health evaluation.

Conclusions: The data underlines the importance of the vulnerability analysis of fragile patients, such as the elderly and multipathologic in all organizational hubs of PAIMAF.

#19196 : Different approaches in pain management of acute low back pain in Emergency Department

Authors:

Cosmin Trebuian (1), Dumitru Şutoi (2), Cosmin Librimir (2), Ovidiu Alexandru Mederle (3)

1. Emergency Department, University of Medicine and Pharmacy "Victor Babeş" from Timișoara, Timisoara, ROMANIA

2. Emergency Department, University of Medicine and Pharmacy "Victor Babeş" from Timișoara, Timisoara, ROMANIA

3. Emergency Department, University of Medicine and Pharmacy "Victor Babeş" from Timișoara, Timisoars, ROMANIA

Keywords: low-back pain, pain management, emergency department, ED length of stay

Abstract :

Background

Low back pain (LBP) is a very common condition that about 80% of adults in developed nations are believed to experience at least once in life. Some cases of acute low back pain seen in Emergency Department are caused by internal organs or systemic illness, but over 80% of the cases are idiopathic low back pain due to unidentifiable cause in musculoskeletal connective tissues in the back. In the presence of "red flags", further tests must be done to rule out underlying problems; however, biomedical imaging is currently overused. LBP involves large in-hospital and out-of-hospital economic costs, and it is also the most common musculoskeletal disorder seen in emergency departments (EDs).

Patients and methods

This observational study is proposing to be enrolled patients that step into EDs of two hospitals, during 1-year period with lumbosciatic, radicular or nonspecific sciatic pain. First line treatment used consists in: Acetaminophen(1g) +Diclofenac(75mg) + Tramadol(100mg) + Nefopam(20mg), ends by a meds prescription (NSAIDs, muscle relaxants, weak opioid/acetaminophen combination and pregabalin), all for 7-10 days at discharge from ED. 2nd line treatment, designed for patients that didn't benefit from the 1st line, consists from a Lidocaine 1%(3mg/kg) + Ketamine(0.25mg/kg) mixed infusion over two hours. 3rd line consists in steroid injection given by interventional pain team (caudal-epidural or transforaminal). We collected patient's demographic data, medical history, drugs administered in the ED, ED length of stay (LOS), numeric rating scale pain score at admission/discharge from ED, patient satisfaction and pain physician intervention.

Results

Mean numeric rating pain scale scores were higher than 8/10at the time presenting in ED, decreasing down to 2-3/10 on discharge. Once in the ED, all the patients included in the study benefited from all pain relief (exception drug allergy), respectively all of them had the same meds prescription at discharge. Imaging was performed in up to 56% of patients. Mean ED LOS was 2 hours, 32 minutes. A total of 3 patients were admitted to a ward. Less than 10% of patients required an infusion; only 1 patient went straight for steroid injection under pain team.

Conclusion

There is not yet a defined therapeutic care process for the patient with LBP with clear criteria for an ED visit. Most of the time, different approaches in multimodal pain management may be useful, in complicated chronic sciatic pain the role of pain interventionist is clear.

#19197 : THE SIMULATION ALLOWS REDUCTION IN TIME AND GREATER EFFECTIVENESS IN PROVIDING THE BED SURGE CAPACITY. EXPERIENCE OF AN ITALIAN DEA OF II LEVEL.

Authors:

IRIDEFRANCESCACERESA (1), GABRIELESAVIOLI (1), VALENTINAANGELI (2), VIOLANOVELLI (3), albamuzzi (4), carloarena (4), giuseppina grugnetti (5), PAOLO DIONIGI (6), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. DIREZIONE MEDICA DI PRESIDIO, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
5. sitra, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
6. SURGERY, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: DISASTER MEDICINE, BED CAPACITY, EMERGENCY DEPARTEMENT, SIMULATION

Abstract :

Introduction and purpose: evaluating the role of simulation in the assesment of the time required to provide the bed surge capacity in eighteen hospital departments and surgical availability, by detecting in real time the number of beds available/readily deliverable at 2 and 24 h from a hypothetical maxiemergency, through four total simulations (three with regard to phase 1 conducted in the morning time and one for the Phase 2 conducted in late Bank holidays Matina) both Consisting of two detection times (T2 and T24).

Materials and methods: The estimation of the hospitalization capacity and the surgical capacity of the foundation has been assessed on weekdays and holidays, dividing the beds free/readily deliverable by typology (medicines, surgeries, intensive care and subintensives) and Availability of operating theatres.

The creation of new beds was presumed by the possibility of displacement of patients in a lower level of care than that provided at the time of detection, dislocation of patients in a discharge room with assistance of type Nursing, transfer to hospitals with less intensity and rehabilitation facilities or discharge at home.

Results: The study saw the involvement of 105 subjects belonging to the health staff, including 68 doctors and 36 nurses of the eighteen departments belonging to the medical Area (nephrology, rheumatology, cardiology, pneumology, general medicine 1 and 2 and Gynaecology), of the eight departments belonging to the surgical Area (General surgery 1 and 2, vascular surgery, urology, neurosurgery, pediatric surgery, orthopaedics and otorhinolaryngology), intensive care (resuscitation including the wing of Resuscitation 1 and the ARA Wing – TYPE), of the Subintensive departments (UTIC and Stroke Unit) and a nursing coordinator of the three surgical department.

2326 total evaluations were performed in the six survey times, carried out on an average of 388 patients (T2:369, T24:399; II T2 399, T24 387; III T2 413, T24 385).

The measurements of phase 1 to T2 lasted about 3 h 15 min, those at 24 h lasted about 2 h 30 min, in Phase 2 a fast response time was observed: 45% of the departments within the first 40 min.

Conclusions: As regards the times within which the surveys were carried out, they were almost stable in the six surveys of phase 1, with a difference of about 40 min at the expense of the first day compared to the second one, probably attributable To the greater knowledge of the way the project is carried out by the staff involved as already sensitized the previous day. Explanation that finds evidence in the time detected in the operative phase, in which, although the duration of the test was lower, in the first 40 min of the two hours of the survey, 45% of the departments covered by the study communicated the requested data.

The repetition of the simulations and the practical exercise carried out after a period of theoretical training, are therefore a valid tool to make the health staff faster and more effective in the decisions to be taken during a simulation of Maxiemergency

#19198 : CAN THE FOOT PAIN BE THE VARICELLA ZOSTER (SHINGLES)?

Authors:

dilek atik (1), bahadır taşlıdere (2), bensu bulut (1), serkan doğan (1), ramazan güven (1), başar cander (1)

1. emergency department, kanuni sultan suleyman research and training hospital, istanbul, TURKEY

2. emergency department, bezmialan university, istanbul, TURKEY

Keywords: FOOT PAIN, SHINGLES, VARICELLA ZOSTER

Abstract :

Shingles is one of the two different clinical presentations of infection of VZV which is a DNA virus. Humans are a known reservoir for the Varicella zoster virus (VZV). It is very contagious. The virus that remains latent after infection in childhood and can be reactive due to various reasons (immune system suppression, old age, stress factors, etc.). It involves various dermatomes after reactivation. Varicella-zoster appears mostly on thoracic, cervical, and ophthalmic dermatomes. Rarely, it is located in the upper and lower extremity dermatomes. In this study; 7 patients with shingles on the foot and sole were examined. It was aimed to emphasize that varicella zoster (zona) may be the cause of foot pain in patients presenting to the emergency department with complaints such as pain, burning and inability to step on standing, and to review the age, gender, underlying factors of the zona cases which are not previously mentioned in the literature.

#19199 : Epidemiology and clinical characteristics of pre-hospital Acute Intoxication**Authors:**

Meriem Ben abdellaziz (1), Dorra Loghmari (2), sondos Laajimi (1), yassine jridi (1), Ahmed Guesmi (3), Rabeb Mbarek (4), Mounir Naija (1), Naoufel Chebili (1)

1. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 CHU sahloul sousse, CHU sahloul sousse, SOUSSE, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA

Keywords: Acute Intoxication,pre-hospital,Epidemiology

Abstract :**Epidemiology and clinical characteristics of pre-hospital Acute Intoxication**

M Ben Abdellaziz,S Laajimi,Y Jridi,A Guesmi,R Mbarek, D Loghmari,M Naija,N Chebili

BACKGROUND: Acute Intoxication (AI) is a frequent reason for calling the medical control center. The rapidity of a pre-hospital intervention has proven a prognostic impact.

The aim of our study was to determine the epidemiological and clinical characteristics of AI that were managed in pre-hospital interventions and to deduce the prognostic factors.

METHODS: This study was retrospective descriptive enrolled in an Emergency Medical Assistance Service (EMAS) with data collected from the electronic register. All AI for which the EMAS had made the decision to hire a mobile emergency care unit (MECU) was included. The study was conducted over a period of 2-years 5-months between January 1st 2016 to May 06th 2018.

RESULTS: Of 520 calls, there were 465 interventions; the total number of patients included in the study was 438 patients. The average age of our patients was $28,5 \pm 16,6$ years old. The female predominance was noted with sex ratio at 0.8. 67.1% of cases were single, the psychiatric history of these patients was found in only 11.4% of cases. AI was intentional for suicidal purposes in the majority of cases (73.1% of cases). The most incriminated toxics products were pesticides (organochlorines, organophosphates and carbamates) (27.85%) followed by inhaled gases (carbon monoxide and butane gas) in 22.6% of cases.

Neurological signs dominated the clinical picture and were observed in 130 patient (30%), followed by digestive signs. A specific toxidrome was noted by the intervention physician in only 10.3% of cases. In our serie, no patients were in hemodynamic distress when the MECU team arrived, 14% of patients had arterial oxygen saturation strictly below 95%. 218 patients (49.8%) had an altered state of consciousness (Glasgow score less than or equal to 14/15). In our study, the use of respiratory assistance was necessary in 150 patients (34.25%). for this last patients, the responsible agent was mainly pesticides in 79 patients (52.7%).For 27%of intubated patients, the toxic agent could not be identified. The antidote was administered in only 10 intoxicated patients (2.3% of cases).

CONCLUSION: Acute intoxications are a real public health problem in terms of their frequency and the cost they engender. The majority of AI are voluntary touching young people and the single female sex is the most affected. Would systematic psychotherapeutic management of this category be a solution for subsequent prevention?

Trial Registration / Funding Information (only) :

no funding

#19200 : Sepsis after Sepsis-3: A prospective study of the incidence and the prognostic accuracy of the diagnostic tools for early detection of sepsis.

Authors:

S M Osama Bin Abdullah (1), Rune Husås Sørensen (1), Ram Benny Christian Dessau (2), Saifullah Muhammed Rafid Us Sattar (3), Lothar Wiese (4), Finn Erland Nielsen (5)

1. Department of Emergency Medicine,, Slagelse Hospital, Slagelse, DENMARK
2. Institute of Regional Health Research,, University of Southern Denmark and Department of Clinical Microbiology, Slagelse Hospital, Slagelse, DENMARK
3. College of Medicine,, China Three Gorges University, Yichang, Hubei, CHINA
4. Department of Infectious Diseases,, Roskilde Hospital, Roskilde, DENMARK
5. Department of Emergency Medicine,, Bispebjerg and Frederiksberg Hospital, Copenhagen, DENMARK

Keywords: Emergency department; sepsis; qSOFA; SOFA; SIRS; incidence; mortality; infection

Abstract :**Background**

Prospective studies of the incidence of sepsis and the prognostic accuracy of the different sepsis screening tools after the introduction of Sepsis-3 are limited. Definition of sepsis is now based on organ dysfunction characterized by a rise in the Sequential Organ Failure Assessment (SOFA) score of two or more. The new definition also proposed QuickSOFA (qSOFA) as a bedside screening tool to identify patient with potential risk of having sepsis. We have estimated the incidence based on qSOFA, SOFA and Systemic Inflammatory Response Syndrome (SIRS), and compared the prognostic accuracy in predicting the 28-day mortality.

Methods

A prospective observational cohort study of infected patients aged 18 years or older admitted to the emergency department (ED) of Slagelse Hospital during 01.10.2017 – 31.03.2018. The adult (≥ 18 years) population in the area was 198,000. All patients with suspected or documented infection on arrival to the ED, and treated with antibiotics, were included. Admission variables included in the qSOFA, SOFA and SIRS criteria were obtained from the triage forms and patient records. The applied SOFA values were calculated based on the clinical and paraclinical parameters at admission and with correction for chronic dysfunction of organs included in the SOFA score. Survival status was obtained from the Danish Civil Registration System. Incidence was estimated as (number of patients with sepsis/population in the area $\times 0.5$) $\times 100,000$. The prognostic accuracy was assessed by analyses of sensitivity, specificity and area under the receiver-operating curve (AUROC) with 95% confidence intervals (CI).

Results

A total of 2,112 patients with median age of 73.1 years were included. The incidence of sepsis based on a qSOFA ≥ 2 , a SOFA ≥ 2 and SIRS ≥ 2 was 175/100,000 (95% CI 150-203/100,000), 714/100,000 (95% CI 663-768/100,000) and 1,012/100,000 (95% CI 951-1076/100,000), respectively. The 28-day mortality in patients with qSOFA ≥ 2 , SOFA ≥ 2 and SIRS ≥ 2 was 17.7% (95% CI 12.4-24.2), 13.6% (95% CI 11.2-16.3) and 8.3% (95% CI 6.7-10.2), respectively. qSOFA ≥ 2 had a sensitivity of 19.5% (95% CI 13.6-26.5) and a specificity of 92.6% (95% CI 91.4-93.7), SOFA ≥ 2 had a sensitivity of 61.0% (95% CI 53.0-68.6) and specificity of 68.4 (95% CI 66.3-70.59), and SIRS ≥ 2 had a sensitivity of 52.8% (95% CI 44.8-60.8) and a specificity of 52.5% (95% CI 50.2-54.7). The AUROC was 0.63 (95% CI 0.59-0.67) for qSOFA, 0.69 (95% CI 0.64-0.73) for SOFA and 0.52 (95% CI 0.48-0.57) for SIRS.

Discussion and conclusion

The sepsis-3 criteria have reduced the number of patients classified as having sepsis and the prognostic accuracy to predict 28-day mortality has been increased. However, the prognostic accuracy to predict patients with risk of death is still poor, regardless of the scoring system used.

Trial Registration / Funding Information (only) :

The study received financial support from Region Zealand Health Research Foundation (RSSF), Denmark and “Naestved, Slagelse and Ringsted Hospitals” Research Fund, Denmark.

#19201 : THE SYNCHRONY AND SYNERGY BETWEEN PHYSICIAN AND NURSE IMPROVES THE EVALUATION OF THE BED SURGE CAPACITY. EXPERIENCE OF AN ITALIAN DEA-TRAUMA CENTER**Authors:**

IRIDE FRANCESCA CERESA (1), GABRIELE SAVIOLI (1), VALENTINA ANGELI (2), VIOLA NOVELLI (3), alba muzzi (4), carlo marena (4), PAOLO DIONIGI (5), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. DIREZIONE MEDICA DI PRESIDIO, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
5. SURGERY, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: DISASTER MEDICINE, BED CAPACITY, EMERGENCY DEPARTEMENT, SIMULATION

Abstract :

Introduction: The Bed Surge Capacity is a very important information in the articulation of all phases of the PEIMAF inside the hospital as the pre-hospital organization. It derives the importance of a more precise and timely detection.

Purpose: To evaluate the accuracy of the bed surge capacity in eighteen hospital departments and the surgical availability of the three DEA, through the real-time detection of the number of beds available/readily deliverable at 2 and 24 h from a hypothetical maxiemergency, through four total simulations (three with regard to phase 1 and one for phase 2) both consist of two detection times (T2 and T24). In particular, we analyzed the accuracy of information when obtained from physicians, nurses individually or from integrated surveys.

Materials and methods: The estimation of hospitalization and surgical capacity of the foundation has been assessed on weekdays and holidays, dividing the beds free/readily deliverable by typology (medicines, surgeries, intensive care and subintensives) and Availability of operating theatres.

The creation of new beds was presumed by the possibility of displacement of patients in a lower level of care than that provided at the time of detection, dislocation of patients in a discharge room with assistance of type Nursing, transfer to hospitals with less intensity and rehabilitation facilities or discharge at home.

Results: While in the operative phase of Phase 1 only the nursing coordinators were involved, in the study phase were enrolled both doctors and nurses, with a greater involvement of the second in the first surveys, 11 Nurses in the first day of the I simulation, to then decrease numerically up to a single IC involved in the last two surveys, as it indicates the development of more attention by the medical staff to the simulation.

It has been noted an increase in the total percentage of patients who could be discharged in case of emergency, passing from 22% T2 of the I simulation to 29% of T24 of the simulation II. The increase of patients in this category in the course of the study is reflected in the fact that in the I and III evaluation, in which an equal number of physicians and nurses have been involved in T2 and T24, there is no significant variation in the percentage between the two Detection times, but they are relevant if the average of the I and III simulation is taken into account (22% versus 27%) With evidence of a 5% increase in the category..

Conclusions: From this preliminary data it can be said that to have a complete indication of the possibility of transfer of the patient, it is necessary to take into consideration both the criteria of medical and nursing, for which the choice must be made in team Medical/Nursing.

The first are more focused on severity pathology, progress of the diagnostic-therapeutic pathway, hemodynamic stability of the patient, the second focalise patient care needs (autonomy, presence of invasive devices, catheters, Principals of O2 Administration). Analytical comparison studies are required for

the confirmation of the data.

#19202 : Low-dose Ketamine in pre-hospital setting for analgesia by non-physician staffed ambulance – first experience from Prague

Authors:

Ondrej FRANEK (1)

1. EMS, EMS Prague, Praha, CZECH REPUBLIC

Keywords: Ketamine analgesia pre-hospital paramedic

Abstract :

Background

The relief of pain is an essential component of prehospital care. For severe pain treatment, opioids are considered to be a “gold standard”; however, there is a lot of both formal and safety limitation of opioid use for a non-physician (“paramedic”) staffed ambulance crew. That is why Ketamine was introduced to pre-hospital environment in Prague since January 2019 for severe pain cases (Pain Severity Score 6-10).

Prague EMS is a typical municipal system serving population of approx. 1,5 millions of inhabitants and visitors of Prague. Ketamine was in this study used for adults patients with non-critical trauma or back pain only. Midazolam 5 mg i.v. was used for pre-sedation minimize dissociative side-effects. Initial dose of Ketamine is varying from 10 to 20 mg i.v. depending on patient’s body weight, with possibility of administering the second dose in case when the effect of the first dose is insufficient within 10 minutes. Each administration including the dose determination must be approved by “on-call” physician, patients with common contraindications are excluded.

Method

This is a small case-series study focused to confirm safety and general feasibility of Ketamine use in pre-hospital setting.

Results

During 4 months Ketamine was used by paramedics in 27 cases in average dose of 22 mg. In 4 cases (15%) it was necessary to administer the second dose to reach a sufficient analgesia. There were no serious side-effects reported. In all cases a sufficient effect was achieved after first or second dose with average decrease in Pain Severity Score by 3,9 points.

Conclusion

Our first experience confirmed that low-dose Ketamine in pre-hospital setting is a useful and safe option to treat severe pain by non-physician staffed ambulance crew.

#19203 : Preliminary Study on the Application Value of Capillary Refill Time Measuring Instrument in Severe Patients

Authors:

Zhong Wang (1)

1. Doctor, Tsinghua university, Beijing, CHINA

Keywords: Hemodynamics; Peripheral circulation; CRT; Shock

Abstract :

Objective To explore the application value of capillary refill time measuring instrument in critical patients. **Methods** A prospective cohort study was conducted to enroll severe patients in the Department of Critical Care Medicine, Tsinghua Changgeng Hospital, Beijing, from January 2019 to February 2019. The patients were divided into shock group and non-shock group according to whether they had shock or not. CRT_{auto}, b and k parameters were measured by capillary refill time measuring instrument, and capillary refill time was also measured by clinicians. CRT, temperature difference between forearm and fingertip, mottling score, peripheral perfusion index, lactate, MAP, CVP, ScvO₂, CI, SOFA score, APACHE II score, 28-day survival, ICU hospitalization time were recorded. The database was established for statistical analysis. **Results** A total of 134 severe patients were included in this study for statistical analysis. There were 35 shock patients and 99 non-shock patients. 79% of patients over 65 years old are difficult to use naked eye to measure CRT because of too thick nail bed and jaundice. For patients who can measure CRT by naked eye, the correlation between CRT measured by naked eye and CRT_{auto} measured by machine is good, the Pearson correlation coefficient is 0.866. CRT_{auto} was prolonged in elderly patients and diabetic patients in non-shock group ($P < 0.05$). The diagnostic value of CRT_{auto} for shock patients is similar to that of blood lactic acid (the area under ROC curve is 0.905 VS 0.87). CRT_{auto} has a cutoff value of 3438ms with the largest Yoden index, which's the sensitivity and specificity for shock diagnosis are 80% and 85.7%. The sensitivity and specificity of b and k values for shock diagnosis are not good. CRT_{auto} had good correlation with APACHE II score and SOFA score of severe patients, Pearson coefficient was 0.691 and 0.643 respectively ($P < 0.05$). **Conclusion** CRT_{auto} is reliable and practical measuring by capillary refill time measuring instrument. CRT_{auto} has a good diagnostic value for shock patients, and is related to the severity of severe patients, with a good application value. The measurement and clinical use of b and k parameters need further equipment improvement and clinical research.

#19204 : TOC TOC: WHO IS IT? THE PATIENT WITH A HYPERACUTE STROKE KNOCKS ON THE ED DOOR. ALIAS THE CHARACTERISATION OF THE POPULATION WITH ACUTE STROKE IN REAL LIFE

Authors:

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), ROBERTA GUARNONE (2), ELISA CANDELORO (2), ANNA CAVALLIN (2), ALESSANDRA PERSICO (2), alba muzzi (3), FEDERICA MANZONI (4), ALESSANDRA MARTIGNONI (2), ELENA NOVARA (2), GIULIANO UBERTI (2), FRANCESCA GRULLI (5), carlo marena (3), STEFANO PERLINI (6), giuseppina grugnetti (7), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
4. Clinical Epidemiology and Biometry Unit, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. emergency department, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. , POLICLINICO , pavia, ITALY
7. sitra, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY

Keywords: stroke triage emergency departement cardiovascular risk factor

Abstract :

FOREWORD and PURPOSE: to characterize the patient with a hyperacute stroke cerebri in the first aid. Provide a detailed photograph of the patient who presents himself in the emergency room for acute stroke in a HUB center for the stroke in Italy.

RESULTS: The patients who received a stroke diagnosis were analyzed in the first year (from May 2017 to May 2018) for the re-engineering of the TDP, for a total of 759 patients. These had an average age of 74 AA with a median of 77 AA with the following distribution for Quartiles: the 66 years; II = 77 years; III = 85 years; IV = 97 years. 70% of patients are accompanied by 118 and only 15% arrive with spontaneous presentation, a picture specularly opposed to general accesses. 85% of the patients are given a high priority code to visit with a yellow or red color code. It is a population with high complexity as demonstrated by the high prevalence of risk factors and other concomitant pathologies, the high percentage of hospitalization, the complexity of home therapy and the high percentage of high codes of gravity at discharge. First we take into account the risk factors such as diabetes mellitus, age > 65 AA, arterial hypertension, cigarette smoking habit, previous ictal pathology, ischemic heart disease, atheromasia and atrial fibrillation. It is seen that 60% of the study population presented at least two risk factors, and 30% 3 or more. More than 90% needed hospitalization. 76% was hospitalized with our DEA and 15% transferred to a low-intensity neurological Institute. 76% of patients had high code of gravity at the end of the process (yellow 72%, Red 4%). 110 patients were candidates for thrombolysis, systemic or mechanical or both. Only 8% of patients had a wetsuit history. Only 9% did not take drugs at home. The most represented drugs were antipertensives, antiaggregants, anticoagulants, hypolipemizers, beta blockers, oral antidiabetics, IPP, antidepressants. . 35% was already anti-aggregating TRP and 12% was already anticoagulant.

Analysing the vital parameters we find that they present average systolic blood pressure values of 151 mmHg, with the following quartile distribution: 135 mmHg; II = 150 mmHg; III = 165 mmHg; IV = 240 mmHg; mean diastolic blood pressure values of 83 mmHg, with the following distribution for quartiles: 73 mmHg; II = 80 mmHg; III = 90 mmHg; IV = 138 mmHg; Saturation values to the average pulse oximeter of 97%; Average heart rate values of 79. The body temperature and respiratory rate are measured in a very discontinuous way. With regard to the clinical presentation, 56% presents motor disturbances, 21% sensory disturbances, 44% speech disorders and 36% atypical disorders.

Conclusions: The patient who presents in ED for acute stroke in a HUB center for the stroke is often an elderly, polypathological, high-risk cardiovascular. Presents pharmacological home therapy politics. It is often already antiaggregated or anticoagulated. It has high admission rates and high gravity color code.

#19205 : ACUTE STROKE AND THE DEATHLY HALLOWS: RISK FACTORS IN A LARGE COHORT OF PATIENTS UNDERGOING THROMBOLYSIS.**Authors:**

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), ROBERTA GUARNONE (2), ELENA NOVARA (2), FRANCESCA GRULLI (3), GIULIANO UBERTI (2), ALESSANDRA PERSICO (2), ELISA CANDELORO (2), ANNA CAVALLIN (2), ELVIS LAFE (4), FEDERICO ZAPPOLI THYRION (2), STEFANO PERLINI (5), alba muzzi (6), carlo marena (6), ALESSANDRA MARTIGNONI (2), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. emergency department, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. NEURO RADIOLOGIC, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. , POLICLINICO , pavia, ITALY
6. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY

Abstract :

RATIONAL and OBJECTIVE: to analyse the distribution of risk factors (FR) in patients suffering from acute stroke and subjected to thrombolysis to our AND for a consecutive year. We analyzed the differences from the group of patients not subjected to thrombolysis. Finally, we analyzed the different distribution, between the PZ eligible to thrombolysis, the RF and according to the presentation symptomatological picture

RESULTS: 759 patients were enrolled. Of these 105 are eligible for thrombolysis. These had an average age of 71 AA with equal gender distribution (53 M, 52 F). There is a high incidence of FR: 94% had at least one FR, 63% at least two FR, and 30% 3 or more. The most represented FR. Arterial hypertension (66%). It follows Carotid Atheromasia (30%) of patients. The other RF (habit of cigarette smoke, previous ictal pathology, ischemic heart disease, atrial fibrillation and diabetes mellitus) showed a prevalence of each of 20%.

However, the population not candidate for Thrombolysis has slightly lower RF: 84% at least one risk factor, 57% at least two risk factors, and 29% 3 or more. The RF most represented arterial hypertension (63%). Atheromasia (30%), previous ictal pathology (25%), ischemic heart disease 19%, atrial fibrillation 19% and diabetes mellitus 20%; While the habit of smoking cigarette only 12%.

We have therefore divided the population of patients subjected to thrombolysis into clinical syndromes: Patients with motor, sensory, language and nonspecific symptoms. 85% presented with motor symptoms, 30% sensory symptoms, 61% speech disorder, 28% atypical symptoms. The 4 symptomatological groups were found to be overlapping by age, distribution of sex, and outcome of hospitalization. The 4 symptomatological groups have been shown to be essentially overlapping by number and distribution of RF with regard to arterial hypertension 63-70%; Atheromasia over-nettic trunks in 29-34% and diabetes mellitus 18-24%. Cigarette smoke has lower prevalence in the subgroup of patients with nonspecific symptoms (10%) Compared to the other subgroups (18-25%); While previous ictal pathology is less represented in patients with nonspecific symptoms (12%) Compared to the other sub-groups (19-20%), atrial fibrillation and in a lesser way also past ischemic heart disease are less represented in the subgroups with sensory and atypical symptoms, representing respectively 9% (sensory symptoms) and 13% (atypical symptoms) the first (FA) and 15% (sensory symptoms) and 14% (atypical symptoms) the second (CAD), compared with 20% the first and 19-24% the second in the other subgroups.

Conclusions: It is clear that RF is most represented in the population of patients with hyperacute onset strokes and therefore eligible for thrombolysis. Among these, it would seem to have a specific role in the habit of cigarette smoke, which is seen more and statistically significantly more involved in hyperacute onset compared to patients not eligible for thrombolysis. And this is all the more true for classical symptomatologists (motors, psychics and language disorders), compared to atypical and blurred frameworks. Much attention must be paid since triage to the presence of RF

#19206 : Children with fever at the paediatric emergency department: are they presenting earlier?**Authors:**

Nikita Taliana (1), Christine Debattista (1), Sandra Distefano (2), Neville Calleja (3), David Pace (1), Ruth Farrugia (1)

1. Department of Child and Adolescent Health, Mater Dei Hospital, Msida, MALTA
2. Clinical Performance Unit, Mater Dei Hospital, Msida, MALTA
3. Faculty of Medicine and Surgery, University of Malta, Msida, MALTA

Keywords: fever, fever duration, paediatric emergency department

Abstract :**Background**

Fever is one of the commonest presenting complaints to the paediatric emergency department (PED). We aimed to assess whether significantly more children are presenting to the emergency department with a fever duration of less than 12 hours over time. Our secondary aim was to assess whether an earlier presentation results in an increase in repeat visits to the PED or in admission rates.

Methods

This is a retrospective observational study involving children aged between 3 months up to 16 years presenting to PED at Mater Dei Hospital in Malta with fever over a five year period (2014 - 2018). Patients were identified by flagging a presenting complaint of 'fever', 'pyrexia', 'temperature', 'warm' or 'hot' at registration or triage, with this data being obtained from the Clinical Performance Unit.

The estimated sample size was based on the desired width of confidence intervals $\pm 5\%$ using Piface, giving a recommended minimum of 384 patients; a further 20% were added to account for exclusions. A weighted stratified sample was then drawn from the original population using computer randomisation, being representative of the overall population in terms of age, month, day of week and time of day at presentation.

The information was extracted from the electronic records for registration and triage. Patients not presenting with fever or having unspecified fever duration were excluded. Data analysis was performed by Microsoft Excel and SPSS version 22. Significance testing was performed using chi-squared test of association, with p value <0.05 being significant.

Results

There were 83,580 attendances to PED, with febrile children representing 31.5%, of whom 54.8% were males. The annual number of febrile patients attending PED increased steadily from 4997 to 5843 over the five year study period.

Of the initial representative sample of 488 patients, 119 patients were excluded as per criteria specified above, with 369 patients being included in the study analysis. Median age was 2.54 years (IQR 1.26, 4.82).

The busiest day was Sunday, with 21% of attendances, while 26.3% of patients attended between 4pm to 8pm. The vast majority of patients (86.9%) were self-referred.

Overall, the majority of patients (36.6%) attended after 48 hours of fever. Just over one-fourth of febrile patients (96/369) presented to PED before 12 hours of fever duration. This proportion remained relatively constant during the study period, with the exception of 2016, when a lower percentage presented within this time period; this difference was significant ($p = 0.03$).

Children presenting within 12 hours of fever were significantly less likely to need hospital admission ($p = 0.04$) but reattendance rates to PED did not vary when compared to those presenting with longer duration of fever ($p = 0.07$).

Discussion & Conclusions

More than one-fourth of febrile children presented to the PED within 12 hours of fever - this proportion has not increased over the past 5 years. Earlier presentation to PED with fever is not associated with an increased admission or reattendance rate when compared to longer fever duration prior to presentation.

#19209 : End-of-life in the emergency department: an observational study**Authors:**

Hadil MHADHBI (1), Khédija ZAOUCHE (2), Yosra YAHYA (2), Abdelrahim ACHOURI (3), Hamida MAGHRAOUI (2), Radhia BOUBAKER (3), Ramla BACCOUCHE (2), Kamel MAJED (2)

1. HMPIT, HMPIT, Tunis , TUNISIA
2. les urgences , La Rabta, Tunis, TUNISIA
3. la Rabta emergency departement, la rabta, tunis, TUNISIA

Keywords: End-of-life ; Emergency department; demography; etiology;elderly

Abstract :

Background: End-of-life care in emergency department (ED) is far from being an exceptional situation and is a growing issue all over the world. The aim of this study was to describe the profile of patient who died during hospitalization in ED.

Methods: We conducted a retrospective study in the ED over a period of one year. We included retrospectively the data of all patients who died in the ED during the study period.

Results: 900 patients were admitted in the ED of which 100 patients died (mortality rate estimated at 9%). 48% were male. The mean age was 70.2 ± 8 years, with extremes of 41 years to 99 years. 50% of the patients were over 75 years old. 60% had more than 2 comorbidities. About 2% of patients lived in institutions before admission. 10% were brought back to ED by medical transport. The average length of stay was 2 days and 6 hours. 70% of the patients required admission in intensive care (ICU) which has not been done due to lack of beds. The causes of death were: severe septic syndromes (33%) heart failure (27%), and trauma (5%).

Discussion & Conclusions: Patients who died at the ED are in the majority of cases elderly people. In fact during hospitalization for an acute event such, older adults are at risk of experiencing functional decline and iatrogenic complications, including falls, pressure ulcers, and delirium, which further contribute to functional decline which is associated with greater hospital mortality in older adults .therefore, It might be useful to create an acute geriatric unit in the ED dedicated to the frail elderly .

#19210 : ACUTE STROKE RISK FACTORS: FRIENDS OR ENEMIES? ALIAS THE HATEFUL EIGHT.

Authors:

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), ROBERTA GUARNONE (2), ELENA NOVARA (2), FRANCESCA GRULLI (3), GIULIANO UBERTI (2), ANNA CAVALLIN (2), ELISA CANDELORO (2), ALESSANDRA PERSICO (2), ELVISLAFE (4), FEDERICO ZAPPOLI THYRION (2), albamuzzi (5), carlo marena (5), STEFANO PERLINI (6), giuseppina grugnetti (7), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. emergency department, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. NEURO RADIODIAGNOSTIC, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
6. , POLICLINICO , pavia, ITALY
7. sitra, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY

Keywords: stroke triage emergency departement cardiovascular risk factor

Abstract :

FOREWORD: Stroke is one of the leading causes of residual mortality and disability worldwide, representing the first cause of disability in the elderly. Cardiovascular risk factors (CRF) contribute to determining the incidence and prognosis of ischemic stroke. Their analysis associated with that of signs and symptoms can lead to early recognition in triage even in patients with more blurred symptoms.

PURPOSE: Analyze the CRF in a large cohort with acute stroke diagnosis at our first aid. In particular, we analyzed diabetes mellitus, age > 65 AA, arterial hypertension, smoking habits, previous ictal pathology, ischemic heart disease, atheromasis and atrial fibrillation in various patients established in our emergency room for a consecutive year (May 2017-May 2018). We divided the population by presented symptomatological frameworks: motor, sensory, language and atypical (vertigo, confusion and syncope).

RESULTS: Patients who received a stroke diagnosis were analyzed in our ED (from May 2017 to May 2018) for a total of 759 patients. These had an average age of 74 years with a median of 77 y with a minimum prevalence of female sex (386 M, 373 F). The general population presented with high incidence of risk factors: more than 85% had at least one risk factor, 60% presented at least two risk factors, and 30% 3 or more. The most represented risk factor is arterial hypertension present in 65% of cases. Follow: habit of cigarette smoke in 13%, previous ictal pathology in 24%, ischemic heart disease in 20%, Carotid atheromasia 30%, atrial fibrillation in 18% and diabetes mellitus 20%.

56% presented with motor symptoms, 21% sensory symptoms, 44% speech disorder, 36% non specific symptoms. The 4 symptomatological groups were found to be overlapping by age, distribution of sex, and outcome of hospitalization. The symptomatological groups with motor, language and nonspecific disturbances have proved substantially overlapping by number and distribution of the risk factors. In particular: arterial hypertension 62-65%; Habit of cigarette smoke in 9-13%, previous ictal pathology in 23-24%, ischemic heart disease in 22% for patients with motor and language symptoms and 16% for those with atypical symptoms, Carotid atheromasia in 29-30%, atrial fibrillation in 16-23% and diabetes mellitus 18-22%. The group with sensory disorders instead sees a greater prevalence of smokers patients (17%) and a lower prevalence of patients with atrial fibrillation (10%) Whereas it has the same distribution compared to the other 3 categories of the other risk factors: atheromasia, over-netted trunks in 32% arterial hypertension 65% in and diabetes mellitus 16%, CAD 22%, previous stroke 24%.

Conclusions: The careful analysis of CRF together with the collection of signs and symptoms can lead to an improvement in early recognition already at the door of patients with neurological acuities and as a result of the whole therapeutic diagnostic process of these patients. In particular, patients with atypical manifestations (vertigo, syncope, confusion), which for symptoms may escape the emergency physician or

triage, when carefully assessed in the CRF may receive adequate priority to medical examination and recognition at the door.

#19211 : Computed tomography Pulmonary angiography(CTPA): An over-utilized imaging modality in patients presenting to emergency department with suspected Pulmonary embolism-An audit

Authors:

Muhammed kunhi kayakkool (1), noushik puthiyottil (1), salem mohammed aboosaleh (1), noushad thayyil (1), Muhammed kunhi kayakkool (1)

1. , hmc, Doha, QATAR

Keywords: Computed Tomography Pulmonary Angiography, Pulmonary Embolism

Abstract :

Computed tomography Pulmonary angiography(CTPA): An over-utilized imaging modality in patients presenting to emergency department with suspected Pulmonary embolism-An audit

ABSTRACT

Computed Tomography Pulmonary Angiography (CTPA) is increasingly being used for the investigation of Pulmonary Embolism (PE), however this increase is associated with a declining yield of the PE diagnosis in clinical practice. CTPA also involves significant radiation exposure.

Escalating numbers of computed tomography pulmonary angiography have been performed in the past 5 years in our institution. The purpose of this study was to audit the of radiologic investigations in the assessment of patients with suspected pulmonary embolism.

Methods

Scans performed from January to May2013 to November 2014 were selected for retrospective audit analysis by reviewing the patient notes, D-dimer values, chest Xray results were collected from the hospital's computerized results system from patients presented to emergency department of hamad general hospital Doha. Qatar.

Results

A total of 530 CTPA scans were reviewed. The age of patients ranged from 21 to 94 years, with a mean age of 67 years. 264 of the scans were performed in women. The reported findings for the 538 CTPA scans were PE in 67 (12.64%) scans, alternative diagnoses in 270 (50.94%) scans, and no abnormality identified in 193 (36.4%) scans . D-dimer testing was not performed in 164(30%). No patient with low/intermediate probability and negative D-dimer was diagnosed with pulmonary embolism (PE).

Discussion

The positive yield of CTPA in HGH hospital is 12.64%. The low yield is perhaps suggestive of overuse of CTPA. Adherence D-dimer concentration has been shown to increase with age and can result in additional unnecessary CTPA referrals due to false positivity in elderly patients [4,5,6].

In conclusion, the current trend in CTPA requests in HMC Hospital needs adherence to the current guidelines evidence-based literature, and current concepts in evaluation with suspected acute PE will reduce unnecessary CTPA examinations which could have reduced CTPA scans required ,thus minimizing avoidable patient radiation exposure and resultant cost implications.

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#19212 : Epidemiology of patients with st-elevation myocardial infarction in pre-hospital care

Authors:

Rabeb Mbarek (1), Elee sghaier (2), Dorra Loghmari (3), Chrifa Aouini (2), Ahmed Guesmi (4), Mounir Naija (2), Naoufel Chebili (2)

1. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA
2. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA
3. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 CHU sahloul sousse, CHU sahloul sousse, SOUSSE, TUNISIA

Keywords: pre-hospital,Epidemiology,STEMI

Abstract :**Epidemiology of patients with st-elevation myocardial infarction in pre-hospital care**

R MBAREK, E SGHAIER,D LOGHMARI, C AOUINI,A GUESMI,M NAIJA ,N CHEBILI.

BACKGROUND: Chest pain related to st-elevation myocardial infarction (STEMI) is a common reason for calling the Emergency Medical Assistance Service (EMAS). The purpose of our study was to describe the demographic, clinical and evolution characteristics of patients treated in pre-hospital by EMAS for STEMI.

METHODS: This is a prospective descriptive study of 305 patients with STEMI, enrolled in an Emergency Medical Assistance Service, from January 2018 to December 2018 . **RESULTS:** A total of 305 patients with STEMI who were transported by a mobile emergency care unit (MECU). The mean age was 61 years with male predominance (79%). 55 of received calls where form of Peripheral Hospitals' physicians and 33.4% from university hospitals' physicians. Most of the calls were received during the day with 68.9% from 8 am to 8 pm with a peak between 4pm and 8pm (29%). calls were made to report a diagnosed STEMI in 78% of the cases, and undiagnosed chest pain 18%.Hypertension and/or diabetes and smoking were the most common risk factor (30%; 27%). 43.3% of STEMI had an anterior territory (including the septal), 28.9% were inferior and 1.3% were basal. 31.9% of STEMI cases were with complications , 3.4% of patients had a cardiac arrest, 7% had left ventricular failure, 8.5% had arrhythmia , and 11% had conduction disorder. The mean time of symptom onset to consult was 2.7 hours. The emergency reperfusion therapy was thrombolysis in 34% of patients, primary percutaneous coronary angioplasty in 31.8%, rescue PCA (Percutaneous coronary angioplasty) in 3.3% and no reperfusion in 44%. 43 patients went through PCA in public hospitals, 42 patients in private ones. Regarding the outcome of the mission : 35.1% patients taken directly to the Catheterization laboratry, 25.7% to the intensive care unit, and 29.8% to an Emergency Department. The mortality rate was 3%.

CONCLUSION:

The most important risk factor in our serie was smoking, diabetes and hypertension, which highlight the importance of prevention.Efforts should be made to respect the recommended time limits to avoid delays and to improve prognosis.

Trial Registration / Funding Information (only) :

no funding

#19213 : REENGINEERING TDP OF PATIENTS WITH ACUTE STROKE: THE ROLE OF THE EMERGENCY ROOM IN REAL LIFE

Authors:

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), ELENA NOVARA (2), STEFANO PERLINI (3), FRANCESCA GRULLI (4), GIULIANO UBERTI (2), ELVIS LAFFÈ (5), FEDERICO ZAPPOLI THYRION (2), ELISA CANDELORO (2), ANNA CAVALLIN (2), ALESSANDRA PERSICO (2), alba muzzi (6), carlo marena (6), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. , POLICLINICO , pavia, ITALY
4. emergency department, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. NEURO RADIODIAGNOSTIC, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY

Keywords: stroke, triage, emergency departement, ORGANIZATION

Abstract :

FOREWORD: Stroke is one of the leading causes of mortality and residual disability worldwide, about 35% of patients suffering from severe residual stroke disability. Prevalence has increased progressively over the past 25 years, doubling between 1990 and 2010. The NINDS recommends a clinical stabilization evaluation within 10 minutes of access, a neurological evaluation within 25 minutes, and an execution and reporting TC Encephalon within 45 minutes. This behaviour has made it possible to reduce the overall mortality per stroke by 20% between 1990 and 2010.

PURPOSE: Analyse the role of ED in the therapeutic diagnostic pathway. In particular, analyse the new setting and the use of resources that involved this re-engineering, taking into account the waiting, process and permanency times, the number of radiologic and angiographic examinations provided, the number of Invasive procedures in the population in the subject.

RESULTS: The patients who received a stroke diagnosis were analyzed in the first year (from May 2017 to May 2018) for the re-engineering of TDP, for a total of 759 patients. These had an average age of 74 y with a median of 77 y with a minimum prevalence of female sex (386 M, 373 F). It is a population of high complexity as demonstrated also by the fact that taking into account risk factors such as diabetes mellitus, age > 65 AA, arterial hypertension, habit of smoking cigarettes, previous ictal pathology, cardiopathy Ischemic, catotid Atheromasian and atrial fibrillation 60% of the study population presented at least two risk factors, and 30% 3 or more. 90% needed shelter at our stroke unit. 110 patients were candidates for thrombolysis, systemic or mechanical or both. The waiting times had an average duration of 45 minutes with 23 minutes of median; The attribution of color code was adequate having 85% had a priority code to visit yellow or red. The process times had an average duration of 5 hours and 7 minutes with a median of 3 hours and 21 minutes; The permanence times were average duration of 5 hours and 52 minutes with a median of 4 hours and 6 minutes; 14.3% of patients required a time of 12 hours, 5.4% over 20 hours and 1.9% > 24 hours. All patients were subjected to basal imaging and more than 50% to study of the intra-and extracranic circle with contrast medium. The median times of neurological visitation have been 30 min from the emergency physician's visit, TC's reporting of 1 hour and 30 minutes from the medical examination, closure of the neurological counseling of 2 hours and 50 minutes from the medical examination.

Conclusions: therapeutic diagnostic pathway of these patients is largely performed in the ED setting in a multidisciplinary collaboration between emergency physicians, neurologists and interventionist radiologists, up to Stabilization of patients. The reengineering of this acute pathology was possible mainly thanks to the cultural change and consequently of role that in recent years has involved the various emergency services of the various departments I emergencies and their collaboration in a field Multidisciplinary.

#19215 : TIME AND FIBRINOLYSIS IN ACUTE STROKE IN EMERGENCY DEPARTEMENT (ED) IN REAL LIFE: THE TIME MACHINE

Authors:

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), ROBERTA GUARNONE (2), ELENA NOVARA (2), giuseppina grugnetti (3), FRANCESCA GRULLI (4), GIULIANO UBERTI (2), STEFANO PERLINI (5), ELVIS LAFFE (6), FEDERICO ZAPPOLI THYRION (2), ANNA CAVALLIN (2), ELISA CANDELORO (2), ALESSANDRA PERSICO (2), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. , IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. sitra, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
4. emergency department, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
5. , POLICLINICO , pavia, ITALY
6. NEURO RADIODIAGNOSTIC, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: stroke, triage, emergency departement, ORGANIZATION, fibrinolysis

Abstract :

FOREWORD: Stroke is one of the leading causes of residual mortality and disability worldwide. It is also a time-dependent pathology: An early treatment (enters 4.5 hours after the onset of symptoms for systemic thrombi therapy and 6-8 hours for mechanical thrombus lysis) reduces mortality and residual disability.

PURPOSE: To analyse the waiting process and neurological evaluation times in a large cohort of acute stroke patients undergoing thrombolysis in our emergency room for a consecutive year (May 2017-May 2018). Finally, we analyzed the different timing distribution according to the presentation symptomatological framework. The presentation symptomatological frameworks considered are: motor, sensory, language, atypical disorders (including vertigo, confusion and syncope).

RESULTS: Patients who received a stroke diagnosis were analyzed in our ED (from May 2017 to May 2018) for a total of 759 patients. Of these 105 were considered eligible to thrombolysis. These had an average age of 71 AA with a median of 73 AA with equal gender distribution (53 M, 52 F). This population shows a high incidence of risk factors: 94% had at least one risk factor, 63% of the study population at least two risk factors, and 30% 3 or more. The risk factor we consider were: Arterial hypertension, Carotid Atheromasia , habit of cigarette smoke, previous ictal pathology, ischemic heart disease, atrial fibrillation and diabetes mellitus.

The waiting times had an average duration of 11 minutes with 7 minutes of median; The attribution of the priority color code to the medical exam has been adjusted in all cases with the attribution of yellow Stroke code or red code. The process times had a median duration of 2 hours and 58 minutes; The permanence times were median of 3 hours and 8 minutes; 6% of patients required a time of 6 hours, 2% over 12 hours.

The median times of neurological visitation were 22 minutes; Those to have result (execution + refertation) of the cerebral TC with study of the Intra and Extracranic circle were 1 hour and 22 minutes.

We have therefore divided the population of patients subjected to thrombolysis into clinical syndromes: Patients with motor, sensory, language and nonspecific symptoms. 85% presented with motor symptoms, 30% sensory symptoms, 61% speech disorder, 28% atypical symptoms. The 4 symptomatological groups were found to be overlapping by age, distribution of sex, and outcome of hospitalization.

Comparing the various groups we see how the first three symptomatologist groups present equivalence in the waiting time have all with an average duration of 11 minutes and 7 minutes of median, minimally longer the waiting times of patients with atypical symptoms with average duration of 14 minutes and 9 minutes of median. Completely overlapping the remaining times analyzed in all 4 symptomatological categories.

Conclusions: Multidisciplinary team work has allowed the time of thrombolysis to be respected with good results for patients. AND plays a key role in this scenario where multidisciplinarity and multi-professionalism can collaborate profitably.

#19217 : Identify Febrile Infants 90 Days and Younger for Serious Bacterial Infections; Keep Developing A Novel Score**Authors:**

Eren Erseven (1), Caner Turan (1), Ali Yurtseven (1), Eylem Ulas Saz (1)

1. Department of Pediatrics, Division of Emergency Medicine, Ege University School of Medicine, İzmir, TURKEY

Keywords: fever, serious bacterial infections, infants

Abstract :**Introduction:**

When evaluating the febrile young infant in the emergency department (ED), the goal is to identify infants who are at high risk for serious bacterial infection (SBI; ie, bacteremia, urinary tract infections and/or meningitis) or serious viral infection (eg, herpes simplex virus infection) and who therefore require empiric antimicrobial therapy and hospitalization. Since the highest risk for SBI in pediatric population occurs in febrile 1 to 3 month old and exam findings does not provide sufficient data to identify serious illness a novel evidence based algorithm is required. Careful assessment and judicious use of laboratory studies can identify patients at both high and low risk of SBI.

We aimed to elucidate if clinical features and laboratory tests identify febrile infants 90 days and younger at low risk for SBI. Our results evaluated using the Step-by-Step algorithm, the Lab-score and other novel approach (Kuppermann N, et al).

Methods:

This is a retrospective cohort study, involves all febrile infants 90 days and younger who admitted to our pediatric ED between 1 January 2017 and 1 January 2019. All clinical characteristics and performed ancillary tests (blood and urine) (White Blood Cell (WBC), absolute neutrophil count (ANC), serum Procalcitonin (PCT), C-reactive protein (CRP) and urinalysis were reviewed. SBI was defined when a bacterial pathogen was isolated in a blood, urine stool or cerebrospinal fluid culture was positive for any pathogen. Additionally if clinical and laboratory findings suggest pneumonia it also considered SBI.

Results:

We reviewed the electronic medical records for 459 febrile infants (> 38 ° C) 90 days and younger. The mean age was 46.8 days and 54.5% was male. Serious bacterial infections were present in 66 of 459 infants (14.4%). The most common SBIs were urinary tract infections 42 (9.2%), 17 (3.7%) bacteriemia, 6 (1.3%) pneumonia and 1 (0.2%) meningitis.

“Step by Step” approach caught 61 of 66 infants with SBI when appreciated as high or intermediate risk group. However the same algorithm was positive in 39 infants who did not have SBI. The negative predictive value for “Step by Step” was 98.5%, “Lab Score” 87.9%, and “Kuppermann et al” study 89.9%. One-fifth of patients admitted to ward, and 28 (5.9%) to intensive care unit.

Discussion&Conclusion

All developed scores and approach were not perfect tool. Despite the high negative predictive values of step-by-step, Lab-score or other novel models, physicians should be kept in mind that careful serial assessment and short observation period with repeated some ancillary tests is required.

Trial Registration / Funding Information (only) :

No funding

#19218 : Role of intensive short observation (OBI) in the management of patients with acute heart failure (AHF): REAL LIFE**Authors:**

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), ILARIA FERRARI (2), ANNA GIULIA FALCHI (3), GIUSEPPE CRESCENZI (3), STEFANO PERLINI (4), ENRICA MELONI (5), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. emergency department, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. , POLICLINICO , pavia, ITALY
5. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: emergency departement, OBI, acute haert failure, ED ORGANIZATION

Abstract :

PREMISE: AHF is one of the main causes of hospitalization in Western countries; It is estimated that it represents about 1-2% of the accesses in the emergency department of urgency (DEA), reaching more than 10% in the patients with more than 70 years. About 70-80% of patients in ED affected by AHF have clinical indication for hospitalization. AHF constitutes 5% of all the causes of hospitalization for an acute episode, it is found in 10% of the hospitalized patients and represents about 2% of the health expenditure, attributable in good substance to the costs of the hospitalization. Total mortality of 50% is estimated at 4 years. Among patients hospitalized for AHF mortality and re-hospitalization is 40% to 1 year. In the last decade, international databases show that the AHF mainly concerns seniors with an average age of 75 years and that men and women are equally affected.

PURPOSE: To analyse the impact that the OBI, a stabilizing area dedicated to the unstable patient, can have in the management of AHF patients in terms of stabilization, admission and dimission rate, rate of transfers to centres of less Intensity of treatment and the rate of returns at 7, 14 and 30 days.

RESULTS: Patients who received diagnosis of AHF from our ED were analysed from 1 January to 31 December 2017 for a total of 920 patients. Of these, 62% was transferred to OBI for stabilization. There is no difference between the OBI and non-OBI populations in terms of age and sex. Greater was the rate of stabilization in OBI as indicated by the reduction of colour code to discharge (green code 44% by OBI vs 30% non-OBI) despite a higher percentage of high priority codes at the entry among patients treated in OBI (Yellow and red 80% in OBI vs 70% not OBI). The patients treated in OBI have clearly longer process times but have less hospitalization rate and higher discharge rate. The stabilised OBI'patients also have a greater number of transferred (11% vs 5%) At less intensive care hospitals and have a reduced rate of return at 7, 14 and 30 days incrementally.

Conclusions: It is clear that a dedicated area of the stabilisation like the OBI, has progressively allowed to change the face of the ED, with the aim no longer to hospitalize to process the patient but to process the patient to treat and possibly hospitalize. It allows a better management of the patients with AHF reducing the rate of admissions and increasing the rate of discharge in safety as indicated by the simultaneous reduction of the rate of return to 7, 14 and 30 days and a better management of the health resources

#19219 : High cortisol levels predict worse outcome in patients with community pneumonia**Authors:**

Lucas Marino (1), Hermes Barbeiro (1), Denise Barbeiro (1), LuzMarina Gomez (1), Julio Alencar (1), Julio Marchini (1), Rodrigo Brandao (1), Heraldo Souza (1)

1. Faculdade de Medicina da Universidade de São Paulo, Faculdade de Medicina da Universidade de São Paulo, São Paulo, BRAZIL

Keywords: corticosteroids, sepsis, glucocorticoid receptors, inflammatory markers

Abstract :

Critical Illness-Related Corticosteroid Insufficiency (CIRCI) is a condition still not completely understood. Although the current guidelines suggest the administration of corticosteroids only in septic patients who do not respond to the initial fluid resuscitation, it is not clear how it works and the signaling pathways that may affect its efficacy.

Therefore, we made the hypothesis that corticosteroids therapeutic action may be related not only to cortisol levels, but also to the degree of glucocorticoids receptors (GR) expression.

We included in this study 181 patients presented to the Emergency Room with the diagnosis of community pneumonia. Blood samples were collected at the admission and outcomes were evaluated during hospital stay and after 30 days.

Cytokines were measured by Multiplex method, and glucocorticoid receptors α and β were measured in leukocytes homogenates by ELISA. Data are presented here as mean \pm SEM.

Patients' ages vary from 18.2 to 100.0 y.o (average = 61.7 ± 1.5). From the 181 patients, 96 were also septic and 40 had septic shock. Mortality was 17.7% (32 patients). Seventeen of these patients were chronic corticoid users and were evaluated separately.

The main discriminators between survivors and non survivors were SOFA (2.9 ± 0.2 vs 4.8 ± 0.4 , respectively, $p < 0.05$) and total cortisol levels (18.5 ± 2.1 vs 39.7 ± 8.2 , respectively, $p < 0.05$). There was no difference in GR α or β expression between survivors and non survivors. Previous corticosteroid use also did not affect the levels of GRs expression, suggesting that these receptors are not subjected to feedback regulation.

In addition none of the inflammatory markers measured at admission (proadrenomedulin, procalcitonin, C-reactive protein or cytokines) were able to distinguish the patients who would survive.

In conclusion, we showed that cortisol levels are a good predictor of outcome in patients with community pneumonia and GR expression did not affect this outcome.

Trial Registration / Funding Information (only) :

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Authors:

IRIDEFRANCESCA CERESA (1), GABRIELE SAVIOLI (1), VALENTINA ANGELI (2), GIUSEPPINAGRUGNETTI (3), ALBA MUZZI (4), VIOLANOVELLI (5), CARLO MARENA (4), PAOLO DIONIGI (6), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. sitra, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
4. direzione medica di presidio, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
5. DIREZIONE MEDICA DI PRESIDIO, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
6. SURGERY, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: DISASTER MEDICINE, BED CAPACITY, EMERGENCY DEPARTEMENT, SIMULATION

Abstract :

Introduction: In Italy With regard to the capacity of available beds There are no precise indications, as opposed to what happens in Israel where by obligation of law every hospital must make available at least 20% of the beds in situation of Emergency or catastrophe.

It follows that generally the declared number is purely theoretical, derived for example on the number of single rooms convertible in doubles, on the beds barrier and insulation or on retrospective estimation on the basis of the patients who ordinarily are Discharged by the various hospital departments

Purpose: The primary objective is the evaluation of the bed surge capacity in eighteen medical and surgical hospital departments, by detecting in real time the number of beds available/readily deliverable at 2 and 24 h from a hypothetical maxiemergency, Through four total simulations (three for phase 1 and one for Phase 2), both of which consist of two detection times (T2 and T24).

Materials and methods

The estimation of the hospitalization capacity and the surgical capacity of the foundation has been assessed on weekdays and holidays, dividing the beds free/readily deliverable by typology (medicines, surgeries, intensive care and subintensives) and Availability of operating theatres.

The creation of new beds was presumed by the possibility of displacement of patients in a lower level of care than that provided at the time of detection, dislocation of patients in a discharge room with assistance of type Nursing, transfer to hospitals with less intensity and rehabilitation facilities or discharge at home.

Results: Eighteen departments belonging to the medical Area were involved (nephrology, rheumatology, cardiology, pneumology, general medicine 1 and 2 and Gynecology), of the eight departments belonging to the surgical Area (General surgery 1 and 2, vascular surgery, Urology, neurosurgery, pediatric surgery, orthopaedics and otorhinolaryngology).

Surveys have been performed on an average of 388 patients hospitalized, patients in the surgical Area are about 47% compared to the total against 45% of those present in the medical Area

In the simulations, the estimate of beds that can be freed by medical area was on average 66.5% for that, 68.6% for the surgical Area, and 51% of subintensive departments. Stable data at both T2 and T24

In phase 2 The liberable beds were found in I and II Day of 46% in Subintensives and 50% in the medical area, while there was a decrease in T24 in surgical area (7%).

Conclusions: The study shows that the availability of simulated beds is greater than that indicated in the plans of Maxiemergency, which was exclusively based on the census of the beds.

Due to the repeatability that has been found in the simulations it can be derived that mathematical models could be created which, based on the evaluation score of the patient's clinical conditions, could be applied to different hospitals.

#19222 : The chronic obstructive pulmonary disease exacerbation experience: An observational study**Authors:**

Hadil MHADHBI (1), Yosra YAHYA (2), Khédija ZAOUCHE (2), abdelrahim ACHOURI (3), Hamida MAGHRAOUI (2), Radhia BOUBAKER (3), Ramla BACCOUCHE (2), Kamel MAJED (2)

1. HMPIT, HMPIT, Tunis , TUNISIA
2. les urgences , La Rabta, Tunis, TUNISIA
3. la Rabta emergency departement, la rabta, tunis, TUNISIA

Keywords: acute exacerbation, chronic obstructive pulmonary disease, etiology, prognosis

Abstract :

Background: Chronic obstructive pulmonary disease is predicted to become the 4th leading cause of death worldwide by 2030.

The natural history of the disease includes progressive symptoms punctuated by acute exacerbations during which symptoms rapidly deteriorate. We aimed to study the clinical, etiological and prognostic characteristics of acute exacerbation of Chronic obstructive pulmonary disease (AECOPD)

Methods: This is a prospective study conducted at the ED during a period of 6 months including all patients admitted for (AECOPD).

Results: 120 patients were enrolled, Mean age = 63 +/- 8 years. Men n (%): 64 (52.9). Tobacco poisoning was found in 76% of cases. The cause of the exacerbation was (%): bronchopulmonary infection (74) acute heart failure (5.8), pulmonary embolism (5) and pneumothorax (5). The average length of hospitalization was 19 ± 20 hours. All patients have benefited from a treatment based on: oxygen therapy, bronchodilators, short-term systemic corticosteroids. Antibiotics were initiated in 45.8% of patients. non-invasive ventilation Were used in 30.8% of patients. 15.8% required orotracheal intubation. The mortality was 14.2%.

Discussion & Conclusions:: The mechanisms of COPD exacerbation are complex. Respiratory viruses (in particular rhinovirus) and bacteria play a major role in the causative etiology of COPD exacerbations. In some patients, noninfective environmental factors may also be important. Data recently published from a large observational study identified a phenotype of patients more susceptible to frequent exacerbations. In our study the etiologies are varied but remain dominated by bacterial infections and AECOPD were associated with high mortality.

#19224 : A comparison among three clinical scores to identify low risk patients with non traumatic chest pain: a retrospective study

Authors:

Gabriele Farina (1), Eleonora Tubertini (1), Luca Santi (1), Elena Casadei (1), Giulia Cester (1), Mario Cavazza (1)

1. emergency department, Sant'Orsola Hospital, Bologna, ITALY

Keywords: chest pain, heart score, rule out, not, nacpr, low risk

Abstract :**Background:**

In Italy, non-traumatic chest pain represents about 6% of admission to the Emergency Department (ED), but only 15-20% of these is due to acute coronary syndrome (ACS). There are many scoring systems developed to stratify patients depending on the risk of major adverse cardiac events (MACE), particularly the HEART score, the North American Chest Pain Rule (NACPR), the Not Objective Testing Rule (NOT).

The aim of this study is the comparison of these scores in order to identify patients who can be safely discharged from the ED.

Methods:

We analysed data obtained from a previous monocentric, retrospective, observational study performed in order to analyse modified Heart Score in patients admitted to ED of Policlinico Sant'Orsola in Bologna for chest pain, between January 1 and June 30, 2014.

We enrolled 1597 consecutive 18 or older aged patients for acute non-traumatic chest pain, irrespective of comorbidities, medical treatments and the onset of symptoms. Of them, 262 were excluded because of anginal equivalent without chest pain, significant ST-segment elevation, impossibility to complete the physician's evaluation or the follow up. 191 patients were excluded because of the lack of the second troponin, necessary for NOT and NACPR. The final population is then composed by 1144 patients.

Patients were recalled within 180 days in order to register MACE.

We used Heart Score modified for the EKG criteria: two points were assigned in case of typical acute ischemia (significant ST-segment depression and T wave changes), 0 points in the case of a normal EKG or a single known anomaly without ST-T abnormalities, one point was assigned in the other cases. Instead, we used unchanged version of the NACPR and NOT.

The performance of these scores was evaluated with the estimates of sensitivity, specificity, negative predictive value (NPV) and positive predictive value (PPV). We also compared the proportion of MACE in each low risk category of Heart Score, NACPR and NOT.

Results:

According to data analysis, the average age of the population is 60 ± 19 . The Heart Score identified 26% (n=297) of patients in the low risk category, NACPR 9.3% (n=107) and NOT 11% (n=123). In this class of patients, all the scores showed a sensibility and an NPV of 100% for MACE, as nobody of these presented major adverse cardiac events.

Discussion & conclusion:

According to the literature, all these scores have high NPV, which reflects their capability to identify low risk patients for ACS. Instead Heart Score identified a significantly greater number of patients than the other two scores ($p < 0.0001$).

This likely depends on the inclusion criteria, in particular the exclusion of patients aged greater than 50 years old, who represent the majority of the ones admitted to the ED.

If these data were confirmed in new prospective studies, Heart Score would be used in clinical practice to safely discharge patients to the ED. In this way we could improve health costs and the hospital's overcrowding.

Trial Registration / Funding Information (only) :

Trial Registration: HEART-HST-2015, protocol number: 94/2015/0/0/ssN Funding: this study did not receive any specific funding. Ethical approval and informed consent: this study was approved by the EC of Sant'Orsola Hospital. For this type of study, formal consent is not required.

#19226 : DRUGS OF ABUSE: DANGER OR PLEASURE?

Authors:

Gabriela Grigoras (1), MIHAELA CORLADE (2), Ovidiu Tudor Popa (1), Anca Haisan (3), Paul Nedelea (1), Catalin Bouros (4), Ana Mitul (5), Irina Ciumanghel (5), Diana Cimpoesu (1)

1. Emergency Department, University of Medicine and Pharmacy Gr.T. Popa Iasi, Iasi, ROMANIA
2. Département d'urgence, UPU - SMURD, Hôpital Clinique Universitaire « St. Spiridon » Iasi, UMF « Gr.T.Popa » Iasi, Iasi, ROMANIA
3. Emergency Dept, University of Medicine and Pharmacy, Iasi, ROMANIA
4. Resident in Emergency Medicine, Clinical County Emergency Hospital "Sf. Spiridon" Iasi, Iasi, ROMANIA
5. Specialist in Emergency Medicine, Clinical County Emergency Hospital "Sf. Spiridon" Iasi, Iasi, ROMANIA

Keywords: cannabis, synthetic cannabinoids, new psychoactive substances, drug abuse

Abstract :**INTRODUCTION:**

New psychoactive substances have achieved an unfortunate popularity among groups of substance abusers, since the products are easily available, inexpensive and undetectable by regular drug testing methods. There are numerous cases of patient harm and death all over the world with many psychological, neurological, cardiovascular, pulmonary, and renal adverse events secondary cannabis and new psychoactive substances consumption.

OBJECTIVE:

We sought to evaluate the Romanian national trend of drug consumption (cannabis and new psychoactive substances) and to identify the risk factors and the particularities of substance abusers who needed medical care in the Emergency Department of the „St. Spiridon” County Hospital.

METHOD:

Retrospective study conducted over a period of 48 months (January 1, 2015-December 31, 2018). This study included all patients who presented to Emergency Department after drug consumption. We retrospectively assessed prevalence, clinical and biochemical features, management and emergency treatment of drugs abuse patients and their future evolution.

RESULTS: During the 4 years period, 280 patients were enrolled in the study with an average age of 27.36, majority represented by men (89%), most of them from urban areas (82%). 72,82% patients were brought to the hospital by ambulance, in stable hemodynamic condition (95,65%) and the most common route of administration was smoking (84.28%). Psychomotor agitation (21.07%), nausea (17.85%), vomiting (11.42%), tachycardia (11.07%), syncope (3.57%) and previous chest pain (3.57%) are six of the major clinical manifestations declared by patients at admission. According to statistical data, most patients who reported chest pain at presentation associated cannabis / marijuana use. The tachycardia was reported by 21 patients consuming new psychoactive substances compared to only 10 patients with cannabis users. Eight cases (2.85%) had a Glasgow Coma Score ≤ 9 at presentation and orotracheal intubation and mechanical ventilation was required in four cases. A close link between chronic drug use and the severity of electrocardiographic changes has been noted, 28 chronic cannabis consumers presented a right bundle branch block on electrocardiogram and one patient who declared a chronic new psychoactive substances consume, presented paroxysmal supraventricular tachycardia at admission. In Emergency Department all patients were stabilized and two patients needed monitoring in the Intensive Care Clinic. Patients requiring hospitalization (28 patients, 10%) were with significant medical complications (severe arterial hypertension, tachycardia, heart rhythm disorders, seizures) requiring treatment and subsequent observation.

CONCLUSIONS:

The emergence of smokable herbal products containing synthetic cannabinoids, which mimic the effects of cannabis, appears to become increasingly popular, in the new psychoactive substances landscape. Although most users prefer using cannabis, there are convenience, legal, and cost reasons driving the utilization of synthetic cannabinoids. Clinicians should be aware of pharmacologic and clinical similarities and differences between synthetic cannabinoid and cannabis use, the limited ability to detect this products in the urine or serum, and guidance to treat adverse events. In Romania the most commonly used drugs are cannabis followed by ethnobotanical products. For a while, ethnobotanical products were falsely considered as risk-free, but they contain dangerous substances with devastating effects, which, unless treatment is initiated immediately, can lead to death.

#19229 : Head-to-head comparison of the Shock Index, Modified Shock Index, and Age Shock Index for predicting early mortality in major injury in prehospital scope

Authors:

Francisco Martín-Rodríguez (1), Raúl López-Izquierdo (2), Rodrigues Leonardo (3), Maria Antonia Udaondo Cascante (4), Virginia Carbajosa Rodríguez (2), Juan F. Delgado Benito (5), Miguel A. Castro Villamor (6), José Ángel Gutiérrez Sevilla (7), Santiago Otero de la Torre (1), David Guillén Gil (8), María Nieves Diego Rasilla (8), Pedro Arnillas Gómez (1), Cristina Vázquez Donis (1), Carmen Del Pozo Pérez (9), Ana Mercedes Huidobro del Arco (5), Carlos Del Pozo Vegas (10)

1. Advanced Life Support Unit Valladolid, Prehospital Emergency Medical Service SACYL, Valladolid, SPAIN
2. Emergency Department, Hospital Universitario Río Hortega, Valladolid, SPAIN
3. Emergency Department, Hospital Sanatorio de Luanda, Luanda, ANGOLA
4. Radiology, Hospital Universitario de Burgos, Burgos, SPAIN
5. Advanced Life Support Salamanca, Prehospital Emergency Medical Service SACYL, Salamanca, SPAIN
6. Facultad de Medicina, Universidad de Valladolid, Valladolid, SPAIN
7. Advanced Life Support Miranda de Ebro, Prehospital Emergency Medical Service SACYL, Miranda de Ebro, SPAIN
8. Advanced Life Support Burgos, Prehospital Emergency Medical Service SACYL, Burgos, SPAIN
9. Advanced Life Support Unit Segovia, Prehospital Emergency Medical Service SACYL, Segovia, SPAIN
10. Emergency Department, Hospital Clínico Universitario, Valladolid, SPAIN

Keywords: Trauma; triage; prognosis; mortality; score

Abstract :

Introduction: Major injury is a time-dependent pathology in which the quantification of vital prognosis is fundamental for professionals. The objective of this study is to evaluate the ability of the Shock Index (SI), Modified Shock Index (MSI) and Age Shock Index (aSI) to predict early mortality (2 days) from the index event.

Material and methods: Prospective longitudinal study, between April 1, 2018 and April 30, 2019. The study was developed on a reference population of 1,021,086 inhabitants, distributed in four provinces of Spain (Burgos, Salamanca, Segovia and Valladolid). All the hospitals included in the study have ICU and ample surgical capacity. It was considered that a patient fulfilled criteria to be included in the study if he had been attended by Advanced Life Support Units and transferred to the emergency services with major injury diagnosis, and did not meet any exclusion criteria: minors, cardiorespiratory arrest, death and pregnant women.

Demographic data (age and gender) and clinical parameters (systolic, diastolic, mean and heart rate) for the calculation of SI, MSI and aSI were collected during the first contact with the patient in prehospital care with the LifePAK® 15 monitor (Physio-Control, Inc., Redmond, USA).

The need for admission, the Intensive Care Unit and the mortality data were obtained by reviewing the patient's electronic history after 3 days.

The main dependent variable was mortality from any cause in the hospital before the first two days from the index event.

The area under the curve (AUC) of the receiver operating characteristic (ROC) was calculated for each scale in terms of 2-day mortality, as well as the best score that offered greater sensitivity and joint specificity.

Results: a total of 220 patients were included in our study. The median age was 62 years (IQR: 38-68 years), 35.9% of them were women. The 2-day mortality was 5.1% (11 cases). 18.6% (41 cases) of patients required ICU.

The AUROC obtained were SI (0.569, 95% CI: 0.38-0.75, $p = 0.452$), MSI (0.625, 95% CI: 0.44-0.80, $p = 0.174$) and aSI (0.775, 95% CI: 0.61-0.94; $p = 0.019$). The value with the best overall sensitivity and specificity for the aSI was 37.05, sensitivity of 90.9% (62.3-98.4), specificity of 67.0% (60.4-73.0), positive predictive value 12.7 (7.0-21.8), negative predictive value 99.3 (96.1-99.9), Likelihood ratio (+) 2.75 (2.10-3.60), Likelihood ratio (-) 0.14 (0.02-0.89) and odds ratio 20.29 (2.55-161.73).

Conclusions: The prehospital aSI has an excellent capacity to predict the early mortality of patients with major injury, and is a diagnostic tool, cheap, easy to obtain and reliable that can help in the clinical decision making, as well as in the selection of the center Hospital more suitable, with intensive care unit and surgical capacity.

Trial Registration / Funding Information (only) :

The study was approved by the Research Ethics Committee of all participating centers (reference CEIC: #PI 18-010, #PI 18-895, #PI 2018-10/119, #PI MBCA/dgc and #CEIC 2049). All patients (or guardians) signed informed consent, including consent for data sharing. This research has received support from the Gerencia Regional de Salud (SACYL) for research projects in Biomedicine, Healthcare Management and Healthcare Care, with registration number GRS 1678/A/18, principal investigator: Francisco Martín-Rodríguez, as part of the "Use of early warning scales in the prehospital scope as a diagnostic and prognostic tool", and Scholarship for the intensification of the research activity for the year 2019, with registration number INT/E/02/19 from the Gerencia Regional de Salud (SACYL).

#19230 : A survey study of dynamic changes of emergency department visit's in Romania**Authors:**

ANCA HAIKAN (1), DIANA CARMEN CIMPOESU (2), OVIDIU POPA (3), MIHAELA CORLADE (3), GABRIELA GRIGORASI (3), ANDREEA BARLADEANU (4), ANCA SAVA (4), CORINA SIMINCIUC (4)

1. Emergency Department of St. Spiridon, University of Medicine Iasi, Iasi, ROMANIA
2. Emergency Department of St. SpiridonS, University of Medicine Iasi, IASI, ROMANIA
3. Emergency Department of St. Spiridon Hospital of Iasi, University of Medicine and Pharmacy Grigore T. Popa Iasi, Iasi, ROMANIA
4. Emergency Department, St. Spiridon Hospital of Iasi, Iasi, ROMANIA

Keywords: emergency department, overcrowding, emergency severity index

Abstract :

Background. Since the development of emergency department (ED), the number of patients who address to this units are increasing all over the world, due to many reasons, such as decreasing number of inpatient beds, closing hospitals, difficulty to address ambulatory specialities, insurances problems. Materials and method. Our purpose was to make a survey study of ED visits of Saint Spiridon Hospital of Iasi, the regional hospital of north eastern region of Romania, over 4 years, between 2015-2019, to scan the dynamic changes of number of patients and the gravity of their illness. Results. Compare to 2015, there is an increase visits of ED in 2018, with 17,47% per day shifts, and with 4% in the night time. In a 24hour distribution, we observed that 62% of total patient came in the day time. In our emergency system it is applied Emergency Severity Index (ESI) triage method, and from analysed data we conclude that 2,26% were ESI 1, 55.44% were ESI level 2, a proportion of 38% were ESI 3, and 4.30% were ESI 4. For the patients in ESI 1 condition we find a equal distribution day over night time, but for patient with ESI 2,3,4 the statistical data shows almost double number of these patients coming in the day time compare to night shifts. The ambulances transports only 36% of patients, most of them came by others resources. Conclusions. The international trend of overcrowding ED is present also in Romanian ED's, the patients are usually in emergent or urgent status, due to a traumatic process or, due to worsening of a chronically disease. Further studies and protocols are necessary in order to prevent overcrowding and to improve patient's management.

#19232 : Incidence of hyperkalemia in the emergency department : a 10 year retrospective study**Authors:**

Loïc Lemoine (1), Emmanuel Montassier (2), Francois Javaudin (1), Damien Masson (3), Quentin Le Bastard (1), Eric Batard (1)

1. Urgences, CHU Nantes, Nantes, FRANCE
2. urgences, CHU Nantes, Nantes, FRANCE
3. Department of Biochemistry, Nantes University Hospital, Nantes, FRANCE

Keywords: Emergency department / Hyperkalemia / Serum potassium

Abstract :

Hyperkalemia is a common electrolyte disorder, defined by a value of 4.5 mmol/L or higher and severe hyperkalemia defined as a serum potassium level of 6.0 mmol/L or higher. People with chronic kidney disease, heart failure, diabetes or hypertension are particularly at risk. Data on hyperkalemia frequency in the emergency department (ED) is sparse.

To estimate the incidence of hyperkalemia in our ED we performed a retrospective analysis of potassium measurements over ten years.

We included patients admitted with measurement of serum potassium between 2008 January 1st and 2017 December 31st.

A total of 317251 potassium measurements were performed in our ED during that period. Overall, 41598 (13%) had hyperkalemia (serum potassium higher than 4,5mmol/L) representing 29532 patients and 2341 (0,8) had severe hyperkalemia (serum potassium higher than 6,0mmol/L). Among hyperkalemias, the median value was 4,8 mmol/L with a maximum serum potassium level measured of 10,4 mmol/L. The annual incidence varied from 5 to 7,1 %. 299 (16,4%) patients had several potassium measurements for the same episode of severe hyperkalemia. 114 patients (6,3%) had several admissions for several episodes of severe hyperkalemia. The median number of admissions in these patients was 2,5.

In conclusion the percentage of hyperkalemia in our ED during the last ten years was 13% of all potassium measurement. The incidence was relatively stable over years. We found that 6% of our patients were particularly at risk of recurrent episodes of severe hyperkalemia.

#19234 : Point-of-care Ultrasound role in the modern Emergency Physician's practice in Romania**Authors:**

Catalin Bouros (1), MIHAELA CORLADE (2), Ovidiu Tudor Popa (3), Paul Nedelea (3), Andrei Hancu (4), Gabriela Grigoras (3), Anca Haisan (5), Diana Cimpoesu (3)

1. Resident in Emergency Medicine, Clinical County Emergency Hospital "Sf. Spiridon" Iasi, Iasi, ROMANIA
2. Département d'urgence, UPU - SMURD, Hôpital Clinique Universitaire « St. Spiridon » Iasi, UMF « Gr.T.Popa » Iasi, Iasi, ROMANIA
3. Emergency Department, University of Medicine and Pharmacy Gr.T. Popa Iasi, Iasi, ROMANIA
4. Emergency Dept, Emergency Hospital Sf. Spiridon, Iasi, ROMANIA
5. Emergency Dept, University of Medicine and Pharmacy, Iasi, ROMANIA

Keywords: Ultrasound, Training, Emergency Department, Resuscitation

Abstract :**BACKGROUND:**

Point-of-care ultrasound (POCUS) offers additive value in the diagnosis and treatment of emergency and/or critically ill patients. To help spread this medical practice in Romania within the nonradiologist community, under EUSEM guidance we conducted a POCUS course. The course was done in a single major university medical centre of Romania under the guidance of established POCUS faculty.

OBJECTIVE:

Our aim was to characterize the current practice of emergency physician and the effect of the POCUS course on the practice of junior, registrar and consultant level doctors that had no or not enough previous ultrasound (US) experience.

METHODS:

A 11-question anonymous survey was emailed to 40 graduates over a 4-week period, before the course and 2 months after attending. All the participants had as their primary speciality Emergency Medicine.

No incentives were provided for completion of the questionnaire. Descriptive statistics are reported.

RESULTS:

A total of 21 participants completed the study for a response rate of 52.5%.

For the vast majority of them, this was the first ultrasonography course they attended, but 28.7% attended an US course previously.

Out of the doctors that completed the questionnaire 66,66 % were registrars, 28,58% consultants and just 4,76% junior doctors. Interesting note is the fact that although without previous formal training 71,42% were already using US in their practice, this percentage increasing to 100% after attending the course. Those that used US in their daily practice used it quite rarely, 47,61% reporting using it less than 2 times per month, justifying this due to lack of time (66,66%) but also lack of legislation to support them (28,57%). 33.33% of the participants also named the lack of trust of other specialities as an important discouragement. The main situations in which US was used in the ED was to check for cardiac activity in PEA (76,19%), detecting free intraabdominal fluid in trauma (57,14%) and facilitating invasive procedures such as central venous access and pleural taps. A majority also used POCUS to guide them in the ALS protocols especially in reversible cases such as hypothermia and cardiac tamponade but also in making decisions to stop resuscitation.

The second questionnaire showed an increase in US usage in the ED but the users did not rely on their findings and requested second opinions in severe cases.

CONCLUSION: The analysis shows that the interest in POCUS, especially in the Emergency Department, is quite high in Romania. This tendency is more common in the younger generation of doctors (juniors and registrars) who prefer to use it in answering quick FAST questions but also aiding in making tough ALS/ATLS protocol decisions and in invasive procedures. Further similar undertakings will probably open ground for more US based protocols making this practice more common in Romania and Eastern European countries.

Emergency ultrasound should be introduced into an emergency medical service area as a diagnostic modality that provides benefits to patients. Emergency physicians have to be specifically trained and to participate in continuous education activities.

#19235 : Updated and customized protocols for dentists to be used in most frequent emergency situations**Authors:**

Dumitru Șutoi (1), Șerban Andrei Popa (2), Codrin-Dragoș Tocuț (2), Claudiu Bârsac (2), Cosmin Librimir (3), Cosmin Trebuian (3), Ovidiu Alexandru Mederle (3)

1. Emergency Department, UMFT Victor Babes, Timisoara, ROMANIA
2. Emergency Department, Clinical regional hospital „Pius Brînzeu” , Timisoara, ROMANIA
3. Emergency Department, University of Medicine and Pharmacy ”Victor Babeș” from Timișoara, Timisoara, ROMANIA

Keywords: updated protocols, customized protocols, emergency situations

Abstract :

There are numerous emergency situations, possible life-threatening situations which can occur in the dental office at any time during routine procedures.

Despite the high frequency of such incidents, in Romania there are no standardized protocols which can help the dentist to manage an emergency situation.

This is the reason why our project is to implement such protocols for the management of the most frequent emergency situations at the dentistry office:

- Situations which involve loss of consciousness (cardiac arrest, syncope, hypoglycemia, seizures);
- Anaphylactic shock;
- Major haemorrhage;
- Hypertensive crisis.

Although dental practitioners are theoretically prepared to intervene when an emergency event occurs, the lack of experience can lead to an improper response which put the patient's life in danger. For this reason, by developing standardized step-by-step protocols the dental practitioners can be guided through until the specialized medical team arrives. Furthermore, simulation by workshops for this emergency situations will be beneficial for practitioners.

The lack of basic standard equipment for the evaluation and maintenance of vital functions can be detrimental in such situations, thus another goal for developing these protocols is to encourage purchasing this equipment.

In the future, this project could encourage the development of national protocols officially approved at national level, consequently every dental practitioner will have the minimum necessary first aid equipment and skills to deal with most emergency situations encountered at the workplace

We believe that the development and implementation at national level of these protocols represents a promising start, that will increase not only the level of training of dental professional, but also the safety of the patient in the event of an emergency.

#19237 : Diabetes and hospitalization for acute exacerbation of chronic obstructive pulmonary disease : an observational study

Authors:

Hadil MHADHBI (1), Yosra YAHYA (2), Khédija ZAUCHE (2), Nadia ZAOUAK (2), Abdelwaheb MGHIRBI (2), Hamida MAGHRAOUI (2), Ramla BACCOUCHE (2), Kamel MAJED (2)

1. HMPIT, HMPIT, Tunis , TUNISIA

2. les urgences , La Rabta, Tunis, TUNISIA

Keywords: Diabetes,acute exacerbation,chronic obstructive pulmonary disease,prognosis

Abstract :

Background:

Diabetes is a common comorbidity in patients with Chronic Obstructive Pulmonary Disease (COPD) and seems to influence the management of the disease. The aim of our study was to assess the incidence of diabetes in COPD patients and to highlight the link between the existence of diabetes and the severity of the exacerbation.

Methods: We conducted a prospective observational study in the emergency department(ED) over a 6-month period. We included all patients older than 40 years known COPD admitted to the(ED) for AECOPD. We divided our patients into 2 groups: Group A (no diabetes); Group B (presence of diabetes).The endpoint was in-hospital mortality.

Results: 120 patients were included. The overall incidence of diabetes was 41.7% The group of diabetic patients was comparable to the group of non-diabetic patients for age, sex ratio and Charlson index of comorbidity. During the study period, 17 patients died of which 12 (70.58%) were diabetic patients and 5 (29.41) non-diabetic patients ($p = 0.01$) (OR 2.4, 95% CI 1.9-3.0).

Discussion & Conclusions: COPD is associated with important chronic comorbidities including diabetes. In the present study the prevalence of diabetes was greater than that found in the literature and diabetes was associated with a higher mortality. Larger studies are needed to confirm this relationship and to evaluate the clinical impact of diabetes management on morbidity and mortality of COPD.

#19241 : Blood pressure in the emergency department and incident cardiovascular disease: a retrospective cohort study**Authors:**

Pontus Oras (1), Henrike Häbel (2), Per Skoglund (3), Per Svensson (4)

1. Medical student, Karolinska Institutet, Stockholm, SWEDEN
2. Institute of Environmental Medicine, Karolinska Institutet, Stockholm, SWEDEN
3. Department of Medicine, Karolinska Institutet & Palliativt Centrum, Stockholms Sjukhem, Stockholm, SWEDEN
4. Department of Clinical Science and Education, Södersjukhuset & Karolinska Institutet, Stockholm, SWEDEN

Keywords: blood pressure, emergency department, atherosclerotic cardiovascular disease, myocardial infarction, stroke, long-term prognosis

Abstract :

Background: High blood pressure (BP) is an established risk factor for cardiovascular disease (CVD), but hypertension remains a global challenge. Prevention, diagnosis, treatment and control of hypertension needs improvement. In the emergency department (ED), BP is measured on almost every patient in order to assess patients' condition in the short-term, and many patients have BP levels above the threshold for hypertension. It is still unknown if BP in the ED is associated with long-term prognosis or how this BPs should be handled. The purpose of this study was to explore if BP obtained in the ED is associated with incident atherosclerotic cardiovascular disease (ASCVD), myocardial infarction (MI), or stroke.

Methods: All patients who visited two university hospital EDs between 2010 to 2016 with an obtained BP in the ED were included and studied regarding incident ASCVD, MI, and stroke. Systolic BP (SBP) and diastolic BP (DBP) were obtained through EDs databases and the endpoint diagnosis from the Swedish National Patient Register and Cause of Death Register. BP was categorized based on the definition of BP and hypertension grades. Cox proportional hazard regression was used in crude and adjusted models to estimate hazard ratios (HR), confidence interval (CI) and cumulative incidence for ASCVD, MI, and stroke. Age, sex, history of hypertension, CVD and diabetes mellitus were adjusted for, in adjusted models.

Results: A total of 300,272 patients were followed for a median of 42 months (range 0-84 months). Incident ASCVD occurred in 8,914 cases (MI 4,709 events and stroke 6,700 events). BP levels above normal (SBP: >120-129 mmHg, DBP: >80-84 mmHg) had a progressively increased association with ASCVD, MI, and stroke. In the adjusted model, SBP that corresponded to hypertension grade 1, 2, and 3 had a statistically significant association with ASCVD (SBP 140-159 mmHg: HR 1.15, 95% CI 1.06-1.24, 160-179 mmHg: HR 1.35, 95% CI 1.24-1.46, ≥ 180 mmHg: HR 1.59, 95% CI 1.46-1.73). Similar results were observed for DBP. DBP in the high normal category (85-89 mmHg), had a statistically significant association with ASCVD (HR 1.15, 95% CI 1.06-1.25) and stroke (HR 1.17, 95% CI 1.07-1.29). In the crude model, SBP ≥ 180 mmHg had the strongest association with ASCVD (HR 5.50, 95% CI 5.06-5.99). Patients with no history of hypertension had a stronger association with ASCVD (SBP ≥ 180 mmHg: HR 2.01, 95% CI 1.75-2.32), compared to patients with a history of hypertension (SBP ≥ 180 mmHg: HR 1.34, 95% CI 1.20-1.49). There was a similar association with ASCVD between directly discharged (SBP ≥ 180 mmHg: HR 1.55, 95% CI 1.36-1.76) and admitted patients (SBP ≥ 180 mmHg: HR 1.74, 95% CI 1.55-1.96). The six-year cumulative incidence of ASCVD was approximately 12% for SBP ≥ 180 mmHg compared to 2% for normal SBP (120-129 mmHg).

Conclusions: BP in the ED is associated with incident ASCVD, MI, and stroke with a stronger association for higher BP levels. High BP recordings in EDs should not be disregarded as isolated events, but treatment should be initiated, and patients should be referred to primary care for hypertension investigation.

Trial Registration / Funding Information (only) :

Trial registration submitted, awaiting registration ID. The authors received no financial support for the research, authorship, and publication of this abstract.

#19242 : New mindset for a new beginning: innovative hands – on training programme to improve critical emergency medicine nurses' airway management skills**Authors:**

Dinka Lulic (1), Saqr AlHemeiri (2), AlAnood Bin Sulaiman (2), Afaf Sayed Jaafer (2), Mirna Diab (2), Mahmoud Mustafa (3), Ileana Lulic (2)

1. Department of Emergency Medicine, University Hospital Centre Zagreb, Zagreb, CROATIA
2. Training and Development Center, Ministry of Health and Prevention, Sharjah, UNITED ARAB EMIRATES
3. Sudan Resuscitation Council, Human Resus Organisation, Khartoum, SUDAN

Keywords: Critical Emergency Medicine, Airway Management

Abstract :

Background: Airway management represents a cornerstone of Critical Emergency Medicine (CREM) specialty, where all team members are skilled and comfortable in providing immediate airway function support. CREM concept of multidisciplinary team approach, throughout the course of high acuity airway emergencies, brought nurses on the verge of the dawn of a new golden era. Following updated Difficult Airway Society (DAS) 2015 Guidelines, CREM nurses, depending on their individual experience, training and comfort of use, earned one of the central and crucial parts in well-established airway crisis framework. Correspondingly, United Arab Emirates (UAE) Ministry of Health and Prevention (MOHAP) highlighted nurses' role in CREM setting as pivotal, which lead to implementation of innovative airway management training programme – Airway Basics Course for CRITICAL Emergency Medicine (ABC – CREM), principally focusing on airway skills hands – on training, accompanied with non – technical skills (NTS) teaching. The objective of our study was to identify the ABC – CREM programme growth in UAE since inaugural course held at the MOHAP Training and Development Center (TDC) – Sharjah, in November 2018. Additionally, we aimed to investigate UAE MOHAP CREM nurses' optimal practice during difficult airway (DA) cases. **Methods:** On the 15th of May 2019 MOHAP TDC database search was performed. Alongside, prior to enrolment into ABC – CREM programme all nurses completed a survey, which consisted of demographic data and 10 open questions regarding management of the emergent DA their encounter in daily practice. **Results:** Up to date, 15 ABC – CREM programmes were successfully completed in UAE. A total of 145 (56%) female nurses, aged from 25 to 58 years (median 38), underwent airway skills hands – on training and NTS teaching. The majority of candidates were from Emergency Department (52%), followed by nurses working in Intensive Care Units (48%). More than two thirds (88%) of nurses are familiar with DA algorithms instituted in their workplace. However, less than a third (15%) of these institutional DA algorithms are in concordance with DAS 2015 Guidelines. **Discussion & Conclusions:** Our results exhibit positive growth of the CREM based airway management training programme in UAE, spotlighting CREM nurses as a natural extension of the traditional anaesthetists' role during airway emergencies. We strongly encourage embodiment of CREM based airway management training programmes more visibly into nurses' curriculum to secure early successful vital function expertise access. Furthermore, the obtained data suggests our CREM nurses have a strategy of utilising optimal emergency DA algorithms. However, we recommend directing resources more rigorously towards implementation and training of updated DAS 2015 Guidelines, which provide a sequential series of plans to be used when dealing with DA, into CREM nurses curricula.

#19243 : Vernakalant and rhythm control in an Emergency Department**Authors:**

GABRIEL PUCHE PALAO (1), JOSE ANDRES SANCHEZ NICOLAS (1), PAULA LAZARO ARAGUES (1), RAUL LESMES SILVENTE (1), MARIA ENCARNACION SANCHEZ CANOVAS (1), Pascual Piñera Salmerón (2)

1. EMERGENCY MEDICINE, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN
2. SERVICIO DE URGENCIAS, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN

Keywords: VERNAKALANT, ATRIAL FIBRILLATION, TREATMENT

Abstract :

INTRODUCTION

Atrial fibrillation (AF) is the most frequently arrhythmia detected in emergency services (ED), accounts for approximately one third of hospital admissions due to cardiac rhythm alterations and implies a high morbidity and mortality for the patient, increasing the risk of heart failure, embolic phenomena and death of patients. Its treatment is based on two fundamental strategies, on the one hand the control of the heart rate and on the other the control of the rhythm that can be done both pharmacologically and electrically. Vernakalant is antiarrhythmic drug included in class III, it has selective atrial action through the blocking of potassium channels that are activated when the heart rate increases, allowing the reversion to sinus rhythm (SR). The shorter the time from the beginning of the arrhythmia until its administration and the higher the heart rate, the more effective it is.

OBJECTIVE: Determine the Vernakalant's effectiveness our hospital in terms of rhythm control (reversion to SR).

METHOD:

A prospective study, all patients who consulted for AF in the SU of the Hospital Reina Sofía during the years 2015-2018 and received treatment for rhythm control with Vernakalant were included. The variables included in the study: year of consultation, sex, age, previous treatment with Vernakalant, reversion to sinus rhythm after treatment, presence of other rhythm control methods later and if they were effective.

RESULTS

During the years 2015-2018, 30 patients received Vernakalant in our emergency department, 4 patients during 2015, 7 during 2016, 13 during 2017 and 6 during 2018.

56.67% of the patients were women and 43.33% men. The mean age was 64.9 years.

25 of the patients included in the study had previous episodes of AF while for 5 of them it was the first episode. None of them had received prior treatment with Vernakalant.

The mean heart rate of patients on admission to the ED was 139 bpm. 76,6% (23 patients) of patients treated with Vernakalant reverted to sinus rhythm, 91.3% did so after the first dose of this, while the remaining 8.7% required a second dose of drug.

Of the 7 patients who failed to control the rhythm with the drug: Six patients underwent electrical cardioversion (CVE), with rhythm control only 2 patients, after the failure of this the patients were treated with beta-blockers and one patient refused to perform CVE and received treatment with beta-blockers.

CONCLUSIONS

1.- Vernakalant is an antiarrhythmic drug that has been shown to be effective in controlling the rhythm of patients who consult in the ED for AF, reaching more than ¾ of patients in sinus rhythm.

2.- Its greater effectiveness for rhythm control is achieved in patients with a short period of evolution of AF (AF of recent onset <72h) and high heart rates.

3.- It should not be used in the case of patients with structural cardiopathy and moderate-severe valvular disease, obstructive cardiomyopathy, pericardial tamponade or prolongation of the QT interval.

The main disadvantage of the treatment with Vernakalant is its high cost compared to other antiarrhythmics which makes it not available in some hospitals.

#19245 : Vernakalant and its adverse effects. Experience in our Emergency Service**Authors:**

GABRIEL PUCHE PALAO (1), JOSE ANDRES SANCHEZ NICOLAS (1), PAULA LAZARO ARAGUES (1), RAUL LESMES SILVENTE (1), MARIA ENCARNACION SANCHEZ CANOVAS (1), Pascual Piñera Salmerón (2)

1. EMERGENCY MEDICINE, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN
2. SERVICIO DE URGENCIAS, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN

Keywords: VERNAKALANT, ATRIAL FIBRILLATION, ADVERSE EFFECTS

Abstract :

INTRODUCTION: Atrial fibrillation (AF) is the arrhythmia most frequently detected in hospital emergency services (ED), accounts for approximately one third of hospital admissions due to cardiac rhythm alterations and implies a high morbidity and mortality for the patient, increasing the risk of heart failure, embolic phenomena and death of patients. Its treatment is based on two fundamental strategies, on the one hand the control of the heart rate and on the other the control of the rhythm that can be done both pharmacologically and electrically. Vernakalant is an antiarrhythmic drug included in class III, it has selective atrial action through the blocking of potassium channels that are activated when the heart rate increases, allowing the reversion to sinus rhythm (RS). Among its most frequent adverse reactions are dysgeusia, paresthesias, hypotension and electrocardiographic alterations such as lengthening of the QT or the onset of atrial flutter.

OBJECTIVE To identify the presence and frequency of adverse effects associated with rhythm control with Vernakalant in our SU

METHOD A prospective study with all patients who consulted for AF in our ED during the years 2015-2018 and received treatment for rhythm control with Vernakalant. The variables included in the study: year of consultation, sex, age and presence of adverse effects

RESULTS

During the years 2015-2018, 30 patients received Vernakalant in our emergency department, 4 patients during 2015, 7 during 2016, 13 during 2017 and 6 during 2018.

56.67% of the patients were women and 43.33% were men. The mean age of the patients was 64.9 years.

During the administration of the treatment with Vernakalant, adverse effects were observed in 3 of our patients (10%), one patient presented nausea and isolated vomiting of alimentary content that yielded with the administration of metoclopramide, another patient presented generalized pruritus without angioedema or hemodynamic compromise. and finally the last one presented an episode of bradycardia, both in the case of pruritus and in that of bradycardia it was necessary to suspend the administration of the drug (6.33% of the treated patients) starting the treatment in the case of pruritus with beta-blockers.

CONCLUSIONS

- 1.- Vernakalant is an antiarrhythmic drug whose main adverse effects are bradycardia, hypotension, electrocardiographic alterations such as QT flattening and the presence of atrial flutter and hypotension.
- 2.- Of all the effects detailed in the previous point the lengthening of the QT is the least likely adverse effect due to the selectivity of the drug through the atrium.
- 3.- It seems reasonable to use it as the treatment of choice in patients without structural heart disease who have a recent onset of AF (<72h) given its effectiveness and the low proportion of serious adverse effects.

#19246 : Utility of a Regional Poison Center in Care of Patients Seen at Emergency Departments

Authors:

Saumitra Rege (1), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA

Keywords: Poison Center, ED Visits, Opioids, Health policy

Abstract :

Background: Poison control centers (PCs) are an essential component of the healthcare system and providing clinical management and improving patient outcomes in cases of toxic exposures. PCs have also demonstrated utility in decreasing the healthcare costs by reducing the use of emergency medical services and length of stay in hospitals. Apart from the clinical expertise, PCs also provide valuable information regarding drugs including medication identification, dosage, interactions, storage, and disposal. This study analyzed the trends in exposure calls received by the PCs from emergency departments (EDs).

Methods: The case management software, Toxicall, was queried for human exposure calls from EDs between 2016 and 2018. We descriptively assessed the relevant demographic characteristics. Trends in call frequencies and rates (per 100,000) were analyzed using Poisson regression methods. Percent changes from the first year of the study (2016) were reported with the corresponding 95% confidence intervals (95% CI).

Results: The regional poison center serves over 2.4 million people and 45 hospitals within Southwest Virginia, with the specialists handling an average of 58,000 calls every year. Between 2016 and 2018, there were 9,767 calls that were received from the EDs, with 74% of these reporting an acute exposure to a toxic substance. Most exposures occurred at the patients' residence (87.2%). Females (54%) were predominant in this sample. Among the cases, 23.1% were children under 6 years of age while 8.2% were individuals above 60 years of age. Unintentional reasons accounted for 47.9% cases, while suspected suicides were responsible for 36.2% calls. Ingestion (77.6%) was the most common route of exposure followed by inhalation (7.2%). Unintentional reasons accounted for majority of cases under 6 years of age, while intentional reasons caused 83% of teenage exposures. Intentional exposures were more common among the adult age groups. Serious adverse events were uncommon in our sample, with 10% cases exhibiting major clinical outcomes and only 10 fealties reported in the 3 year study period. Neurological (28.9%) and cardiovascular (19.4%) effects were most pronounced. Approximately one-fourth of the patients were admitted to the psychiatric facility. Exposures to pharmaceuticals like acetaminophen (7.6%) were frequent. Exposures to alcoholic beverages (8%) were also common. Fluids and IV were used as a therapy in 40% cases. While the frequency of calls received by the PC from EDs decreased from 3,461 in 2016 to 3,302 in 2018, the rate of such calls per 1,000 calls received by the PC increased significantly by 5.7% (95% CI: 2.3%, 8.7%, $p < 0.011$) from 169.9 to 179.6 during the study period.

Conclusions: Rate of calls received by the PC from EDs during the study period increased. The PCs, a reliable source of information, are being increasingly utilized for the management of complex poisoning cases. PCs provide the EDs with immediate access to the experts who can help in the diagnosis, management, and treatment of toxic exposures and drug overdoses. This triage of cases ensures an optimal level of care leading to reductions in hospitalizations and improving the quality of healthcare.

Trial Registration / Funding Information (only) :

n/a

#19247 : The retrospective analysis of the risk factors associated with STEMI for romanian patients – The 2018 experience

Authors:

Oana Andrada ALEXIU (1), Luisa Corina SIMION (1), Bogdan Mihai OPRITA (1)

1. Medical Service, Emergency Clinic Hospital, Bucharest, ROMANIA

Keywords: Cardiovascular disease, STEMI, ST-segment elevation, myocardial infarction, risk factors, 2018

Abstract :**Background.**

Cardiovascular disease (CVD) remains the most common cause of death worldwide, with the 2013 Global Burden of Disease (GBD) study estimating that CVD caused 17.3 million deaths globally and accounted for 31.5% of all deaths. CVD causes more than 50% of deaths in women in 29 countries, mostly in Central and Eastern Europe. In nine countries CVD causes more than 50% of deaths in men: Azerbaijan, Belarus, Bulgaria, Georgia, Montenegro, Romania, FYR Macedonia, Romania, Ukraine and Uzbekistan. In the last report for Romania between 1997 and 2009 the Romanian Registry for ST segment elevation myocardial infarction (RO-STEMI) included 19510 patients.

The aim of this study was to investigate the demographic data and risk factors for ST-segment elevation myocardial infarction in Romanian patients in order to make some preliminary conclusions, comparing these results

with the one obtained in this in our clinic in previous stages of the STEMI study and with the results from other studies.

Participants and methods.

We included in this study, 132 patients presented, evaluated and treated to Emergency Clinic Hospital between January 2018 – December 2018, and we collected the demographic data (e.g. age, gender, region, etc.) and risk factors (e.g. diabetes, hypertension, obesity, smoking etc.). For AMI we used the rapid test (e.g. GEM PREMIER 3500, SAMSUNG, SIEMENS, CONCILE, DPU-414 THERMAL PRINTER, URILYZER 100, GEM PREMIER 4000) and exhaustive analysis was made by the laboratory using different types of machines and technology (e.g. CELLTAC-F, VITROS_FS5.15, ACL TOP 500 etc.) to confirm the diagnosis. The data were statistically processed by SPSS ver.20.

Results.

In our study, we included 132 patients with cardiovascular / coronary disease. We notice that the ratio between men vs. women was 69.7% vs. 30.3%.

The age of the patients varied between 29 – 89 years. We observed for this year the age of onset has decreased, 59.85% of patients have the age under 65 years. The most frequent risk factors include smoking, hypertension, dyslipidemia and diabetes. The mean age was 61,4 years and mean age by sex was: for M(en) – 58,6 years and for W(omen) – 67,4.

Conclusion.

For our study we observed an ascending trend in patients with diabetes, arterial hypertension and dyslipidaemia.

Also, the age of onset is decreasing year by year, mostly on men, the mean age of the onset for men was under 60 years for 2018, which should become an important signal for new prevention programs and studies.

#19248 : Prognostic value of leukoglycemic index in acute exacerbation of chronic obstructive pulmonary disease: A prospective observational study**Authors:**

Hadil MHADHBI (1), Khédija ZAOUCHE (2), Yosra YAHYA (2), Abdelrahim ACHOURI (3), Abdelwaheb MGHIRBI (2), Hamida MAGHRAOUI (2), Radhia BOUBAKER (3), Kamel MAJED (2)

1. HMPIT, HMPIT, Tunis , TUNISIA
2. les urgences , La Rabta, Tunis, TUNISIA
3. la Rabta emergency departement, la rabta, tunis, TUNISIA

Keywords: acute exacerbation, chronic obstructive pulmonary disease, leukoglycemic index , prognosis

Abstract :

Background: Several biological markers are used to predict poor outcomes in acute exacerbation of chronic obstructive pulmonary disease (AECOPD). Each of Glycemia and white blood count are known as predictive factors of poor outcomes in AECOPD. The combination of the two could have more sensitivity and specificity value ; The aim of our study was to evaluate the prognosis value of leukoglycemic index (LGI) in patients admitted to the emergency department (ED) with AECOPD.

Methods: Prospective observational study over one year. Inclusion of patients admitted to the ED with AECOPD. The primary endpoints were the need for mechanical ventilation (MV), and 30-day mortality. Test performance was assessed using the area under the receiver operating characteristic curve.

Results: 120 patients were enrolled. Mean age was 63 +/-8 years. Men n (%) was 64 (52, 9). Mean LGI was 12, 10 +/- 7, 14. The LGI area under the receiver operating characteristic (ROC) curve (AUC) for the use of (MV) and for the one -month mortality were respectively: 0,74 ;p=0,01; IC 95% [0,58- 0,90] and 0,83;p=0,000; IC 95% [0,69- 0,96]. The best prognostic cut-off value for LGI was 8. In univariate analysis LGI > 8 was associated to 2.1 threshold risk of MV (p=0.001; IC 95% [1.386-3.528] and 4.4 threshold risk of death (p=0.001; IC 95% [1.497-8.839]).

Discussion & Conclusions:

Despite the relatively small number of patients and the fact that the study was conducted only at one hospital, our findings might assist the risk stratification

of AECOPD in the ED, contributing to a better management .At the same time, further medical complications as a result of downgrading the risk of patients with AECOPD in the ED could also be avoided. The LGI is a good prognostic index easy to calculate with a good prognostic value . It can predict poor outcomes during the acute exacerbation.

#19249 : BACTERAEMIA IN EMERGENCY SERVICE. ASSOCIATION OF MORTALITY AND SYSTEMIC INFLAMMATORY RESPONSE SYNDROME (SIRS).**Authors:**

Sergio Antonio Pastor Marín (1), Elena del Carmen Martínez Cánovas (1), GAELI BORNAS CAYUELA (2), ALBA HERNANDEZ SANCHEZ (2), JOSE ANDRES SANCHEZ NICOLAS (2), MARIA ENCARNACION SANCHEZ CANOVAS (2), Pascual Piñera Salmerón (1)

1. SERVICIO DE URGENCIAS, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN
2. EMERGENCY MEDICINE, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN

Keywords: Bacteraemia, Systemic Inflammatory Response Syndrome, Mortality.

Abstract :

Background: Bacteremia is defined as the presence of viable bacteria in the blood and when they cause clinical manifestations, a systemic inflammatory response syndrome may occur. When this inflammatory response becomes exaggerated or causes some organic dysfunction it becomes a sepsis. Sepsis has a high mortality oscillating between 25-60% of the cases, therefore a rapid detection and action is very important, specially in the emergency department. 10.4% of the patients who come to the emergency services are diagnosed of an infectious process, of them, 5-10% meet the diagnostic criteria of sepsis. 29% of sepsis are transformed into severe and 9% into septic shock.

Goals: The main objective is to relate mortality in patients with a positive blood culture that meets the criteria of systemic inflammatory response syndrome (SIRS). As secondary objective is to establish the association between the positive SIRS criteria and the level of lactic acid obtained by venous blood gases.

Methods: This is a descriptive, observational and cross-sectional study conducted at the General University Hospital Reina Sofia of Murcia. The hospital attends an average of 260 daily emergencies and covers a target population of 200,000 inhabitants. Our sample consists of all patients who attended the emergency service from January 1st 2017 to December 31st 2017 and had a positive blood culture. In the end fulfilling the inclusion criteria we obtained a sample size of 131. The variables to be measured would be: age, sex, clinical and analytical parameters of SIRS ($T > 38^\circ$ or $< 36^\circ$, $FR > 20$, leukocytes $> 12,000$ or $< 4,000$, $FC > 90$, lactic acid > 2) and mortality. We consider patients who meet SIRS criteria (T^a , FR , FC and leukocytes) to have 2 or more positive values. For data analysis, we used the IBM SPSS program, version 21.0, with the X square test and the student t test for independent samples.

Results: Of the 131 patients collected, 65.6% (86 patients) met SIRS criteria (2 or more positive). Of these patients, 57% are men and the remaining 43% are women. 53.5% of patients with SIRS criteria are under 76 years of age. The total percentage of deceased patients in our sample is 9.4% (14) and, of these, 85.7% (12) met SIRS criteria, which estimates an OR of 3.2 (0.7-15), with a value of $p = 0.11$. The mean lactate in patients without SIRS criteria is 2.29, while the average lactate in patients with SIRS is 2.80, p value = 0.13. In addition, 62.7% of patients with SIRS criteria (32 patients) had high lactate levels, which estimates an OR of 2.1 (0.8-5.2), with a value of $p = 0.12$.

Conclusions: The probability of dying of a patient with bacteremia and positive SIRS criteria is 3 times higher than that of the patient who does not comply. The probability of having a pathological lactate level in patients with SIRS is 2 times higher than in patients without SIRS criteria.

#19250 : CHARACTERISTICS OF PATIENTS WITH BACTERIEMIA AND THE RELATIONSHIP WITH MORTALITY IN THE EMERGENCY SERVICE**Authors:**

Elena del Carmen Martínez Cánovas (1), Sergio Antonio Pastor Marín (1), ALBAHERNANDEZ SANCHEZ (2), GAELIA BORNASCAYUELA (2), JOSE ANDRES SANCHEZ NICOLAS (2), MARIA ENCARNACION SANCHEZ CANOVAS (2), Pascual Piñera Salmerón (1)

1. SERVICIO DE URGENCIAS, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN
2. EMERGENCY MEDICINE, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN

Keywords: Bacteraemia, Emergency Department, Mortality.

Abstract :**INTRODUCTION:**

Bacteremia is defined as the presence of viable bacteria in the blood when they cause clinical manifestations, a systemic inflammatory response syndrome may occur. When this inflammatory response becomes exaggerated or causes some organic dysfunction it becomes a sepsis. Sepsis has a high mortality oscillating between 25-60% of the cases, therefore a rapid detection and action is very important. 10.4% of the patients who come to the hospital emergency services are diagnosed of an infectious process, of them, 5-10% meet the diagnostic criteria of sepsis. 29% of sepsis are transformed into severe and 9% into septic shock.

OBJECTIVE:

The objective of our study is to relate the characteristics of the patient (age and sex) and the microorganisms obtained in the blood cultures to obtain their prevalence and relationship with the mortality of the patient.

MATERIAL AND METHODS

This is a descriptive, observational and cross-sectional study conducted at the General University Hospital Reina Sofia of Murcia. The hospital attends an average of 260 daily emergencies and covers a target population of 200,000 inhabitants. For the selection of our sample, all patients who had attended the emergency service from January 1, 2017 to December 31, 2017 and had a positive blood culture were used. We obtained a sample size of 131. The variables to measure would be: age, sex, microorganism, mortality, and re-entry. For the analysis of the data we have used the IBM SPSS program, version 21.0.

RESULTS

Out of the 131 patients collected, the average age was 72.2 years and the median of 76 years (minimum of 11, maximum of 97). 55.7% (73) were male and 44.3% (58) were female. We found a mortality of 9.4% (14), 65% (9) of them occurred in men and 35% (5) in women. Of the 14 deaths, 12 of them occurred in patients older than 70 years. The microorganism most frequently isolated in blood cultures was *E. coli*, which was sensitive with 44% (49), followed by methylenesensitive staphylococcus aureus (SAMS) with 12% (13). Of all the isolates, the one that produced the highest mortality was the SAMS with 29%, followed by the sensitive *E. coli* and the streptococcus pneumoniae with 21%, in 14% of the cases no microorganism was isolated in the blood culture. Of the patients discharged, 9% readmitted and 33% of them died later.

CONCLUSIONS

From our data we can conclude that of those patients with positive blood culture in the emergency department have a mortality of approximately 10%, being more frequent in elderly men. The most frequently isolated microorganism has been *E. coli*, but the one with the highest mortality has been the SAMS with 24%.

#19252 : Identifying low risk trauma patients to avoid whole-body CT prescription in the emergency department:an observational study**Authors:**

Mehdi Taalba (1), Clotilde Bouvy (1), Andre Gillibert (2), Luc-Marie Joly (3), Stefan Darmoni (4, 5), Matthieu Schuers (6)

1. Urgences, CHU de Rouen, Rouen, FRANCE
2. Santé publique - Biostatistiques, CHU de Rouen, Rouen, FRANCE
3. Urgences Adultes, CHU de Rouen, Rouen, FRANCE
4. Département d'Informatique et Information Médicales, CHU de Rouen, Rouen, FRANCE
5. Inserm, Université de la Sorbonne , LIMICS, Paris, FRANCE
6. Département de médecine générale, CHU de Rouen, Rouen, FRANCE

Keywords: whole-body CT, polytraumatized, AIS, ISS, relevance, predictive model

Abstract :

Background: The Whole-Body computed tomography (WBCT) is a mainstay that guides the management of severely traumatized patients. However, its systematic use in the emergency department results in a high proportion of normal examinations. Its direct cost is significant and the irradiation of 20mSV exposes an adult to a risk of 1 in 1000 to develop cancer. The purpose of this study is to determine predictive criteria for normal examinations in trauma patients who have had an WBCT to rationalize its use. **Methods:** A monocentric retrospective study included trauma patients over 16 years of age for whom a WBCT was performed during their visit to the emergency department from 2016 to 2018. The endpoint for asserting the abnormality of the WBCT was at least one injury categorized 2 by the Abbreviated Injury Scale. Anamnestic, clinical, radiological findings and patient management data were collected. Two approaches were used. The first was to define criteria based on scientific data to define a low-risk patient profile and to test the discriminating ability of this set of criteria. The second approach consisted in performing a multivariate analysis with a logistic regression model. On this occasion, the population was divided into two random samples corresponding to 50% of the initial population, one to create the model and the other to test it. The objective was to define a low-risk patient profile by testing the discriminating ability of this set of criteria to avoid the WBCT. **Results:** Out of 810 patients included 41% had an abnormal WBCT (n=329). Seventeen "a priori" criteria were tested simultaneously. The test performance showed a sensitivity of 96.9%, specificity of 25.8%, negative predictive value of 89.7%, positive predictive value of 48.2%. This method avoided one in seven WBCT. In the multivariate logistic regression model, 9 variables were selected. The performance of this model showed a sensitivity of 87%, specificity of 44%, negative predictive value of 81.3% and positive predictive value of 50%. The ROC curves showed an area under the curve of 0.8 for the learning sample and 0.73 for the test sample. This method avoided one in four WBCT in the learning group and one in five WBCT in the test group. **Discussion:** The "a priori" approach seems more robust in predicting the normality of the WBCT. False-negative patients in the multivariate model are more numerous and have more serious injuries missed. Rationalization of the WBCT in trauma patients is possible by a predictive algorithm. **Conclusions:** An external validation through a multicentric prospective study is required to validate this predictive model.

#19253 : CHARACTERISTICS OF THE PATIENT WITH BACTERIEMIA IN EMERGENCY DEPARTMENT**Authors:**

ALBA HERNANDEZ SANCHEZ (1), GAELIA BORNASCAYUELA (1), Sergio Antonio Pastor Marín (2), Elena del Carmen Martínez Cánovas (2), JOSE ANDRES SANCHEZ NICOLAS (1), MARIA ENCARNACION SANCHEZ CANOVAS (1), Pascual Piñera Salmerón (2)

1. EMERGENCY MEDICINE, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN
2. SERVICIO DE URGENCIAS, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN

Keywords: BACTERIEMIA, INFECTIOUS

Abstract :**INTRODUCTION**

The bacteriemia is an important cause of morbidity and mortality in spite of the availability of a powerful antimicrobial therapy and the advances in the support attention. In the Hospitable first aid services, after the clinical evaluation of the feverish syndromes there is habitual the achievement of complementary tests, between which they emphasize the capture of hemocultivos.

TARGETS

Main: To evaluate the patient's profile with bacteriemia in our health area

Secondary: To determine the most frequent comorbidities that these present.

METHODOLOGY

Observacional has designed an epidemiologic study to himself with retrospective character, in our hospital that is classified as of the second level and a population of 250000 inhabitants attends. The first aid service receives approximately 9000 urgencies a month. There were selected patients who consulted for feverish syndrome in the year 2017 and it extracted them to itself hemocultivos. There were checked the case histories of the chosen episodes, variables being gathered as: age and sex, microorganism that isolated itself in the hemocultivo, pathologies previous to the patients, established treatment, number of returns and mortality.

RESULTS

131 patients included with hemocultivos positives. The entire distribution of the sample for sex belonged to 73 males (55,7 %) and 58 women (44,3 %), being the median of age of 76 years, the minimal age 11 and the maximum 97. Of the obtained sample, 14 patients re-entered after being discharged and the mortality in whole was 10,7 %.

As for previous pathologies that they were presenting, it was obtained that 80 (61,06 %) was diagnosed of HTA, their 25 (19,08 %) of DM. As for the cardiovascular diseases, their 28 (21,37 %) had arrhythmias precedents, 6 (4,58 %) had suffered previous IAM, 7 (5,34 %) was presenting cardiovascular disease and 9 (6,87 %) heart failure. If we speak about respiratory illnesses, we are that their 19 (14,50 %) had been diagnosed previously of EPOC and 3 (2,29 %) of bronquiectasias. As for the renal illnesses, 28 of them were presenting ERC (21,37 %), receiving 4 of them hemodiálisis. If we speak about present digestive illnesses in our patients' sample, their 5 (3,81 %) was presenting hepatopatía established and 2 (1,52 %) ulcus. Finally as for the illnesses of neurological origin, their 23 (17,55 %) was presenting cerebrovascular illness and 20 (15,26 %) dementia.

CONCLUSIONS

The bacteriemias collaborate to a high morbimortality incidence. In our series we obtained that the patient's profile is usually a 76-year-old male, with some associate comorbidity, being the pathology more often associated the HTA. On having analyzed the most frequent pathologies for systems, we obtain that the most frequent pathology associated with our patient's profile is that of cardiovascular origin, followed by the neurological one, in the third place the renal one, being the least frequent the digestive one

#19254 : Tracking the Serious Adverse Events due to Opioids Using a National Real-time Database.

Authors:

Saumitra Rege (1), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA

Keywords: Opioids, Adverse Events, Overdose, NPDS.

Abstract :

Objectives: Misuse of prescription opioids continues to be a significant public health crisis globally. The number of patients with opioid dependence worldwide was estimated to be 15.5 million in 2010. According to the Centers for Disease Control and Prevention (CDC), there were more than 72,000 overdose deaths in the United States (U.S.), with 49,068 involving an opioid, with 11.4 million misusing prescription pain medicine. The present study sought to evaluate the recent trends in the severe outcomes to opioid exposures reported to the U.S. poison centers (PCs).

Methods: The NPDS was queried for opioid exposures that were reported from 2012 to 2017. Cases with severe outcomes (SO) were defined as exposures that resulted in either a death or major clinical outcomes. We descriptively assessed the demographic and clinical characteristics. Calls from acute care hospitals and emergency departments (ACH) were studied. Poisson regression was used to evaluate the trends in the number and rates (per 100,000 human exposures) of opioid exposures resulting in SO. Percent changes from the first year of the study (2012) were reported with the corresponding 95% confidence intervals (95% CI).

Results: There were 184,645 opioid-related SO cases reported to the PCs during the study period. Among these, 84% were reported by ACH. Cases between 20 and 39 years (39.3%) constituted the most common age group. The proportion of older adults above 60 years of age among SS cases almost doubled during the study period (7.4% to 14.2%). Females accounted for 63.8% of cases. Most exposures occurred in a residence (94.2%). More than one substance was reported for most cases (78.2%). Major clinical effects were demonstrated in 9.4% of exposures and the case fatality rate was 0.8%. Major effects were less common in teenagers (4.3%) and there were 92 deaths among this age group during the study period. Among cases, 33.2% were admitted to a critical care unit (CCU) while 22.6% were admitted to a psychiatric facility. The proportion of cases from ACH increased during the study period (80.4% vs 86.4%). Hydrocodone (36.7%) was the most common opioid reported in SS cases followed by tramadol (20.8%). Benzodiazepines were the most common non-opioid co-occurring substance reported for SS (28.9%). The most frequent clinical effect demonstrated was drowsiness (51.8%), while tachycardia (22.5%) and respiratory depression (10.3%) were commonly seen. Naloxone was used in 28.3% of cases. In approximately one-fourth of the cases, these therapies were used after recommendations from the PCs. SS decreased by 24.4% (95% CI: -25.7, -23.1%, $p < 0.001$) while the SS rate also decreased by 16.5% (95% CI: -23.4%, -9.3%, $p < 0.001$).

Conclusions: The number of SS cases handled by the PCs decreased significantly. Moreover, there was a low fatality rate. Hydrocodone and tramadol were the most common opioid reported for the sample. Personalized evidence-based strategies, population-level interventions, creation of protective environments, and better screening of patients at risk of suicide are some key measure to limit this trend. PCs should play a significant role in the care of this patient population and become involved earlier in the case.

Trial Registration / Funding Information (only) :

n/a

#19255 : Non-medical Use of Opioids among the Teenage Population.

Authors:

Saumitra Rege (1), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA

Keywords: Opioids, Teenage, Substance Misuse, Overdose

Abstract :

Objectives: The misuse of prescription opioids has evolved into a national emergency in the United States (U.S.). According to the 2017 National Survey on Drug Use and Health, approximately 2 million individuals misused prescription pain relievers for the first time within the past year. According to the Monitoring the Future Survey, among youth ages 12 to 17, 4.9 percent reported past-year nonmedical use of prescription medications. Prescription opioid misuse among teenagers occurs as this population believes that they are safer than illegal substances as they are prescribed by a healthcare professional. This study examines the trends in intentional opioid exposures among teenagers reported to U.S. poison centers (PCs).

Methods: The National Poison Data System (NPDS) was queried for all intentional opioid exposures in patients between 13 and 19 years from 2012 to 2018. We descriptively assessed demographic and clinical characteristics. Calls from acute care hospitals and emergency departments (ACH) were studied. Poisson regression models were used to evaluate the trends in the trends in teen intentional opioid exposures. Percent changes from the first year of the study (2012) were reported with the corresponding 95% confidence intervals (95% CI).

Results: Among 651,882 teen exposures reported to the U.S. PCs during the study period, 39,398 (6%) involved opioids. While the overall teenage exposure calls increased, opioid-related calls decreased (6,211 to 4,487). Among the teen opioid exposures, 72.9% were directly reported by ACH. Cases were predominantly females (62.3%). The residence was the most common site of exposure (91.4%). Multi-substance exposures accounted for 56.2% cases, with the prevalence increasing during the study period (53.9% to 58.7%). Most intentional teenage exposures were attributed to suspected suicides (65.7%) with one-fifth cases reporting abuse. Major clinical effects were seen in 5.3% teen opioid exposures and there were 174 deaths. Among cases, 18.1% were admitted to a critical care unit (CCU) while 22.3% were admitted to a psychiatric facility. The proportion of cases from ACH increased during the study period (65.9% vs 78.6%). Hydrocodone (36.1%) was the most common opioid reported in intentional teen opioid cases followed by tramadol (19.2%). Benzodiazepines were the most common non-opioid co-occurring substance reported for cases (13.5%). The most frequent clinical effect demonstrated was drowsiness (40%), while tachycardia (21.9%) and vomiting (15.7%) were commonly seen. Naloxone was used in 15.7% of cases. In approximately 40% of the cases, these therapies were used after recommendations from the PCs. Intentional teenage exposures decreased by 27.8% (95% CI: -30.5, -25.7%, $p < 0.001$) during the study period.

Conclusions: The current study used data from a national real-time poison system and demonstrated that the teenage opioid exposures due to intentional reasons decreased during the study period. These trends parallel the stabilizing opioid prescribing rates as well as several state and federal public health prevention efforts. Suspected suicides were the predominant reason for such exposures. The proportion of exposures from acute care hospitals and hospital-based EDs increased. Greater education efforts, recovery support and behavioral approaches are key in tackling this issue in the teen population.

Trial Registration / Funding Information (only) :

n/a

#19256 : Gender violence: the Emergency Department faces an awful form of violence**Authors:**

Massimo ZANNONI (1), Giorgio RICCI (2), Serena BONOMO (1), Luigina LONGO (1), Virginia TONIN (1), Roberto CASTELLO (1), Chiara BOVO (3)

1. Emergency and Accident Department, Azienda Ospedaliera Universitaria Integrata, Verona (VR), Italy, VERONA, ITALY
2. Emergency and Accident Department, Azienda Ospedaliera Universitaria Integrata, Verona (VR), Italy, Verona, ITALY
3. Hospital Health Direction, Azienda Ospedaliera Universitaria Integrata, Verona (VR), Italy, VERONA, ITALY

Keywords: Gender violence, Emergency Department, Gntimate violence, women

Abstract :

Background: Studies indicate that women are more at risk of domestic violence (DV) is spread to 30% worldwide according to WHO data. Compared to occasional sexual violence domestic violence is repeated and tends to become chronic. It is the least recognized violence by women and the social context but leads to serious health problems and death in the medium and long term for women and for minors who assist them. One of the places where the victim can be most frequently intercepted is the Emergency Department (ED) where victims of violence, sometimes unaware of their condition, refer for a first health intervention.

Methods: We conducted a retrospective study on all admissions to the ED of Azienda Ospedaliera Universitaria Integrata (AOUI) di Verona (I) from Jan 2014 to Dec 2018 due to violence.

Results: During the study period a total of 5,692 cases referred to our ED for violence: 580 (10.2%) were due to DV. Women were mostly involved than men (80.3% vs. 19.5%) with no age difference compared to males (F: 38 (38-49); M: 38 (39-51) years (median; IQD). Pregnancy was present in 17 cases and 7 women suffered intimate violence (IV). We observed 31 (5.3%) cases of children (15 female; 16 males) who suffered DV too. Only 358 (38.3%) of the victims were foreigners: the Romanian women (9.7%), Sri Lankan (5.4%), Nigerian (4.7%) and Moldavian (4.1%) the most frequent ethnic groups. When analyzing when violence is performed, afternoon and evening times were more prevalent (12.00-16.00: 22.9%; 16.00-20.00: 21.6%; 20.00-24.00: 22.4%) than the rest of the day.) with weekends and the beginning of the week having more cases of DV (Monday: 15%; Tuesday: 15.7; Saturday:16%; Sunday: 16.6%). We observed also a great number of minors (284; M: 203; F: 81) who suffered violence outside the family (NDV). Women suffering NDV represent 33.1% of the cases with demographics not differing from males (F: 39 (39-51); M: 35 (35-45) years (median; IQD). Except in the evening (20.00-24.00: 23.4%) we did not observed differences in the time of NDV) during the day, Sundays (18.2%) seem to be the day with higher number of cases. Similarly to DV group, Italian women were more (1,098; 64.6%)as well as Romanian (7.7%), Nigerian (5.1%) and Moroccan (4.9%) women , among foreigner ones. No pregnant women were involved in NDV with only 2 cases of IV. In both DV e NDV there were differences in figure among the various years of the study.

Discussion and Conclusions: The full extent of gender violence is difficult to estimate and what actually reported is only a fraction of the reality. DV is a particularly insidious form of gender-based violence. As previously reported women, as in our data, are the most frequent victims of DV. The low figures of IV we found can be explained in the difficulty by the victim to be visited after the rape. Most of our cases are in the last year, demonstrating greater awareness by women of the need to denounce what she has suffered.

Trial Registration / Funding Information (only) :

This research received no external funding. The authors declare no conflict of interest.

#19258 : High Users of the Emergency Department in Southern Ontario, Canada: A Six Year Analysis of Data**Authors:**

Iwona Bielska (1), Iwona Bielska (1), Kelly Cimek (2), Chloe Nyitray (3), Shawn Mondoux (4), Ivy Cheng (5), Dale Guenter (6), Lilian Vasilic (7), Jean-Eric Tarride (1)

1. Department of Health Research Methods, Evidence, and Impact, McMaster University, Hamilton, CANADA
2. Department of Planning, Hamilton Niagara Haldimand Brant Local Health Integration Network, Hamilton, CANADA
3. Department of Planning & Analysis, Hamilton Health Sciences, Hamilton, CANADA
4. Department of Medicine, Division of Emergency Medicine, McMaster University, Hamilton, CANADA
5. Emergency Services, Sunnybrook Health Sciences Centre, Toronto, CANADA
6. Department of Family Medicine, McMaster University, Hamilton, CANADA
7. Regional Integrated Decision Support, Hamilton Health Sciences, Hamilton, CANADA

Keywords: health services research, health system performance, health economics

Abstract :

Background: High users of the health care system account for two-thirds of the health care costs in Canada. Previous research has shown that a third of these individuals remain high users from year to year. However, there is limited information on high users of the emergency department (ED). The objective of this study was to examine six years of data on high users of the ED for individuals living in the Hamilton Niagara Haldimand Brant Local Health Integration Network (HNHB LHIN, population: 1.45 million) in southern Ontario, Canada.

Methods: A descriptive analysis of a six-year cohort (fiscal years: 2012/13-2017/18) of high users of the ED residing in the HNHB LHIN was undertaken. High use of the ED was defined as having had five (5) or more visits to hospital EDs per year. Information on ED visits (number, discharge diagnoses), hospitalizations (number, length of stay, discharge diagnoses), patient characteristics (sex, age, region of residence, rurality, chronic disease history), and mortality was abstracted. Data were obtained from Integrated Decision Support (IDS) hosted by Hamilton Health Sciences using the National Ambulatory Care Reporting System and the Discharge Abstract Database.

Results: Between 2012/13 and 2017/18, 77,102 unique individuals were high users of the ED, representing 760,320 ED visits. Although high users of the ED accounted for 7% of all users of the ED, they made up 19% of all ED visits during this time period. Among the high users, 18,073 (23%) had high ED use in two or more fiscal years. 404 individuals (<1%) remained high users over the course of all six fiscal years. The average age of high users of the ED was 45.9 years among those who had high use during one of the six cohort years ("one-year cohort") and slightly older at 47.7 years among those who had high use during all six years of study ("six-year cohort"). High users were more often female (54%). In terms of health care utilization, individuals in the one-year cohort had an average of 6.2 ED visits (range: 5-68 visits) during their year of high ED use. In comparison, individuals in the six-year cohort had an average of 102.4 ED visits (range: 33-2,022 visits) over the six years of study. Among the one-year cohort, 58.2% of the individuals were admitted to hospital, on average 1.8 times per year and for a length of stay of 23.3 days. In comparison, 83.7% of the six-year cohort were hospitalized, on average 8.5 times during the course of the six years and for a length of stay of 44 days during each hospitalization.

Discussion and Conclusions: High users of the ED account for a disproportionate amount of ED visits in the HNHB LHIN. This study identifies the characteristics of these patients and the patterns of ED use among this cohort, which may inform upstream community interventions that would divert future high-frequency ED use.

Trial Registration / Funding Information (only) :

I.A. Bielska was supported by the CIHR Health System Impact Fellowship.

#19259 : Pre-hospital fraction of inspired oxygen (pFiO₂) as a predictor of hospital mortality**Authors:**

Francisco Martín-Rodríguez (1), Raúl López-Izquierdo (2), Miguel A. Castro Villamor (3), Carlos Del Pozo Vegas (4), Maria Antonia Udaondo Cascante (5), Julio C. Santos Pastor (6), Rodrigues Leonardo (7), Iratxe Moro Mangas (4), Jesús C. Minguez Bravo (8), Ana B. López Tarazaga (4), José Ángel Gutiérrez Sevilla (9), Juan F. Delgado Benito (10), Pablo Del Brio Ibañez (2), María P. Delgado Benito (11), Violante Méndez Martín (11), Rosa M. Herrero Antón (11), Virginia Carbajosa Rodríguez (2)

1. Advanced Life Support Unit Valladolid, Prehospital Emergency Medical Service SACYL, Valladolid, SPAIN
2. Emergency Department, Hospital Universitario Río Hortega, Valladolid, SPAIN
3. Facultad de Medicina, Universidad de Valladolid, Valladolid, SPAIN
4. Emergency Department, Hospital Clínico Universitario, Valladolid, SPAIN
5. Radiology, Hospital Universitario de Burgos, Burgos, SPAIN
6. Emergency Department, Complejo Hospitalario de Segovia, Segovia, SPAIN
7. Emergency Department, Hospital Sanatorio de Luanda, Luanda, ANGOLA
8. Advanced Life Support Unit Segovia, Prehospital Emergency Medical Service SACYL, Segovia, SPAIN
9. Advanced Life Support Miranda de Ebro, Prehospital Emergency Medical Service SACYL, Miranda de Ebro, SPAIN
10. Advanced Life Support Salamanca, Prehospital Emergency Medical Service SACYL, Salamanca, SPAIN
11. Emergency Department, Complejo Hospitalario de Salamanca, Salamanca, SPAIN

Keywords: Mortality; Prehospital Care; Prognosis; Clinical decision

Abstract :

Introduction: oxygen is one of the most widely used drugs by Prehospital Emergency Medical Services (PhEMS), in practically any type of pathology and / or situation. The objective of this study is to evaluate the ability of pFiO₂ to predict in-hospital mortality (2 and 30 days) from the index event.

Material and methods: Prospective longitudinal study, between April 1, 2018 and April 30, 2019. The study was developed on a reference population of 1,021,086 inhabitants, distributed in four provinces of Spain (Burgos, Salamanca, Segovia and Valladolid). It was considered that a patient met criteria to be included in the study if he had been attended by Advanced Life Support Units and transferred to the emergency services, and did not meet any exclusion criteria: minors, cardiorespiratory arrest, death and pregnant women.

Demographic data (age and gender) and clinical parameters were collected during the first contact with the patient in prehospital care. The need for oxygen therapy, pFiO₂ and the ventilatory support system used were collected on route. The mortality data and the need for Intensive Care were obtained by reviewing the patient's electronic history after 30 days.

The main dependent variable was mortality from any cause in the hospital before the first 2 days from the index event.

The area under the curve (AUC) of the receiver operating characteristic (ROC) for pFiO₂ was calculated in terms of mortality at 2 and 30 days, as well as the best score that offered greater sensitivity and joint specificity.

Results: a total of 1823 patients were included in our study. The median age was 69 years (IQR: 55-81 years), 40.3% of them were women. The 2-day mortality was 5.2% (96 cases) and from 11.4% (208 cases) to 30 days. 18.1% (330 cases) of patients required ICU. 32.8% (599 cases) required prehospital oxygen, 80.6% using nasal cannula or oxygen masks, 2.1% with non-invasive positive pressure ventilation, 11.1% with orotracheal intubation and 1.6% using devices difficult airway.

The AUROC obtained in relation to pFiO₂ and the two-day mortality was 0.862 (95% CI: 0.81-0.90, p <0.001), and for the 30-day mortality of 0.790 (95% CI: 0.75-0.82; <0.001).

The value with the best sensitivity and specificity overall for pFiO₂ in mortality at both two and 30 days was 0.26. For two-day mortality, a sensitivity of 84.4% (75.8-90.3), specificity of 75.2% (73.1-77.1), positive predictive value 15.9 (13.0-19.3), negative predictive value 98.9 (98.1-99.3), Likelihood was obtained. ratio (+) 3.40 (3.02-3.83), Likelihood ratio (-) 0.21 (0.13-0.33) and odds ratio 16.34 (9.32-28.65).

Conclusions: pFiO₂ has an excellent capacity to predict the early mortality of serious patients treated by PhEMS. Oxygen represents one of the main assistance tools of PhEMS, and its relationship with mortality should be considered.

Trial Registration / Funding Information (only) :

The study was approved by the Research Ethics Committee of all participating centers (reference CEIC: #PI 18-010, #PI 18-895, #PI 2018-10/119, #PI MBCA/dgc and #CEIC 2049). All patients (or guardians) signed informed consent, including consent for data sharing. This research has received support from the Gerencia Regional de Salud (SACYL) for research projects in Biomedicine, Healthcare Management and Healthcare Care, with registration number GRS 1678/A/18, principal investigator: Francisco Martín-Rodríguez, as part of the "Use of early warning scales in the prehospital scope as a diagnostic and prognostic tool", and Scholarship for the intensification of the research activity for the year 2019, with registration number INT/E/02/19 from the Gerencia Regional de Salud (SACYL).

#19260 : RISK FACTORS OF THE PATIENT WITH BACTERIEMIA IN EMERGENCY SERVICE

Authors:

ALBA HERNANDEZ SANCHEZ (1), GAELIA BORNASCAYUELA (1), Sergio Antonio Pastor Marín (2), Elena del Carmen Martínez Cánovas (2), JOSE ANDRES SANCHEZ NICOLAS (1), MARIA ENCARNACION SANCHEZ CANOVAS (1), Pascual Piñera Salmerón (2)

1. EMERGENCY MEDICINE, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN
2. SERVICIO DE URGENCIAS, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN

Keywords: BACTERIEMIA, INFECTIOUS, RISK FACTOR

Abstract :

INTRODUCTION

The bacteriemia is an important cause of morbidity and mortality in spite of the availability of a powerful antimicrobial therapy and the advances in the support attention. In the Hospitable first aid services, after the clinical evaluation of the feverish syndromes there is habitual the achievement of complementary tests, between which they emphasize the capture of hemocultivos

TARGETS

know the factors of risk that could influence the mortality and return of our patients

METHODOLOGY

Observacional has designed an epidemiologic study to himself with retrospective character in our hospital that is classified as of the second level and a population of 250000 inhabitants attends. The first aid service receives approximately 9000 urgencies a month. There were selected patients who consulted for feverish syndrome in the year 2017 and it extracted them to itself hemocultivos. There were checked the case histories of the chosen episodes, variables being gathered as: age and sex, microorganism that isolated itself in the hemocultivo, pathologies previous to the patients, established treatment, number of returns and mortality.

RESULTS

131 patients included with hemocultivos positives. Entire distribution for sex was 73 males (55,7%) 58 women (44,3%), being the median of age 76 years, the minimal age 11 and the maxim 97. Of the obtained sample, 14 patients re-entered after being discharged and the mortality in whole was 10,7%. As for previous pathologies that they were presenting, it was obtained that 80 (61,06%) was diagnosed of HTA and 50,37% had an associate cardiovascular disease. As for factors of extrinsic risk we think that their 4 (3,05%) had submitted to a previous surgery in the last month, their 4 (3,05%) was institutionalized, 1 of them had been submitted to the laying of double catheter J in the last month, 6 (4,58%) was devices bearers intravasculares, their 4 (3,05%) was in hemodiálisis, 9 (6,87%) was probe bearers vesical and 4 (3,05%) was bearers of biliary prosthesis. As for the capture of medicines their 3 (2,29%) was meeting in treatment immunosuppressants, 2 (1,52%) was receiving chemotherapy and their 6 (4,58%) was taking corticoids to high doses. As for the base illnesses that they could cause inmunocompromiso, we think that their 9 (6,87%) was presenting a solid tumor, 2 (1,52 %) had been diagnosed of VIH, their 4 (3,05%) had precedents of transplant of solid organ, 1 was presenting leukemia and 2 (1,52%) linfoma. It is of interest to emphasize also that 55 (41,98%) had precedents of previous resistances in what it refers to the antibiotic treatment

CONCLUSIONS

The high modernization in the current medicine that bears the implantation of prosthetics materials and devices intravasculares, as well as the high incidence of illnesses that they can cause inmunodepresión like the cancer or the AIDS as well as the use of antibioterapia of wide bogey determines changes in the habitual flora so many intra as extrahospitable. Therefore as for the extrinsic factors associated with the bacteriemia, we think that the one that major percentage of association presents is to be a probe bearer vesical, as for the capture of medicines that could inmunocomprometer we find the head the corticoids and if we refer to established illnesses find the tumor occurred rarely like the first one of the possible causes

#19262 : Experimental use of machine learning to generate next-activity recommendations in the emergency department**Authors:**

Diederik Van Sassenbroeck (1), Steven Mertens (2)

1. Emergency Department, AZ Maria Middelaes, Ghent, Belgium, Ghent, BELGIUM
2. Faculty of Economics and Business Administration, University of Ghent, Belgium, Ghent, BELGIUM

Keywords: machine learning, artificial intelligence, next-activity recommendation, flexible and knowledge-intensive processes

Abstract :**Background**

Patients in the emergency department (ED) need a diagnostic work-up from complaints upon presentation to a correct treatment. The intent is to recognize frequently occurring diagnoses and to not miss serious, potentially life-threatening disorders. Emergency physicians continuously refine information to rearrange the probabilities of seriousness and likelihood of potential diagnoses. They consider the patient characteristics and results of technical investigations and implement clinical decision rules. However, the environment of the ED (e.g., the availability of resources) and the personal characteristics of the physician (e.g., experience, memory, interpersonal skills) also contribute to the decision-making. Therefore, a secondary source of knowledge proposing the next activity to perform (e.g. take an X-ray) and reflecting all preceding experiences with similar patients in the setting of the specific ED would be an improvement.

Methods

Design Science methodology was applied to develop techniques that generate recommendations for the next activity to be executed for patients in an ED, using a combination of historic data, process management and machine learning. In this project, historic data were used from the ED of the Maria Middelaes hospital in Ghent, Belgium consisting of 41657 patients. For each patient, the timeline of all registered events in diagnosis and treatment was reconstructed, starting from the registration at the entrance and ending with either a discharge or hospital admission. Additionally, keywords (e.g., "anemia" in the medical history) and other data values (lab and X-ray) were identified.

Forty strategies that each prioritize different similarities between the current and historic patients based on either activities, data or both, were prototyped to generate probabilities that serve as next-activity recommendations. They were trained on a subset of the patients and evaluated by comparing the predicted with the actual next activities of the other patients. The evaluation criteria were the calculation time and five performance measures: rank, accuracy, brier score, log loss and rank score.

Results

The Design Science methodology identified 1350465 data events with 625758 activities and 117 unique activities in patient timelines with a maximum of 128 subsequent activities. The best performing strategy achieved an average top ranked recommendation accuracy of 60% and the correct next activity was ranked in the top 3 on average, with an average calculation time of less than 0.4 seconds.

Conclusions and future directions

The proposed strategies were fast and sufficiently accurate to help remind emergency physicians of alternatives or forgotten activities, without impacting their decision freedom. These experiments are to be seen as operational process support, i.e. not to try to impose a specific diagnosis or therapy but merely suggesting suitable next activities. It could prevent medical errors and promote a more uniform diagnostic approach. Future research is aiming to further improve the accuracy of the first recommendation and to allow the introduction of clinical pathways. The ultimate goal is to provide real-time recommendations for the possible next-step activities of all patients present at the same time in the ED and for the prioritization of patients, based on their characteristics and results of their preceding processes.

Trial Registration / Funding Information (only) :

Flanders Innovation & Entrepreneurship, Agency of Innovation and Entrepreneurship, Flanders, Belgium

#19264 : Serum S100B as a predictor of mild traumatic brain injury in children: a feasibility study**Authors:**

Jolien De Meyer (1), Eva De Leeuw (2), Said Hachimi Idrissi (3)

1. Emergency medicine, UGent, Ghent, BELGIUM
2. Medical student, UGent, Ghent, BELGIUM
3. Emergency medicine, UZ Gent, Ghent, BELGIUM

Keywords: Traumatic brain injury, Head injury, Head trauma, Children, Biomarkers, S100B

Abstract :

Introduction

Traumatic brain injury (TBI) is a serious public health problem. The management of children with mild TBI is challenging. It is a balance between clinical uncertainty and the potential adverse effects of radiation exposure from Computed Tomography (CT)-scans. Combining the use of biomarkers with clear cut inclusion rules could help exclude intracranial injury (ICI) in mild TBI without CT-scanning. S100B has been studied extensively as a biomarker of brain injury in adults but has limited evidence in children. This prospective study aimed to evaluate the accuracy of serum S100B levels to exclude an ICI in children with mild TBI and the ability to reduce unnecessary CT-scanning and hospital admissions.

Methods

This was a prospective multicentric study which included patients aged 0-18 years old presenting with TBI and having a Glasgow Coma Scale (GCS) ≥ 14 . It was conducted from April 2018 to December 2018 in the emergency departments of three different hospitals in Belgium. Children with obvious fractures or significant internal injuries and children with bleeding disorders were excluded. The attending physician filled out a questionnaire on the circumstances of the trauma and the symptoms. A venous blood sample was collected within 6 hours after the accident. The samples were analyzed for serum S100B using a Cobas e 602 analyzer (Roche). The serum S100B measurement, the questionnaire and the patient's medical record were then evaluated in order to assess the accuracy of serum S100B levels as a screening tool for ICI in pediatric patients with mild TBI.

Results

Twenty-five children with mild TBI were included. Nineteen patients were admitted for 24 hours observation (76%). Thirteen patients were hospitalized (52%). CT-scanning of the head was performed in 14 patients (56%). In this group, abnormalities were found in 2 patients (8%). Magnetic resonance imaging (MRI) of the head was performed in 1 patient (4%) and showed abnormalities. None of these patients needed neurosurgical intervention. In 24 out of 25 patients, serum S100B was analyzed. The lowest measured level of S100B was $0,039 \mu\text{g/L}$, the highest $5,710 \mu\text{g/L}$. The mean level of S100B was $0,957 \mu\text{g/L}$. 14 out of 24 analyzed patients (58,3%) were S100B positive ($>0,35 \mu\text{g/l}$ for children <9 months, $>0,23 \mu\text{g/l}$ for children 10-24 months, $0,1735 \mu\text{g/l}$ for children 25-36 months and $>0,1635 \mu\text{g/l}$ for children >36 months old). In the S100B negative group, 40% were hospitalized and 50% underwent CT-scanning compared to 64,3% for both hospitalization and CT-scanning in the S100B positive group. No abnormality was found on CT in all S100B negative patients. If the biomarker would be used as a negative predictor for ICI, CT-scans would be avoided in 35.7% of the patients without overlooking ICI. Furthermore, in-hospital observation and admission might have been prevented in 42,1% and 30,8% of cases, respectively.

Conclusion

S100B biomarker can be used to rule out ICI in children suffering from mild TBI with a GCS ≥ 14 . The negative predictive value in this study was 100%. Implementing this biomarker might reduce CT-scanning, in-hospital observation and admission.

#19268 : The CARE Rule and the CARE-HEART strategy to safely reduce troponin measurement in patients presenting with chest pain**Authors:**

Thomas Moumneh (1), Andréa Penalosa (2), Anda Cismas (3), Sandrine Charpentier (4), Thibault Schotté (5), Sabrina Pernet (6), Stephanie Malatest (7), Fabrice Prunier (8), Alexandra Warnant (2), Tin-Hinan Mezdad (9), Cédric Gangloff (10), Louis Soulat (11), Delphine Douillet (1), Jérémie Riou (12), Pierre-Marie Roy (1)

1. Département de médecine d'Urgence, CHU Angers, Angers, FRANCE
2. Service des Urgences Adultes, Cliniques Universitaires Saint-Luc, Bruxelles, BELGIUM
3. Urgences adulte, Cliniques universitaires Saint-Luc, Bruxelles, BELGIUM
4. Urgences adulte, CHU Toulouse - Hopital Rangueil, Toulouse, FRANCE
5. Urgences adulte, CH Le Mans, Le Mans, FRANCE
6. Urgences adulte, CH Saint Malo, Saint Malo, FRANCE
7. Urgences adulte, CH Cholet, Cholet, FRANCE
8. Service de Cardiologie, CHU, Angers, FRANCE
9. Réanimation médicale, Centre Hospitalier Universitaire Angers, Angers, FRANCE
10. Urgences Médico Chirurgicales Adultes , CHU de Rennes Pontchaillou, Rennes, FRANCE
11. SAMU SMUR Urgences Adultes, CHU de Rennes Pontchaillou, Rennes, FRANCE
12. INSERM, UMR 1066, CNRS 6021, MINT, Université d'Angers, Angers, FRANCE

Keywords: Myocardial infraction, Acute coronary syndrome, Risk assessment model, Troponin

Abstract :

Objectives:

Current guidelines for patients presenting to the Emergency Department (ED) with chest pain but with no ST segment Elevation Myocardial Infarction (STEMI) on ECG are mainly based on serial troponin measurements. These strategies are safe but costly and time consuming, contributing to emergency departments' overcrowding. Our main objective was to prospectively assess the reliability of the CARE rule, corresponding to the first 4 items on the HEART score and its association with the HEART score to safely rule-out Non-STEMI without troponin measurement (CARE) or with a single baseline troponin measurement (HEART).

Methods:

Prospective observational study in six EDs. Consecutive patients with non-traumatic chest pain and no formal diagnosis after examination and ECG were included and followed for 45-days. Items allowing computation of the CARE rule and HEART score were prospectively collected by the attending physician. The main study endpoint was the 45-day rate of MACE (myocardial infarction, percutaneous coronary intervention, coronary bypass and cardiac death). Secondary endpoint was the theoretical reduction of the number of required troponin tests, computed by the difference between the actual number of troponin tests with the theoretical number of troponin test needed if the CARE-HEART strategy would have been applied. The procedure would be deemed reliable if, when negative, the rate of MACE is <1% with an upper limit of the 95% confidence interval (95% CI) <3%.

Results:

From 1452 patients included, 1402 were analysed, 1285 had at least one troponin measurement and 97 (7%) had MACE during the follow-up. The CARE rule was negative for 279 (20%) patients and one presented a MACE: 0.4% (1/279, 95% CI: 0-2.0%). The CARE-HEART strategy was negative for an additional 476 patients (34%) and one of them had a MACE: 0.3% (2/755, 95% CI: 0-0.9%). The CARE-HEART strategy could theoretically have spared 360 troponin measurements (19%).

Discussions:

The CARE rule safely classified 20% of patients in a very-low risk category, for whom the hypothesis of a NSTEMI would have been ruled-out without the need for a troponin test. An additional 34% patients were safely classified in the low risk group according to the HEART score, on the basis of a single troponin test.

Limitations:

This was an observational study. Physicians were not aware of the strategy interpretation and they may have a different and more prudent assessment of CARE items if they were asked to apply the rule. The reduction in terms of troponin tests is theoretical and likely overestimated. Nevertheless, this testifies to the potential medico-economic benefit of the procedure.

Conclusions:

With a very low risk of MACE during follow-up, the CARE Rule and the CARE-HEART strategy may safely allow reduction of troponin measurements in patients presenting to the Emergency Department with chest pain.

Trial Registration / Funding Information (only) :

This work was supported by the University Hospital of Angers. The study received the approval of the ethics committee of Angers University Hospital and of the University Clinics of Saint-Luc. It was registered at the ClinicalTrials.gov in June 2016 (NCT02813499)

#19270 : Weather as a gender-dependent risk factor for Acute Myocardial Infarction**Authors:**

Calvin Kienbacher (1), Rainer Kaltenberger (2), Tscherny Katharina (3), Verena Fuhrmann (1), Jan Niederdöckl (3), Wolfgang Schreiber (1), Harald Herkner (1), Dominik Roth (1)

1. , Department of Emergency Medicine, Medical University of Vienna, Vienna, AUSTRIA

2. , ZAMG, Vienna, AUSTRIA

3. Medical University of Vienna, -, Vienna, AUSTRIA

Keywords: acute myocardial infarction, weather, gender

Abstract :**Background**

Extreme temperatures, both high and low, are a known risk factor for acute myocardial infarction. The same is true for gender. A possible connection between those two risk factors extreme temperatures and gender, however, have not been studied yet.

Methods

All patients treated for acute ST-elevation myocardial infarction (STEMI) at our department during a period of 64 months (March 2013-July 2018) on Saturdays and Sundays have been studied. On those days, all patients with STEMI in the Vienna area are treated at our department. We studied possible connection between gender, temperature and incidence of STEMIs. Incidence-rate-ratios (IRR) were calculated using Poisson-regression modeling. The incidence of STEMIs per day served as a dependent variable, hot and cold days using different definitions (subjectively felt temperature, Kisely-days, official heat and cold-warnings), gender and interaction between temperature and gender were used as independent variables. Weather data was provided by the official Austrian weather agency ZAMG.

Results

On 562 study days, 1109 patients were treated for STEMI (306 (28%) female, age 63 ± 14 years). High ($\geq 20^{\circ}$ C) and low ($\leq 0^{\circ}$ C) felt temperature was associated with an increased incidence of STEMIs. Cold weather effects were however distinctly less strong in females compared to males (IRR for interaction 0.43 (95% CI 0.22-0.86); $p=0.02$), whereas there was no difference between gender for hot days (IRR for interaction 1.15 (0.88-1.50); $p=0.3$).

Conclusion

Cold weather is a gender-dependent risk factor for acute myocardial infarction, and increases the (already increased) baseline risk for males. Emergency physicians should be aware of those gender-related differences regarding weather.

Trial Registration / Funding Information (only) :

none

Authors:

Gaeli Bornas Cayuela (1), Alba Hernández Sánchez (1), Elena del Carmen Martínez Cánovas (2), Sergio Antonio Pastor Marín (2), José Andrés Sánchez Nicolás (1), Pascual Piñera Salmerón (2)

1. EMERGENCY MEDICINE, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN
2. SERVICIO DE URGENCIAS, HOSPITAL GENERAL UNIVERSITARIO REINA SOFIA, MURCIA, SPAIN

Keywords: BACTERIEMIA, INFECTIOUS, TREATMENT, ANTIBIOTICS

Abstract :**BACTERIAL SENSITIVITY and EMPIRICAL TREATMENT of BACTERIEMIA of URINARY ORIGIN**

Gaelle Bornas Cayuela¹, Alba Hernández Sánchez¹, Elena del Carmen Martínez Cánovas¹, Sergio Pastor Marín¹, José Andrés Sánchez Nicolás¹, Pascual Piñera Salmerón¹

¹URGENCIAS, HOSPITAL GENERAL UNIVERSITARIO REINA SOFÍA, Spain

INTRODUCTION

Urinary tract infection is the most frequent cause of bacteremia cases (53%). Empiric and early antibiotherapy plays an essential role in the control of the primary focus.

AIMS

To determine the proportion of cases of urinary infection in the emergency room in which we prescribed correct empirical antibiotic therapy. To know the percentage of cases in which the microorganism responsible for bacteremia with a primary urinary focus is sensitive to the initial antibiotic therapy prescribed.

METHOD

Cross-sectional descriptive study that included adult patients of both sexes treated in our service on the dates between December 27, 2016 and December 27, 2017. There were 131 people with bacteremia of any origin who were extracted blood cultures. Of these, 70 individuals with bacteremia of urinary origin were selected. The variable chosen was antibiotic therapy prescribed in the emergency department according to the clinical picture. We analyzed if it was performed empirically according to the current guidelines and if it was effective against the responsible bacteria identified by blood culture.

RESULTS

After the analysis of the 70 samples of positive blood cultures in patients with bacteremia of urinary origin, 18.6% were contaminated and the remaining 81.4% showed conclusive results. Of the latter, 26.3% belonged to patients with acute pyelonephritis. In 60% , correct empirical treatment was administered and it was found that in 66.6% the bacteria identified were sensitive to the initial antibiotic. There were 10.5% of cases of prostatitis in this study. The antibiotic chosen was ceftriaxone in 66.7% against which there was resistance in 100% of the cases. However, one patient received therapy with ciprofloxacin whose blood culture showed bacterial sensitivity to it.

63.1% had low urinary tract infection as the origin of bacteremia. Appropriate empirical treatment was applied in 77.7% (28 patients): ceftriaxone in 39% , cefuroxime in 19.4% and cefixime in 11.1% . In 75% of the cases the bacterium was sensitive to treatment. In general, correct empirical treatment of bacteremia with a urinary focus has been performed in 72% of the cases and not adequate in the remaining 28%.

In 66.7% of the conclusive blood cultures, the problem bacterium was sensitive to empirical antibiotherapy.

CONCLUSIONS

We highlight the implementation in our service of empirical antibiotic therapy in the patient with a bacteremia of urinary origin, being 72%. In 66.7% of the extracted blood cultures, bacterial sensitivity was shown in relation to the antibiotic treatment administered in the emergency department.

Among the cases of bacterial resistance (33.3%), 8% corresponded to patients who did not receive the standardized empirical antimicrobial

#19274 : Assessment of the suicidal behaviour in the emergency department**Authors:**

mariem khaldi (1), ahlem mtiraoui (2), ahmad Mahmoudi (1), z bouzaabia (2), a souilem (2), r dahmane (2), Mehdi Methamem (1), bechir ben haj (2), salma ben nasr (2)

1. emergency department farhat hached , Dr., sousse, TUNISIA
2. department of psychiatry, Dr., sousse, TUNISIA

Keywords: suicide emergency department

Abstract :

Background and aims: Suicide attempt is an important risk factor for completed suicide. Determining domains of assessment for suicide attempts is important in terms of preventive approach.

In this study, we aimed to assess clinical features of suicidal behaviour among suicide attempters in the emergency department.

Materials and methods: We conducted a cross-sectional study during one year-period. All suicide attempters over the age of 16 years old presenting in the emergency department, Farhat Hached, Sousse, Tunisia were recruited. Socio-demographic characteristics, clinical and suicidal behaviour features were collected.

Results: A total of 117 suicide attempters were recruited. Eighty nine (76.1%) were female. The median age was 23.00 years (19.00; 32.00). Among suicide attempters, 33 (28.4%) were alcohol consumers and 23 (19.7%) drug users. Thirteen (11.1%) had a family history of suicide attempts and 24 (20.7%) had a family history of mental illnesses. At the first assessment, a major depressive disorder was diagnosed in 30 (25.6%) and a personality disorder was observed in 102 (87.1%) of the suicide attempters. A previous suicide attempt was reported in 50 (42.7%) of our population with a median delay of 1 year (0.5; 4). The median age at the first suicide attempt was 20 years (17; 28).

For the current suicide attempt, suicidal ideations were described in 73 (62.4%) of our population. A stressful event had been reported by 111(94.87%) of the suicide attempters. The most common method of attempt was by use of drugs or corrosive in 105 (90.5%). Hospitalization was indicated for 25 (21.4%) of suicide attempters.

Conclusion:

Based on our findings, history of suicide attempts, suicidal ideation, and stressful life events are important to consider for assessment and preventive intervention among emergency caregivers.

#19275 : Early identification of patients at very low risk of acute coronary syndrome using triage-information and ECG only**Authors:**

Tscherny Katharina (1), Wolfgang Schreiber (2), Calvin Kienbacher (2), Verena Fuhrmann (2), Harald Herkner (2), Dominik Roth (2)

1. Medical University of Vienna, -, Vienna, AUSTRIA

2. , Department of Emergency Medicine, Medical University of Vienna, Vienna, AUSTRIA

Keywords: acute coronary syndrome, early identification, triage

Abstract :**Background**

Numerous algorithms exist for the exclusion of acute coronary syndrome (ACS), usually including laboratory test results, such as troponin. Many patients who visit an ER have very low pre-test probability for ACS. Increase of patients and rising number of laboratory tests are inevitably associated with increasing costs. The information collected at initial triage together with the ECG provides almost all information necessary to calculate risk scores such as the GRACE score. We aimed to investigate whether patients with a very low risk of ACS can already be identified at the triage in order to minimize subsequent laboratory tests.

Methods

All patients treated at the department of emergency medicine of a tertiary care hospital due to chest pain during a one-year period (2018) were included. Patients with diagnosis of ACS was already made by ambulance service or other hospitals were excluded. Using triage information and ECG, the Mini-GRACE score without laboratory parameters was calculated. Data was compared with the ACS registry from the same period and measures of diagnostic test accuracy were calculated.

Results

2,755 patients (1,199 (44%) female, age 44 [+/-] 17 years) were included. Acute myocardial infarction was diagnosed in 103 (3.7%) patients (45 (44%) STEMI). 2,562 patients (93%) had GRACE score <108 and normal ECG, and four (0.2%) of these patients had myocardial infarction. This results in sensitivity of 96.1%, specificity 96.5%, positive predictive value 51.3% and negative predictive value 99.8%.

Conclusions

Patients with a very low risk of ACS can be identified with high certainty using triage information and ECG. Cardiac biomarkers might be avoided in many cases, leading to a significant cost reduction.

Trial Registration / Funding Information (only) :

-

#19276 : Impulsiveness in suicide attempters

Authors:

mariem khaldi (1), ahlem mtiraoui (2), z bouzaabia (2), ahmad Mahmoudi (1), a souilem (2), r dahmane (2), Mehdi Methamem (1), bechir ben haj (2), salma ben nasr (2)

1. emergency department farhat hached , Dr., sousse, TUNISIA
2. department of psychiatry, Dr., sousse, TUNISIA

Keywords: Impulsiveness suicide attempters

Abstract :

Background and aims: Suicide is a serious public health problem. Several theories have been proposed to explain the mechanisms through which impulsivity might be associated with suicidal behavior. The results were controversial though.

The aim of our study was to assess impulsiveness in suicide and to determine the associations between the different dimensions of impulsiveness and clinical features.

Methods:

We conducted a cross-sectional study during one year-period. All suicide attempters over the age of 16 years old presenting in the emergency department, Farhat Hached, Sousse, Tunisia were recruited. Socio-demographic characteristics and clinical features were collected. Current symptoms were assessed with Beck depression Inventory for depression, Beck Hopelessness Scale and Barratt Impulsiveness Scale.

Results:

A total of 75 suicide attempters were recruited. Of these, 77.3% were female. The median age was 22 (18; 32) years. Thirty-seven (49.3%) suicides had at least two suicide attempts. The median age at first suicide attempt was 18 (17; 26) years. At the time of the evaluation, 67 (89.3%) had moderate to severe depression and we found 53 (70.7%) a moderate to severe risk of suicide in the evaluation of hopelessness. All suicide attempters had high scores of impulsiveness (76.94 ± 16.92), motor facet (27.08 ± 6.78), attentional facet (20.25 ± 5.07) and planning facet (29.74 ± 6.79).

Conclusions:

Our results highlight the importance of the impulsive dimension in suicide attempters. A better reading of the impulsiveness model would emphasize important aspects for the management and the prevention of the suicidal behaviour.

#19278 : Evaluation of the first use of flexible fiber optic method in airway model**Authors:**

Gözde Gök (1), P. Kubra Bağceci (1), Volkan Ercan (1), Engin Ozakin (2)

1. Department of Emergency Medicine, Eskisehir Osmangazi University/ Faculty of Medicine, Emergency Department, Eskişehir, TURKEY

2. Department of Emergency Medicine, Eskisehir Osmangazi University/ Faculty of Medicine, Eskisehir, TURKEY

Keywords: Airway model, fiberoptic, intubation

Abstract :

INTRODUCTION

Our study aims to determine fiberoptic intubation success, intubation time and degree of easy of intubation in airway models with emergency medical assistants.

MATERIAL-METHOD

The study was performed with 27 emergency medical assistant. One hour of theoretical and practical training was held with all participants. Training and applications were performed with the same airway model and flexible fiberoptic device. The data of the study were collected by researchers which included information such as vocal cord visualization time, tracheal intubation time, and degree of convenience of intubation method (1 - very difficult, 10 - very easy).

FINDINGS

Of the 27 participants, 18 (66.7%) were male. In the trial, the duration of the vocal sight ranged from 2-12 seconds (mean \pm SD; 5.03 \pm 2.1). The duration of successful intubation ranged from 6 to 44 seconds (mean \pm SD; 17.1 \pm 7.1). Among the successful participants, the duration of emergency medical assistants did not affect vocal cord vision and tracheal intubation time ($p = 0.126$, $p = 0.751$). The FO method was found to be very easy in the assessment of the degree of convenience of the successful participants (mean \pm SD; 7.6 \pm 1.4).

CONCLUSION-RECOMMENDATIONS

Emergency medical assistants are fast and easy to tracheal intubation with fiber optical device after interactive training.

#19279 : Self-assessment of third course medical students for providing first medical aid in case of disasters - epidemiological study**Authors:**

Diana Dimitrova (1)

1. , FPH, MU-Sofia, Sofia, BULGARIA

Keywords: medical students, self-assessment, first medical aid, disasters

Abstract :

Purpose. The aim of the study is to research the readiness of medical students in a third course to conduct first medical aid in emergency states, disasters, accidents and catastrophes.

Materials and methods. A survey was conducted by students of medicine in third year of study, Sofia University, winter semester, from 2016 to 2018. The questionnaire is completed at the end of medicine of disastrous situation (MCS) training - groups in Bulgarian and English. A five-degree self-assessment scale was used where: 5 is "rather sufficient" and 1 is "rather insufficient". Data is processed with SPSS19 and stored electronically. **Results.** The training of MCS students for medical specialty at MU-Sofia for the given period is held in third year. Only the data on self-assessment of students for practical and theoretical preparation of providing first medical aid is presented. The total number of students participating in the study was 1210 in three consecutive academic years. Of these, almost 40% are trainees in Bulgarian. The study indicates that nearly two-thirds of students studying MCS in Bulgarian language think they are theoretically prepared "rather sufficient" and "sufficient", but not practically. On the other hand, 80% of MCS learners in English language groups claim that they need more in-depth knowledge about the recognition and assessment of different categories of emergencies, both theoretical and practical for providing reanimation.

Conclusions. MCS training for medical students takes place prior to acquiring basic experiences in preclinical disciplines such as pathophysiology and clinical subject such as surgery and internal diseases. Early inclusion in the MCS program reflects on a good understanding of the urgent conditions and clinical manifestations at disaster situations. Good theoretical knowledge for providing first medical aid is not a sufficient factor for the efficiency and outcome of an emergency situation, especially for disasters.

#19280 : Stratification of the risk of pulmonary embolism in an emergency service according to the wells scale ¿we request for D-dimer properly?

Authors:

Cramp Vinaixa Mireia (1), Hernandez Medina Irina (1), Condon Abanto Ana (1), Mendoza Mendez Maria (1), De la Torre Trillo Marina (1), Espin Aguade Pablo (1), Berned Sabater Marta (1)

1. Emergency department , ICS Hospital Universitari Joan XXIII, Tarragona, SPAIN

Keywords: Pulmonary embolism, Venous thromboembolic disease, Stratification Risk

Abstract :

Introduction: Venous thromboembolic disease (VTE), which includes deep vein thrombosis (DVT) and pulmonary thromboembolism (PE), is the third most frequent cause of cardiovascular death, with an incidence of 1-2 people/ every 1000, every year in the USA. The incidence of PE increases exponentially with age. Its diagnosis tends to pose a challenge for the emergency physicians because of the non-specific and heterogenic signs and symptoms.

Most patients with PE usually have the following clinical significances: dyspnea, sudden onset, tachypnea, chest pain (usually substernal with pleuritic features). A differential diagnosis of pulmonary disorders has to be set out: pneumonia, exacerbation of chronic lung disease, cardiac disorders, musculoskeletal disorders or PE. In view of this characteristics, objective tests are needed to identify patients who are likely to have PE. For that, clinical prediction scales such as Wells' are necessary, taking into account the existence of previous VTE, recent surgeries or immobilization, cancer, hemoptysis, heart rate up to 100 beats/minute, clinical signs of DVT or if there is an alternative diagnosis less likely than PE. It can stratify at low, moderate or high risk. According to the result, we will decide if it is necessary an imaging test, according to the calculated risk and the indication to measure the D-Dimer in blood.

Objective: Review the indications for requesting D-Dimer in patients who attend an emergency service and thus review the correct use of the clinical scales that predict the risk of suffering a PE, such as the Wells scale.

Method: Retrospective descriptive study of the patients who D-Dimer was requested, who attended the emergency department of a university hospital of third level, in a period between 1/1/2017 and 30/6/2017. A data collection sheet was made with the clinical and sociodemographic variables previously defined. Subsequently, the data was analyzed with the statistical package SPSS.

Results: During the period described, a total of 251 D-Dimer were requested. 52% were men with a median age of 70 years. Regarding the pathological background, 83.7% had history related to a possible increase in thromboembolic risk and 29.8% of patients had specific risk factors. The scale value of Wells was collected only in 1.3% of the medical reports. D-dimer request was indicated in 57.8% of the cases. Regarding risk stratification, 79.6% had low risk and 19.6% moderate risk to suffer VTE. The median score on the Wells scale was 1 point. The D-dimer was positive in 60.8%, however when D-dimer was adjusted at age, it was positive in 46.8%.

Conclusions: As shown in the data obtained, a minimum percentage of the reports had collected the value of Wells or Geneva scale in order to stratify the risk. The evaluation of the probability of suffering VTE in a patient through clinical presentation is essential for the subsequent interpretation of complementary studies. Although, as has been demonstrated, VTE is not always suspected due to the variation of the presentation. There are numerous scales in this regard. Depending on the score given by them, the clinical probability of suffering from this disease can be concluded. Since clinical impression is often nonspecific, because many of the symptoms are common among many patients who do not have this disease, clinical prediction scales are necessary.

#19283 : Impact of a newly installed hospital-integrated walk-in clinic on case-mix and burden of an emergency department**Authors:**

Verena Fuhrmann (1), Tscherny Katharina (2), Anton Laggner (2), Dominik Roth (1)

1. , Department of Emergency Medicine, Medical University of Vienna, Vienna, AUSTRIA

2. Medical University of Vienna, -, Vienna, AUSTRIA

Keywords: overcrowding, walk-in, primary care

Abstract :**Background**

Emergency departments (EDs) are often overcrowded by patients with non-urgent health problems, which could possibly delay the treatment of critically ill patients and lead to longer waiting times, lower patient satisfaction and an overall worse outcome mostly due to overworked staff. Our study evaluated the implementation of a hospital-integrated walk-in clinic on the ED's case mix. Our goal was to assess the impact of the establishment of a hospital-integrated walk-in clinic on case-mix and burden of a tertiary-care emergency department.

Methods

Case numbers, urgency (regarding to the Emergency Severity Index (ESI)) and case mix (regarding medical speciality) of our ED was compared during a one year period before (2017) and after (2018) implementation of a hospital-integrated walk-in clinic.

Results

Total patient numbers were reduced by 30% (87,606 patients before, 61,244 after), whereas the relative proportion of patients needing in-hospital care increased from 9 to 12% ($p < 0.01$), indicating a reduction in mostly less severe cases. Proportion of urgent patients (ESI 1 or 2) increased from 13.4% to 18.1% ($p < 0.01$). Proportion of patients sent back to the ED from the walk-in clinic was as low as 8%.

Conclusion

Our study indicates that a hospital-integrated walk-in clinic significantly reduced burden at a tertiary-care ED by taking over care of non-life threatening-cases.

Trial Registration / Funding Information (only) :

none

#19286 : Readiness of medical students to understand the triage processes due to chemical accidents - epidemiological survey

Authors:

Diana Dimitrova (1)

1. , FPH, MU-Sofia, Sofia, BULGARIA

Keywords: readiness, triage, mass intoxication, medical students, disasters, Bulgaria

Abstract :

Purpose. The aim of the study is to present the readiness of students of medicine to understand the triage processes suffered injuries due to chemical accidents.

Materials and methods. A survey was conducted by students of medicine in third year of study, from 2016 to 2018. The questionnaire is completed at the end of medicine of disastrous situation (MCS) training - groups in Bulgarian and English. A five-degree self-assessment scale was used where: 5 is "rather sufficient" and 1 is "rather insufficient". Data is processed with SPSS19 and stored electronically.

Results. The total number of students participating in the study was 1210 in three consecutive academic years. In the MCS program for the students of medicine in the MU - Sofia is included section "Medical provision of the population in cases of chemical accidents". The results of the survey show that this is one of the most interesting sections in the discipline. That is what almost 89% of the respondents answer. Nonetheless, more than 2/3 consider it difficult to understand the clinical picture according to the degree of intoxication. Over 70% of students have difficulties in understanding and interpreting specific symptoms in various intoxications. The triage of the victims of mass intoxications is defined as incomprehensible by 95% of respondents. On the other hand, students are told that they are familiar with basic principles of triage in intoxication but appreciate as "rather insufficient" their knowledge of their real application in theory and practice.

Conclusions. Achieving knowledge and skills for triage is a process. In case of intoxications due to chemical accident the triage of the victims has specific characteristics. The readiness to understand triage processes in mass intoxications is rather difficult for medical students in the third year.

#19287 : Epidemiology and Outcomes of Acute Kidney Injury in an Irish Trauma Population.**Authors:**

Filip Lis (1), Owen Keane (2), John Cronin (2)

1. Tallaght University Hospital, ., Dublin, IRELAND
2. St Vincents University Hospital, ., Dublin, IRELAND

Keywords: Trauma, Acute Kidney Injury, TARN, NOCA, Retrospective audit,

Abstract :**INTRODUCTION**

Acute kidney injury (AKI) following trauma has been shown to be associated with significant morbidity & mortality. We carried out a retrospective study in order to examine epidemiology and outcomes of AKI in an Irish population.

METHODS

Major trauma patients attending a tertiary referral university hospital with an annual ED census of approximately 56,000 between 01/09/13 and 31/12/15, who were included in the Trauma Audit and Research Network (TARN) database and for whom more than one laboratory creatinine value was available, were eligible for the study. The primary outcome measure was AKI diagnosed during admission or within 30 days of arrival to hospital. AKI was defined as per the Acute Kidney Injury Network (AKIN) criteria. A logistic regression analysis was performed to identify factors associated with the development of AKI.

RESULTS

967 patients were included, 487 (50.9% were male). 116 patients (12.0%) developed AKI during the study time period. The mean age of the AKI group was 75.97 years (standard deviation (SD) 15.36) compared to 62.19 years (SD 22.18) for the non-AKI group. The AKI group had a higher mortality rate (10% vs 3%) and ICU admission was more common (16% vs 7%). Hospital length of stay was longer for the AKI group (46.2 vs 18.9 days, $p < 0.0001$). There was no significant difference in the incidence of shock or in injury severity scores (ISS) between the two groups.

DISCUSSION

The incidence of AKI in our study group was similar to previously reported studies. AKI was shown to be associated prolonged length of stay, an older cohort of patients and increased mortality. No association was shown with shock or ISS. The findings of this study should alert treating physicians to the increased incidence of AKI in older trauma patients and to its potential effect on hospital stay and mortality.

#19289 : Pulseless electric activity as the last rhythm recorded before first adrenaline administration is associated with sustained return of spontaneous circulation in out-of-hospital cardiac arrest cases with adrenaline administration

Authors:

Hideo Inaba (1), Kurosaki Hisanori (1), Kohei Takada (1), Keisuke Ohta (2), Yukihiro Wato (3)

1. Department of Circulatory Emergency and Resuscitation Science, Kanazawa University Graduate School of Medicine, Kanazawa, JAPAN
2. Emergency Medical Center, Ishikawa Prefectural Central Hospital, Kanazawa, JAPAN
3. Department of Emergency Medicine, Kanazawa Medical University, Uchinada, JAPAN

Keywords: Adrenaline, cardiac arrest, return of spontaneous circulation

Abstract :

Backgrounds and Aims: Adrenaline is administered to patients with out-of-hospital cardiac arrest (OHCA) after basic life support and/or advanced airway management. Time interval between start of CPR by emergency medical service (EMS) and adrenaline administration varied depending on regions, levels of EMS and circumstances of OHCA. It is not rare that ECG rhythm conversion from the initial rhythm to other rhythms are recorded during the BLS period. The first goal of basic and advanced life supports in OHCA cases is sustained return of spontaneous circulation (SROSC) although benefit of each resuscitation procedure should be determined by neurologically favourable outcome. This study aimed to identify the factors associated with SROSC in OHCA groups with adrenaline administration before and after hospital arrival (prehospital and in-hospital first adrenaline groups), with consideration of ECG rhythm changes before adrenaline administration.

Methods: In this retrospective analysis of prospective data collection, we extracted the data for 3,729 adult (≥ 8 y) OHCA cases with adrenaline administration before hospital arrival and 4,070 cases with adrenaline from the population-based OHCA data that were prospectively collected during the period of 2011–218. Univariate and stepwise multivariable logistic regression analysis were applied to disclose the factors associated with SROSC.

Results: The rates of ECG rhythm conversion in prehospital and in-hospital first adrenaline groups correlated with the initial rhythm ($P < 0.01$): 59.5% and 72.9%, respectively in cases with ventricular fibrillation/tachycardia (VF/VT) as initial ECG rhythm, 24.3% and 43.0% in pulseless electric activity (PEA), 7.0% and 5.6% in asystole. In univariate analyses, both initial rhythms and the last rhythms recorded before first adrenaline administrations were associated with SROSC ($P < 0.01$). However, the rate of SROSC was highest when the initial ECG rhythm was VF/VT (43.1% and 35.9%, in prehospital and in-hospital first adrenaline groups respectively) and when the last rhythm recorded before adrenaline administration was PEA (46.1% and 35.9%, respectively). Stepwise multiple logistic regression analyses revealed that PEA as the last rhythm recorded before adrenaline administration was better predictor of SROSC than VF/VT as initial ECG rhythm and that an interaction for SROSC exists between the initial and last ECG rhythms. Any prehospital defibrillation attempt before the first adrenaline administrations was not a major factor associated with SROSC: $P = 0.23$ and $P = 0.69$, in prehospital and in-hospital adrenaline groups, respectively. The overall rate of SROSC in the prehospital first adrenaline group (24.9%, 928/3729) was higher than that in the in-hospital first adrenaline group (15.8%, 644/4070).

Conclusions: Rhythm conversions to PEA before first adrenaline administration are likely to be associated with SROSC. PEA as the last rhythm recorded before adrenaline administration is a good predictor of SROSC.

#19290 : Comparing of five biomarkers in sepsis evaluation in Romanian patients

Authors:

Mihai TOMA (1), Caius Bogdan TEUSDEA (1)

1. Emergency Department, University Emergency Central Military Hospital „Dr. Carol Davila” Bucharest, Bucharest, ROMANIA

Keywords: sepsis, biomarkers, procalcitonin, suPAR , presepsin

Abstract :

Background: Sepsis is a potentially fatal whole-body inflammation (a systemic inflammatory response syndrome or SIRS) caused by severe infection. Biomarkers are widely used in clinical practice and they are useful for monitoring the infectious process. Procalcitonin (PCT), lactate and C-reactive protein (CRP) have been most widely used, but even these have limited abilities to distinguish sepsis from other inflammatory conditions or to predict outcome. The aim of our study was to investigate the role of new biomarkers such soluble urokinase-type plasminogen receptor (suPAR) and presepsin (PSP) in patients with sepsis. **Methods:** Between July – December 2018, blood samples were taken after obtaining informed consent from 35 patients with sepsis. We determine five biomarkers: leucocyte, procalcitonin (PCT), lactate, suPAR and presepsin. We obtained clinical data and calculate SIRS and qSOFA score. Statistical analysis was performed with *StatDirect* program. **Results:** For the analyzed lot, that includes 35 patients, the rapport M vs. W was 68/32%, average age was 53.5 ± 23.47748512 years, fever was $37.83076923 \pm 0.627673768^\circ\text{C}$, 78% have more than 2 SIRS criteria, and more than 20% have minimum 1 qSOFA criteria. The mean period of hospitalation was 7.75 days. The mean values for the biomarkers were: leucocyte 17038.46/ml, procalcitonin 1.166666667 $\mu\text{g/ml}$, lactate 1.355555556 mmol/l, suPAR 5.583333333 ng/ml and presepsin 260.1538462. **Discussion & Conclusions:** PCT and CRP are main markers used in clinical practice and are more useful to rule out infection. PCT is the most studied biomarker that guides early stopping of antibiotic therapy in adults. In our study elevated suPAR and presepsin was associated with more hospitalization days, and was much better correlation with elevation of leucocyte than procalcitonin.

#19293 : Evaluation of medical simulation training in gestures and emergency care delivered to healthcare professionals

Authors:

Dorra Loghmari (1), Chrifa Benchikh (2), Anas Boukadida (3), Abdoulghani Abdouraman Meigag (3), Chrifa Aouini (3), Rabeb Mbarek (4), Naoufel Chebili (3)

1. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, soussse, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 , CHU sahloul soussse, soussse, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 , CHU sahloul soussse, SOUSSE, TUNISIA

Keywords: Evaluation, medical simulation, emergency,healthcare professionals

Abstract :**Evaluation of medical simulation training in gestures and emergency care delivered to healthcare professionals**

D LOGHMARI ,C BEN CHICK,A BOUKADIDA, A MEIGAG,R MBAREK,N CHEBILI.

BACKGROUND

Simulation becomes a cornerstone in the initial and ongoing training of health professionals. It provides knowledge and skills without risk to the patient. Like any educational intervention, it requires continuous evaluation.

The aim of the study was to evaluate a simulation training program by studying its educational contribution in the medium and long term learning and acquisition process.

METHODS

Descriptive, single-center, cross-sectional study involving all health professionals participating in simulation medical training courses organized by the training center (CESU) between 2012 and 2017.

Each participant was asked to complete a questionnaire via Google Drive, sent by e-mail.

Our evaluation was based on the Kirkpatrick model, which is an evaluation on 4 levels: reaction (overall satisfaction), learning (knowledge, knowing how to be and know-how), transfer (change in behavior and attitudes in daily practice) and results (clinical impact).

RESULTS

The participation rate was 67%. The majority of participants were paramedics. Training was part of continuing education in 68% of cases. The participants were generally satisfied with the training, especially its realism. The average score was 7.8. The third felt emotionally destabilized. Participants found that they acquired knowledge (in 86% of cases), technical skills (in 81% of cases) and non-technical skills (in 73% of cases), which were transferred to clinical practice. According to the majority of learners, there was a change in behavior during the return to work, with participants reporting increased self-confidence and improved collaboration with their team members. positive, care-related incidents were reduced by 47% of participants, and 48.5% of the improvement in participants' performance was noticed by their supervisors.

The simulation training program organized by the CESU was very appreciated by the participants. They want this type of training to be mandatory in the curriculum of any health professional.

Conclusion

Although simulation is a popular learning method, its effects on patient management remain to be proven. The major obstacle to evaluating the real impact of this educational intervention is the difficulty of developing valid assessment tools.

Trial Registration / Funding Information (only) :

NO FUNDING

#19294 : Forms of training of the teams providing emergency medical care in Bulgaria - a retrospective 20-year study**Authors:**

Diana Dimitrova (1)

1. , FPH, MU-Sofia, Sofia, BULGARIA

Keywords: postgraduate studies, Emergency Medicine teams, Bulgaria

Abstract :

Purpose. The purpose of the study is to investigate the forms of post-graduate emergency medicine training of the personnel of the Center for Emergency Medical Care (EMCC) in Bulgaria.

Materials and methods. An epidemiological study of staff of EMCC Blagoevgrad for forms of training of staff in 2014 was conducted. The field study is exhaustive. Data is processed with SPSS19 and stored electronically. A database of the Ministry of Health has also been used for a period of 20 years.

Results. In the period 1999 - 2001. Systematic training of the senior and middle medical staff from EMCC in Bulgaria was implemented. Funding is provided under the Loan Agreement with the World Bank. The number of trained people during the period is 4548. Of these, senior medical staff 1330, average medical staff 2099 and drivers 1085. Since 2001, sporadic staff training has been performed within specialized courses, with training being an exception rather than systemic activity. In the period 2012-2014, the first post-2001 systemic training of the EMCC staff was presented on the territory of the country. Funding is provided under the Operational Program "Human Resources Development" within the framework of the "Practical Introduction to the Treatment of Emergency Situations" Project. The number of people trained by 2014 is 5580, of which doctors - 1339, medical specialists 2219, drivers 2022.

Conclusions. The training of EMCC staff is a guarantor of quality in the provision of emergency aid. For the surveyed period only two systemic trainings of the personnel of EMCC in Bulgaria were organised. With recommendations from the epidemiological survey of 2014, modernization measures have been taken. The guideline is to master techniques for rendering emergency help during air ambulance transport. A training program for telemedicine personnel is foreseen.

#19296 : Paediatric outpatient antibiotic therapy (p-opat) in Edinburgh : Three years of safely reducing hospital admission**Authors:**

Jennifer Orr (1), Jennifer Smith (2)

1. , NHS Lothian, Edinburgh, UK

2. , NHS Lothian, edinburgh, UK

Keywords: Paediatrics, Antibiotics, outpatient antibiotic therapy, OPAT, patient safety.

Abstract :**Background**

Within adult medicine the evidence base to support outpatient parenteral antibiotic therapy (OPAT) is well established. The British Society for Antimicrobial Chemotherapy conference in 2015 highlighted the paucity of evidence supporting this in the paediatric setting. In recent years as ownership of OPAT among paediatricians treating inpatients has increased the evidence base has expanded but there is less about OPAT in children with acute infectious presentations.

This study reports how a standardised paediatric protocol can allow safe patient management and reduce hospital admissions. It highlights the patient factors which may help us predict patients who are more likely to be admitted.

Method

This study audited all patients enrolled in the Paediatric OPAT service in the Royal Hospital for Sick Children, Edinburgh, a tertiary care paediatric emergency department which sees 55,000 children per annum.

Data was collected prospectively for three years from September 2015-2018.

Eligible patients included those who had no other need for hospital admission other than IV antibiotics, who's infection and co-morbidities had a predictable and stable disease course, and for whom there was no equally good oral antibiotic. Patient's social circumstances, availability of transport to the hospital and acceptability to the family were also taken into account. Outcomes studied included indication for treatment, patient demographics, duration and type of treatment given, admissions and patient outcomes.

Results

499 patients used the paediatric outpatient parenteral antibiotic therapy service between September 2015-2018. Ages ranged from 2 months to 17 years.

433(87%) patients safely completed treatment using this method without complication or admission. 66 (13%) patients required admission for inpatient care.

Patients requiring admission were more likely to have had a temperature above 38 degrees at presentation ($p=0.0008$), a higher initial white cell count ($p=0.0213$) a higher initial neutrophil count ($p=0.0020$) and a higher initial C reactive protein ($p=0.0001$). Age under 2 did not increase likelihood of admission.

No patients required escalation to critical care.

Discussion and conclusions:

Paediatric OPAT is a safe management strategy for eligible patients. The use of this service allowed successful treatment of 87% of patients, without the need for hospital admission. We can use this data to recognise groups at higher risk of admission. The financial implications of this for the NHS are favourable. Qualitative data on the acceptability of this service to the patient and their families is currently being collected but provisional data suggests it to be very favourable.

Antibiotic stewardship in a time of increasing bacterial resistance remains extremely important.

#19299 : Road accidents in Bulgaria – the survey of emergency medical care teams in Blagoevgrad region for providing triage**Authors:**

Diana Dimitrova (1)

1. , FPH, MU-Sofia, Sofia, BULGARIA

Keywords: road accidents, triage, emergency medical care teams, Bulgaria

Abstract :**Background**

Road traffic catastrophes (RTC) in Bulgaria are a significant risk factor for traumatism among the population. In the case of mass traumatism, medical triage (MT) is an important practical tool in the healing process within the scope of Emergency medicine specialty in the country. The main field of application and implementation of MT refers to the teams of the emergency medical care center (EMCC). The experience in this direction is significant for the terrestrial medical transport teams in the country. The aim of the study is to examine and analyze the readiness of medical teams of EMCC and Self-assessment of readiness for conducting medical triage in the case of mass traumatism.

Methods

A questionnaire survey with the teams of EMCC-Blagoevgrad region was conducted - 300 responders. On the other hand available (EMCC and GDFSCP) databases are researched and analyzed as well for 10-year period.

Results

Over 10 years, more than 5,000 people died in the RTC, and more than 9,000 people were injured. For the period January – March 2018, in the RTC more than 100 people die, and 1500 injured. The survey shows that 60% are seriously injured. Of these by the nature of traumatism: with immediate vital disturbances T1, (20-40%); group T2 (20%); T 3 (40%); T4 (20%). Specialists with Emergency Medicine specialty in EMCC is only about 1% of the staff. The importance of MT is reported by about 60% of staff, but just 5% say they know how. More than 80% say there should be specific MT training.

Conclusions

There is a significant number of victims of road accidents in the country. The distribution of MT in subtypes specifies it. The need for MT implementation by EMCC teams is available. These teams are the main contractors of MT and need specialized training for MT application.

#19301 : Influence of air pollution and climate variables on the number of hospital admissions due to exacerbation of COPD or asthma**Authors:**

Raul Lopez Izquierdo (1), Ana Cerezo-Hernandez (2), Daniel Alvarez (2), Fernando Moreno (2), Del Campo Felix (2), Virginia Carbajosa Rodriguez (3), Samsara Lopez (4), Irene Cebrian Ruiz (3), Henar Bergaz Diez (3), Henandez Gajate Mario (3), Jesus Alvarez Manzanares (3), Jesus Angel Moche Loeri (3), Isabel Gonzalez Manzano (4), Jose Ramón Olivás Ramos (3), M^a Antonia Udaondo Cascante (5), Francisco Martín Rodríguez (6)

1. Emergency Department, Río Hortega University Hospital, Valladolid, SPAIN
2. Pneumology department, Río Hortega University Hospital, Valladolid, SPAIN
3. Emergency Department, Río Hortega University Hospital, Valladolid, SPAIN
4. Emergency Department, Hospital Universitario Río Hortega. Valladolid, Valladolid, SPAIN
5. Radiology department, University Hospital of Burgos, Burgos, SPAIN
6. Prehospital emergency medical service, Gerencias emergencias Sanitarias. Sacyl, Valladolid, SPAIN

Keywords: COPD; Asthma; Admissions; Pollution

Abstract :

Background. A number of studies reported a link between air quality and negative health effects. Particularly, high levels of air pollutants are related to a worsening of chronic respiratory diseases, leading to an increased number of hospital admissions and outpatient visits. Several factors influence the exposure to intra-urban air pollution, such as traffic density and climate.

Aim. To assess the influence of air pollutant levels and climate data on the number of hospital admissions due to chronic obstructive pulmonary disease (COPD) and asthma exacerbations in Valladolid (Spain).

Material and methods. Retrospective ecological study. Time series of the number of COPD and asthma patients hospitalized in the Pneumology service between July 2014 and December 2017 due exacerbation of their condition were analyzed. Weekly average levels of sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), ozone (O₃), particulate matter with a diameter less than 2.5 (PM_{2.5}) and 10 (PM₁₀) micrometers, temperature (T), and rainfall (R) were obtained from publicly available data of the Valladolid city council. A generalized linear model with Poisson distribution was used to characterize the link between air pollution and climate variables with the number of admissions.

Results. A total of 1646 patients reported worsening of their COPD or asthma, which led to 2990 visits to the Emergency Department (ED) in the period of study: 1968 due to COPD and 1022 due to asthma exacerbation. 67.7% of patients visited ED one time, whereas 15.4% two times and 16.9% at least three times. Finally, 1644 individual admissions in the Pneumology service were assessed. Patients had a mean age of 66.0±5.9 years old (57.7% males). A significant correlation (p -value <0.05) between the number of hospitalizations and several independent variables (O₃, PM_{2.5}, NO₂, CO, T, and R) was obtained. The CO concentration showed a significant high correlation (Rho 0.45; p <0.01) as well as the highest influence on the number of COPD/asthma-related admissions (odds ratio 3.06; CI95% 2.90-3.22). After considering confounding factors, the influence of carbon monoxide remains (odds ratio 1.33; CI95% 1.24-1.44). Similarly, the temperature also achieved a significant negative correlation (Rho -0.593; p <0.05) and showed a relevant link (odds ratio 0.96; CI95% 0.96-0.97) with the number of admissions.

Conclusion. Our results suggest that there is a significant association between the number of hospital admissions due to COPD and asthma exacerbations and ambient levels of carbon monoxide and temperature.

#19302 : A randomized, double blind placebo-controlled study of methoxyflurane plus standard of care analgesia versus placebo plus standard of care analgesia for moderate to severe pain associated with trauma (The PenASAP Study)

Authors:

Agnès Ricard-Hibon (1), Nathalie Lecoules (2), Dominique Savary (3), Eric Wiel (4), Frédéric Adnet (5), Marion Douplat (6), Patrick Deschamps (1), Karim Tazarourte (7), Laurent Jacquin (7)

1. Emergency Department, SAMU 95, CHG Pontoise-Beaumont/Oise, Pontoise, FRANCE
2. Emergency Department, CHU Purpan, Toulouse, FRANCE
3. Emergency Department, Centre Hospitalier Annecy Genevois, Annecy, FRANCE
4. Emergency Department-SAMU du Nord, CHU Lille, Lille, FRANCE
5. Emergency Department, SAMU 93, AP-HP, Hôpital Avicenne I, Bobigny, FRANCE
6. Emergency Department, Hôpital Lyon Sud, Hospices Civils de Lyon, Lyon, FRANCE
7. Emergency Department, Hôpital Edouard Herriot, Hospices Civils de Lyon, Lyon, FRANCE

Keywords: acute pain, analgesia, emergency department, inhaled analgesic, injury, methoxyflurane, Pentrox[®], trauma

Abstract :

Background: Oligo-analgesia is common in the emergency department (ED). Methoxyflurane (Pentrox[®]), a non-opioid, self-administered, analgesic is approved in Europe for the emergency relief of moderate to severe pain in trauma patients. This study aimed at demonstrating the superior efficacy of Methoxyflurane (Pentrox[®]) + standard of care (SoC) analgesia (multimodal analgesia) over placebo + SoC for the management, at emergency department (ED) admittance, of moderate to severe pain secondary to trauma.

Methods: A randomised, double-blind, multicentre, placebo-controlled trial conducted at eight EDs in France between May and December 2018. Eligible patients were alert subjects (≥ 18 years) admitted to ED for pain secondary to trauma [pain score ≥ 4 on the 11-point numerical rate scale (NRS) at admission]. Patients were randomised to receive either one or 2 inhalers containing each 3 mL of methoxyflurane or 5 mL of matched placebo in association with SoC. Randomization was stratified by gender, centre and pain score at baseline (moderate pain: NRS 4-5; severe pain: NRS 6-10). The primary endpoint was the time until pain relief (PR) defined by the duration between the start of the study treatment (T0) and pain relief (≤ 30 on the visual analogic scale (VAS)). VAS was assessed electronically on tablets devices at least at 5, 10, 15, 20, 30, 60, 90 and 120 min.

Results: 359 patients were randomised and 351 were analysed for efficacy (178 Pentrox[®]; 173 placebo). Baseline characteristics were comparable between groups with a median VAS at T0 of 66 mm and 263/351 (75%) patients with severe pain. Main trauma localisations were upper limb (43%) or lower limb (35%) and main type of injury were contusion (34%), fracture (20%), sprain (19%), or wound (17%). Median time to PR was 35 min (95% CI: 28 to 62) in the Methoxyflurane-SoC group and not reached (NR) in the SoC-placebo group (92 to NR) [HR=1.93 (1.43; 2.60), $p < .001$]. Efficacy increased in the severe pain subgroup with a hazard-ratio (HR) at 2.52 (1.71; 3.72). The proportion of responders (VAS decrease $> 30\%$) at 60 mn was 76% (n=135/178) in the Methoxyflurane -SoC vs. 55% (n=94/172) in the SoC-placebo group, $p < 0.01$. 67/178 (37.6%) in the Methoxyflurane-SoC group and 47/173 (27.2%) in the SoC-placebo group did not received any SoC analgesia. 6/178 (3.4%) in the Methoxyflurane -SoC group and 9/173 (5.2%) in the SoC-placebo group received strong opioids. Two severe adverse events (AEs) occurred in the Methoxyflurane-SoC group including one that was assessed as related to treatment and most AEs (dizziness, feeling drunk, somnolence) were of mild (111/147) or moderate intensity (34/147).

Discussion & conclusions: This double-blind controlled trial demonstrated that Pentrox[®] in multimodal analgesia is superior to SoC-placebo in achieving pain relief for trauma patients. The results confirm the rapid onset of action of Pentrox[®]. Treatment efficacy increased in patients with severe pain.

Trial Registration / Funding Information (only) :

Trial Registration: This study has been registered under EUDRACT N° : 2017-004469-28 Funding: This study was funded by MundiPharma SAS (the sponsor of the study)

#19303 : Civil protection and medical provision of the population due to fires in Bulgaria – statistical survey**Authors:**

Diana Dimitrova (1)

1. , FPH, MU-Sofia, Sofia, BULGARIA

Keywords: civil protection, medical provision; fires; Bulgaria

Abstract :

Background. Fires are typical disasters for Bulgaria. They create an outbreak of traumatic defeat with plurality striking factors. Health consequences for society due to fires are a serious challenge front of medical provision system in the country and part of civil protection mechanism (CPM). The aim of the study is to examine and analyze the medical provision aspects of the consequences of fires for the last five years period and aspects of CPM.

Methods. Specialized statistical survey about disasters on the territory of the country for the period 2013-2017 and for casualties of fires for the period 1995-2017 is described.

Results. During the surveyed period, the most affected by fires are: Stara Zagora (over 2300), Dobrich (over 1800) and Burgas (near 1500) regions. The data indicate that the most common causes of the fires are technogenic - over 85%, and nearly 10% are deliberate. Among the population the largest number (144 people) died in 2017, and the highest number (349) injured in 2012.

Conclusions. There is a large number of people killed and injured in the country due to fires. The consequences are significant. Teams of the unified rescue system 112 have an action plan for fires as part of civil protection mechanism and medical provision for the population. Since 2016 there is a methodology and mapping of the risk of fires on the territory of the country which improves the management and the medical provision activities.

#19305 : Regional cardiac arrest center: First experience with regionalization of post-resuscitation care from the regional cardiology center**Authors:**

Jiri Seiner (1), Jiri Seiner (2), Matej Strycek (2), Rostislav Polasek (3), Petr Ostadal (4), Jan Lejsek (5), Jiri Karasek (6)

1. Cardiology, Hospital Liberec, Liberec, CZECH REPUBLIC
2. Dpt. of Cardiology , Hospital Liberec, Liberec, CZECH REPUBLIC
3. Dpt. of Cardiology, Regional Hospital Liberec, Liberec, CZECH REPUBLIC
4. Cardiology, Hospital Na Homolce, Prague, CZECH REPUBLIC
5. Emergency Medical Service, Region Liberec, Liberec, CZECH REPUBLIC
6. Dpt. of Cardiology, Regional Hospital Liberec, Emergency Hospital Service ASČR Praha-Západ, Liberec, CZECH REPUBLIC

Keywords: CPR cardiac arrest center OHCA

Abstract :**Introduction:**

Out-of-hospital cardiac arrest (OHCA) is one of the most common causes of death in the adult population in developed countries. Regionalization^[JK1] of post-resuscitation care may improve the patients ^[JK2] prognosis. Expert opinion^[JK3] of the Czech Society of Cardiology recommends establishing cardiac^[JK4] arrest centres using the infrastructure of existing tertiary cardiac centres. This system has been introduced in the region of Liberec since April 2016. The aim of our work is to present the one year results compared to the results from previous years.

Methods:

All patients treated in cardiac arrest center of Liberec regional hospital after OHCA from 1.4. 2016 to 1.4. 2017 were consecutively enrolled. Neurological status and mortality were evaluated for a time period of 30 days from the day of admission. Data were compared to the registry of patients hospitalized in the cardiology department after OHCA and successful resuscitation from 1.1.2013 to 31.12.2015.

Results:

An increase of primarily transported patients of 26% (0.81 vs. 1.13 patient / week) was recorded^[JK5] after the establishment of the Cardiac Arrest Centre. There was a statistically significant increase in the proportion of patients with non-shockable rhythm (25 vs. 43%, p: 0.013). Despite this, the proportion of patients with cardiovascular cause of cardiac arrest did not change (71.4 vs. 77.3%). There was also no reduction in the proportion of patients with acute coronary syndrome (47.6 vs. 44.3%). There was no statistically significant change of the proportion of patients undergoing selective coronarography (63.9 vs 54.1%) and percutaneous coronary intervention (35 vs. 34%). There was an increase in 30-day mortality, which is not statistically significant (35 vs. 49%, p: 0.096). Most of the surviving patients (75.4 vs. 71%) were in a good neurological condition.

Conclusion:

Centralization of post cardiac arrest care using previously established infrastructure is feasible in our region and led to increase of directly transported patients as well as the total number of patients admitted without increasing the proportion of patients with non-cardiac cause of OHCA. There was no significant change in mortality and neurological outcome.

Trial Registration / Funding Information (only) :

n/a

#19307 : "Volunteer" does not mean "amateur"

Authors:

Marius Smarandoiu (1), Dania Lunca (1)

1. SMURD, SMURD Sibiu, Sibiu, ROMANIA

Keywords: EMS, pre-hospital, emergency

Abstract :**Context**

SMURD is the top emergency rescue service in Romania. SMURD service started 28 years ago, as a full volunteering service, being completely unusual, generating many reactions from authorities who considered volunteering equal to amateurism. In time, it turned out that volunteering can mean high professionalism. Even today volunteering in emergency medicine is still regarded with reserve by specialists. SMURD-Sibiu organizational model is unique in Romania and maybe Europe, unchanged for nearly 25 years. All Intensive Care Unit(ICU) paramedics are medical students, all volunteers. This study intends to prove its professionalism.

Methods

This is a retrospective study that uses and analyses at national scale: 589873 cases of SMURD(01.01.2010-31.12.2012). SMURD Sibiu resuscitation outcome rate is compared with all other top 10 centres in Romania. To prove the team performance we compare all ICU(Intensive Care Unit) urban cases. Software used for statistical analysis: SQL and SPSS.

Results

Comparing First Aid teams, Sibiu is not best, occupying a medium rank, but for ICU(Intensive CareUnit), Sibiu volunteer team is positioned on the first place in front of other well known emergency medical centres like Mures, Cluj, Timisoara, teams constituted by hired professional medical personnel.

Conclusion

With proper training and motivation a volunteering medical system can be at least as good as any professional hired personnel but less expensive. This organizational model is a proof that professionalism and responsibility is not always related to a professional paid contract. Volunteers are society's unsung heroes.

#19308 : Effectiveness of Intubating Laryngeal Mask Airway in managing out-of-hospital cardiac arrest by non-physicians**Authors:**

Elena-Laura Lemaitre (1), Laurent Tritsch (2), Eric Noll (3), Pierre Diemunsch (3), Nicolas Meyer (4)

1. Emergency Department, University of Strasbourg, Strasbourg, FRANCE
2. Fire and Rescue Department Bas-Rhin, University of Strasbourg, Strasbourg, FRANCE
3. Department of Anaesthesiology, Critical Care and Prehospital Emergency Medicine, Strasbourg, FRANCE
4. Laboratory of Biostatistics, University of Strasbourg, Strasbourg, FRANCE

Keywords: Out-of-hospital cardiac arrest Emergency medical services Airway management Endotracheal intubation Supraglottic airway devices

Abstract :

Aim of the study: The role of supraglottic devices in airway management in out-of-hospital cardiac arrest (OHCA) remains controversial. The aim of this study was to evaluate the feasibility and effectiveness of intubation through the Intubating Laryngeal Mask Airway (ILMA) when used by trained prehospital emergency nurses (ISP) in the setting of OHCA.

Methods: We conducted a prospective, observational trial during 12 years by the prehospital fire and emergency service of the health district of Strasbourg, France. The primary outcome was to determine the success rate of ventilation after insertion of the tracheal tube (TT), while the secondary outcomes were to determine: the rate of the success of the ventilation after insertion of the ILMA, the factors associated with successful intubation, complications related to ILMA placement and intubation. The data were analyzed according to the Bayesian paradigm.

Results: One hundred and sixty two nurses completed the training course and attended 1464 patients during the study period. On average, the ISP performed 9 interventions, with a minimum of 1 and a maximum of 141. The ISP women performed a total of 801 interventions (8 interventions on average) and the men performed 657 interventions (10 interventions on average). ISP women outnumbered men, with a sex ratio male/female=0.64. Half of ISP (women and men) completed more than 4 interventions. On average, ISP received 5.39 training sessions (SD 3.25). Half of the interventions concerned ISP who had received 5 training sessions. Regarding the experience of the nurse or the number of training session, we observe that the success rate remains constant over time. Number of laying in emergency refer to experience of the ISP (how many time he has utilise the ILMA before the current intervention). As far as the number of attempts with the ILMA is concerned, the OR is less than 1 which means that more on trying to introduce the mask, the less we succeed. In the second time the success rate decreases by 20 times.

In 35 cases (2.39%) intubation was considered difficult. After ILMA placement, ventilation was possible in 1250 patients (85.38%) and in 1078 patients (73.63%) after tracheal tube insertion. Regurgitation of gastric contents occurred in 237 (16.18%) patients.

Three variables were associated with the success of intubation: the use of the Chandy maneuver OR=2.223 (CI:1.559-3.067), the number of ILMA insertion attempts OR= 0.114 (CI: 0.075-0.164) and the number of tracheal tube insertion attempts OR=2.057 (CI:1.504-2.765).

Conclusion: In conclusion, the use of ILMA is feasible and allows effective airway management when performed by trained non medical healthcare professionals during OHCA. This prospective study found a success rate of ILMA insertion at 85.38%. Successful ventilation after intubation was possible in 73.63% of cases. The most common complication was regurgitation, which was found in 16.18% of cases. Three factors were predictive of a successful intubation: the realization of the Chandy maneuver, the number of insertion of the ILMA and the number of attempts with the tracheal tube.

Trial Registration / Funding Information (only) :

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#19311 : A thrombotic headache**Authors:**

Filip Lis (1), Lai Pun Tong (1), Maura Grummel (1), Aileen McCabe (1)

1. Tallaght University Hospital, ., Dublin, IRELAND

Keywords: Cerebral Venous Thrombosis, Case report, neurology, atypical presentation

Abstract :**Case**

A 46-year-old man presented to the emergency department (ED) with a one-week history of a right occipital headache and ipsilateral neck tenderness. He denied recent infective symptoms. Examination of the central and peripheral nervous system was normal. The right temporal veins were noted to be dilated. The patient's medical history included bipolar disorder and chronic kidney disease. His regular medications at presentation were lithium and lamotrigine.

An initial plain Computed Tomography (CT) Brain demonstrated an asymmetric hyper-density in the right transverse and sigmoid sinuses and an internal thrombus was considered. A subsequent CT venogram demonstrated a failure of opacification of the right transverse sinus, and the right sigmoid sinus venous sinus thrombosis.

He was anticoagulated first with therapeutic enoxaparin and then switched to warfarin. The patient's symptoms improved within two days of therapeutic anticoagulation and he was discharged with a plan to remain on warfarin for six months.

Discussion

Cerebral venous thrombosis (CVT) refers to the presence of a blood clot in either the deep or superficial venous drainage systems of the brain. CVT is uncommon that affects approximately 5 people per million annually and accounts for 0.5% to 1% of all strokes. CVT is more commonly seen in young individuals (patients <50 years of age).

The Virchow triad of stasis of the blood, changes in the vessel wall and changes in the composition of the blood are the classical risk factors for venous thrombosis. The more frequent risk factors for CVT are prothrombotic conditions, either genetic or acquired, oral contraceptives, puerperium and pregnancy, infection and malignancy. No cause is identified in 12.5% of cases. No cause has been identified in our case to date.

Diagnosing CVT can be challenging due to the diversity of its clinical symptoms and modes of onset which can mimic other disorders.[2] Headache, seizures, focal neurological deficits, altered consciousness and papilloedema can present in isolation or in association with other symptoms.[2] Emergency physicians should consider CVT in patients with headache with any of the known predisposing conditions listed above.

Although a plain CT or magnetic resonance imaging (MRI) is useful in the initial evaluation of patients with suspected CVT, a negative plain CT or MRI does not rule out CVT. A venographic study (either CT or MRI) should be performed in suspected CVT if the plain CT or MRI is negative or to define the extent of CVT if the plain CT or MRI suggests CVT.

For patients with CVT, initial anticoagulation with adjusted-dose unfractionated heparin or weight-based low molecular weight heparin in full anticoagulant doses is recommended. Vitamin K antagonists are then recommended for a period of 3- 12 months with a target international normalised ratio of 2.0- 3.0 depending on whether the CVT was provoked or not.

The prognosis of CVT is in general favourable, as only around 15% of the patients remain dependent or die. Seizures can occur in 11% of patients and severe visual loss is now very rare.

#19313 : A profile of toxicological management on poisoned patients: 53-month experience of medical toxicology consultation services in Bangkok, Thailand**Authors:**

Supa Niruntarai (1), Kaewwalee Kaewnil (1), Rittirak Othong (1)

1. Department of emergency medicine, Navamindradhiraj university, Bangkok, THAILAND

Keywords: ToxIC Registry, Toxicological management, Toxicology services

Abstract :**Background:**

Toxicology consultation services, Department of Emergency Medicine, Vajira Hospital was started in 2012 and then has participated in the multisite Toxicology Investigators Consortium (ToxIC) Registry since August 2013. ToxIC is a national-wide research and collaboration network, initiated by the American College of Medical Toxicology (ACMT) to support multi-center research studies. Our objective was to determine the profile of toxicological management on poisoned patients in Vajira hospital, an urban academic hospital in Bangkok, reported in the ToxIC registry.

Method:

This was a retrospective descriptive study. The ToxIC Registry database was queried for patients who had been consulted on to our services for the time period from August 2013 to December 2017, with a focus on toxicological management. The authors excluded those whom were recorded in the toxicological logbook but the case report forms (CRFs) and the corresponding data in the ToxIC database were missing.

Results:

Over the 53-month-period, 1,293 cases were reviewed. Toxicologic treatments were given to 525 (40%) cases. Regarding decontamination procedures, gastric lavage was performed on 23 (4.4%) patients, single-dose activated charcoal was administered to 31 (5.9%) patients, and whole-bowel irrigation had never been done. The most commonly administered antidotes included N-acetylcysteine (7.6%), naloxone (4.8%), and thiamine (4%), respectively. Snake antivenom was given to 8% of total patients bitten by venomous snakes. Of enhanced elimination interventions, multiple-dose activated charcoal (MDAC) was prescribed occasionally (3.4%). Only 3 (0.6%) patients received hemodialysis.

Discussion & Conclusions:

Our study demonstrated that less than half of poisoned patients required toxicological treatments. Gastrointestinal decontamination and enhanced elimination were rarely done. The results were similar to those reported in the American Association of Poison Control Centers' National Poison Data System Annual Reports.

#19315 : Preliminary results of a one-year emergency medicine training program in a low-resource setting**Authors:**

Kaniz Farwa Haider (1), Farah Dadabhoy (2), Kaniz Farwa Haider (1), Megan Rybarczyk (3), Syed Ghazanfar Saleem (4), Zayed Yasin (5), Saima Salman (4), Lubna Samad (6), Charles Kemmler (7)

1. Research Associate, Global Health Directorate, Indus Health Network, Karachi, PAKISTAN
2. Emergency Medicine Resident, Harvard Medical School, Boston, USA
3. International Emergency Medicine Fellow, Harvard Medical School, Boston, USA
4. Consultant Emergency Physician, The Indus Hospital, Karachi, PAKISTAN
5. Consultant Emergency Physician, CPS Medical Group, Boston, USA
6. Program Director, Global Health Directorate, Indus Health Network, Karachi, PAKISTAN
7. Emergency Medicine Resident, University of Pennsylvania, Philadelphia, USA

Keywords: Emergency medicine, Emergency care, Pakistan, Education, Training, Emergency providers, Resource-limited, LMIC

Abstract :

Pakistan has an under-developed and overburdened emergency care system. Most Emergency Departments (EDs) are staffed by physicians with no formal Emergency Medicine (EM) training, which often results in poor patient outcomes. By the beginning of 2019, only seven institutes had been officially recognized to provide formal EM training in Pakistan, leading to a persistent gap in trained personnel and quality emergency care, which has been further exacerbated by a high turnover rate. Therefore, an intermediate solution - a medium-duration training module - has been introduced to train the non-specialist medical officers who predominantly constitute Pakistan's ED workforce in emergency care.

The year-long Certification Program in Emergency Medicine (CPEM) was developed by specialists from The Indus Hospital (TIH), Karachi and Brigham and Women's Hospital - a teaching affiliate of Harvard Medical School, USA - and launched at TIH in July 2018. The curriculum is derived from national and international EM guidelines and expert feedback. TIH is a free-of-cost, private hospital - with a high-functioning adult ED - that largely caters to underserved segments of the population living in a crowded, industrial part of the metropolis.

CPEM consists of two arms: CPEM-Clinical (CPEM-C), with nine physicians from TIH ED, and CPEM-Didactic (CPEM-D), with 19 physicians from other EDs. CPEM-C learners receive clinical mentorship from international and local EM faculty, and both groups participate in weekly conference sessions, practical workshops and online case-based discussions and review questions. To date, all learners completed pre-test and midterm exams (containing multiple-choice and short-answer questions) and have also been receiving formative and summative evaluations.

Midterm exam scores were higher than the pre-test scores by an average of 9.7% (66.3 vs 56.6, $p < 0.0001$), with 72% of learners demonstrating improvement. Structured open-answer feedback from CPEM-D learners' supervisors reported "candidates have shown improvements in their skills to manage patients" and "increased knowledge and discipline regarding patient care". Similarly structured feedback from other TIH departments on CPEM-C learners reported CPEM as "improving patient's quality of care" and "a great addition to our hospital, giving a platform for training individuals in an area which is newly introduced in our setting."

Educational innovations such as point-of-care ultrasound practice, flipped classroom sessions, practical workshops, weekly case-based discussions over a messaging application, and use of low-cost improvised phantom models for procedural training, all contribute to CPEM's adaptability to a low-resource setting. Short-term observations of the program convey how this model of EM training contributes to better patient care: learners are demonstrating greater knowledge and confidence in their EM clinical skills, a refined ED approach, and are taking the initiative to carry out procedures such as ultrasound and intubation independently. The significant progress in midterm scores and the positive external feedback indicates the program's viability in this context, which is expected to strengthen during the second half of its academic year.

Trial Registration / Funding Information (only) :

Sources of Funding: Habib Bank Limited Foundation Harvard Medical School - Centre for Global Health Delivery-Dubai

#19316 : Ambulance called. Emergency or not?

Authors:

Marius Smarandoiu (1), Daniela Taran (2)

1. SMURD, SMURD Sibiu, Sibiu, ROMANIA
2. , SMURD, Sibiu, ROMANIA

Keywords: emergency, ambulance

Abstract :**Purpose**

Prehospital actions of a critical situation are crucial in a patient's future outcome meaning that ambulances must be properly dispatched according to the settings of an incident. The goal of this study is to demonstrate that ICU ambulance is a limited medical resource and must be properly managed and the population should be properly trained to maximized its efficiency.

Methods

More than 8000 cases reported as unconscious emergencies were included in the study. Data was obtained retrospectively from Sibiu SMURD (Mobile Emergency Service for Resuscitation and Extrication) between 2010 and 01.01.2018. From a total cases, it has been selected only the unconscious ones dispatched to SMURD Sibiu MICU. We have collected the medical details of the case (patient medical status when team arrived, GCS (Glasgow Coma Scale), presumptive diagnosis, medical procedures taken) and the reason for the emergency call.

Results

From the total cases reported as unconscious emergency (62%) cases the patient was conscious and 38% was the unconscious case expected

Unconsciousness against pathology type of the cases is looked at. The best recognition rate was found in cardiopulmonary arrest with a value of 98%, followed far behind by surgical conditions 45% , and other rates were found in trauma cases having a value of 28%..

Conclusion

Emergency calls erroneously reporting a patient's state as "unconscious" are more likely to occur when the callers are not properly educated about knowing the difference between a conscious and an unconscious patient. For the situation when the information collected is not accurate we may face the following:

- a. no proper life saving measures are taken for the patient
- b. wrong life saving measures are taken for the patient
- c. the dispatcher's guidance and decisions may be incorrect

#19317 : A cross-sectional survey among asylum seekers with non-urgent complaints: Why do they seek help in the ED?**Authors:**

Karsten Klingberg (1), Adrian Stoller (2), Martin Müller (2), Sabrina Jegerlehner (3), Anne Jachmann (2), Adam D Brown (4), Aristomenis Exadaktylos (2), David Srivastava (2)

1. Department of Internal Medicine, Solothurner Spitäler AG, Solothurn, SWITZERLAND
2. Emergency Department , Bern University Hospital, Bern, SWITZERLAND
3. Accident & Emergency , Barts Health NHS Trust, London, UK
4. Department of Psychology, New School of Social Research, New York, USA

Keywords: Health seeking behavior, Access to healthcare, Emergency Department, Refugee, Asylum Seeker, Emergency Department use, low acuity patients

Abstract :**Background**

In line with global trends, European countries have witnessed increase usage of Emergency Departments (ED) services for low acuity complaints. Research on ED utilization in Europe has shown that AS comprise a greater proportion of non-urgent ED visits. Although a variety of factors associated with the use of ED services for low acuity complaints, studies have yet to examine the reasoning underlying hospital-based ED usage for low acuity complaints among patients with asylum seeker (AS) status.

Methods

We conducted a prospective cross-sectional, single center study. Data was collected during 01/12/2016 and 31/07/2017 among AS and Swiss residents attending the ED of the University Hospital, Bern (Switzerland). The survey included questions about motives to present in the ED for low acuity complaints, patients and the treating physicians were asked to answer a questionnaire.

Study participation was voluntary, free of any compensation and individual verbal and written patient consent was obtained before answering the survey. The study was presented to and approved by the regional ethics committee of the Canton of Bern, Switzerland.

Results

AS and Swiss residents differed in several reasons for seeking care in the ED. 30.2% of the AS patients reported to have no knowledge about the Swiss healthcare system (HCS). The perception of medical urgency as reported by the AS and the treating physician showed a significant mismatch, e.g. only 14.2% of the AS-patients perceived their problem as non-urgent in contrast to 43.3% given by the treating ED physician.

With more than half of the AS, direct communication was impossible and in 70.2% of this cases family and friends were used as translators.

Outcomes, like length of stay (LOS), discharge type, and time of visit did not differ between the two groups.

Conclusion

Lacking knowledge about the healthcare setting in the reception country, language barriers, and the perceived urgency of medical care are the main reasons for AS to seek care in ED for primarily low-acuity medical issues. In both groups, convenience and the perceived level of urgency played a role in the decision-making to present themselves in the ED.

Measures to increase health literacy and provision of easily accessible primary care could improve quality of care and reduce the usage of ED as primary care providers in AS. Implementation and usage of professional translator service will relieve family and friends from this role and might provide better and equal care.

Trial Registration / Funding Information (only) :

Funding The study was funded by the Swiss Federal Office of Public Health (FOPH) awarded to DS and a Fulbright Specialist Grant awarded to AB.

#19318 : Management of acute post-traumatic pain in emergencies**Authors:**

rihab Dimassi (1), Roua chouihi (1), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Noura (2)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA

2. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: emergency,pain,trauma

Abstract :**Introduction:**

Post-traumatic pain is a common reason for emergency room visits of up to 50% of consultants. The purpose of our study is to evaluate the management of acute post-traumatic pain in emergencies.

Materials and Methods:

This is a multicenter prospective study, over a period of 4 years and including 1401 patients. Inclusion criteria: Age > 18 years, acute trauma of the upper or lower limbs. Exclusion criteria: Polytrauma, head injury, abdominal or thoracic, any contraindication to paracetamol, pregnant woman, the need for hospitalization. The digital visual scale was evaluated at the admission and exit of emergencies (AVSadm and AVSexit respectively).

Results:

We included 1401 patients with the following demographic characteristics: Mean age 39 ± 15 years, Sex ratio 1.4. Among these patients 749 (53.5%) had upper limb trauma and 652 (46.5%) had trauma. In the circumstance of trauma, the most frequent home accident was [801 patients (57.2%)] whose mechanism is essentially direct (68.5%). The averages of AVSadm and AVSexit are 6.2 respectively. ± 2 and 4.9 ± 2 . The delay in the emergency department was 90 ± 60 minutes.

Conclusion: Less than 10% of patients are correctly treated for acute post-traumatic pain in emergencies.

#19321 : Mortality in septic patients of respiratory origin in a emergency department**Authors:**

Raul Lopez Izquierdo (1), Maria Varela Patiño (2), Jose Maria Eiros (3), Jesus Alvarez Manzanares (2), Carmen Ramos Sanchez (3), Virginia Carbajosa Rodriguez (2), Raquel Talegon Martin (4), Susana Sanchez Ramón (4), Berta Tijero Rodriguez (4), Francisco Martin Rodriguez (5), Angela Maria Arevalo Pardo (4), Isabel Gonzalez Manzano (4), Inmaculada Garcia Ruperez (4), Jose Ramón Olivas Ramos (2), Helena Hernandez Pérez (2), M^a Antonia Udaondo Cascante (6), Carlos Del Pozo Vegas (7)

1. Emergency Department, Rio Hortega University Hospital, Valladolid, SPAIN
2. Emergency Department, Rio Hortega University Hospital, Valladolid, SPAIN
3. Department of microbiology, Rio Hortega University Hospital, Valladolid, SPAIN
4. Emergency Department, Hospital Universitario Rio Hortega. Valladolid, Valladolid, SPAIN
5. Prehospital emergency medical service, Gerencias emergencias Sanitarias. Sacyl, Valladolid, SPAIN
6. Radiology department, University Hospital of Burgos, Burgos, SPAIN
7. Emergency Department, Hospital Clínico Universitario de Valladolid., Valladolid, SPAIN

Keywords: sepsis, respiratory, emergency department

Abstract :

Introduction: Sepsis of respiratory origin is the most frequent in hospital emergency departments (ED). main objective is to Know variables and biomarkers associated with mortality of these patients

Methods: Retrospective study in ED. Inclusion criteria: >18 years included in an sepsis code in a ED from November 2013-December 2017 with respiratory sepsis origin. Independent variables: Age, Gender, Charlson index (Clx), lactate (mmol/L), C-reactive protein (CRP) (mg/dL), procalcitonin (PCT) (ng/dL), systolic blood pressure (SBP), heart rate (HR), temperature (T° °C), frequency respiratory (FR), oxygen saturation. Dependent variable: Hospitalization mortality (HM). Univariate and multivariate analysis (odds ratio (OR). The area under curve (AUC) of the receiver operating characteristic (ROC) (95% CI) of the predictive model created with the multivariate study. Software: SPSS 20. p <0.05.

Results: Patients: 236; Median age: 79 years (IQR 70.86); male: 58.5%; HM: 30.5%. Univariate study: HM median age was 84 years (78-87) versus 77 years (RIQ 66-85) in survivors (p<0.001); HM in men was 27.5% and in female: 34.7% (p>0.05); HM Clx was 2 (RIQ 1-3) versus 2 (RIQ 0-3) in survivors (p<0.05); HM temperature was 36.9°C (RIQ 35.8-37.9) versus 37.8°C (RIQ 36.8-38.4) (p<0.001); HM HR was 110 (RIQ 84-124) versus 103 (RIQ 84-118) in survivors (p>0.05); HM FR was 36 (RIQ 31-40) versus 28 (RIQ 24-36) in survivors (p<0.001); HM SBP was 92 (RIQ 81-114) versus 106 (RIQ 93-130) in survivors (p<0.05); HM oxygen saturation was 90 (RIQ 83-93) versus 91 (RIQ 87-95) in survivors (p<0.05); HM Lactate was 3.45 mmol (RIQ 2.2-4.87) versus 2 mmol/mL (RIQ 1-3) in survivors (p<0.001); HM CRP was 119 mg/dL (RIQ 71.7-277.2) versus 108 mg/dL (RIQ 43-206) in survivors (p>0.05); HM PCT was 2.18 ng/dL (0.27-12.2) versus 0.49 ng/dL (0.11-4.46) in survivors (<0.05). Multivariate study: variables without statistical association: age, temperature, SBP: oxygen saturation and PCT; variables with statistical association in multivariate study: Clx: OR: 1.56 (95% CI: 1.05-2.30) (p<0.05), FR: OR: 1.12 (95% CI 1.02-1.23) (p<0.05), Lactate: 1.91 (95% CI 1.28-2.86) (p<0.05). AUCROC predictive model: 0.859 (95% CI 0.781-0.983).

Conclusions: Patients with respiratory sepsis in ED are elderly, especially males. The mortality of these patients is high and is associated with a high comorbidity, a high respiratory rate and a high lactate. The model created including these three variables would have a good predictive capacity of poor prognosis among these patients.

Trial Registration / Funding Information (only) :

The study was approved by the Research Ethics Committee of participating center. Being a retrospective study, the Research Ethics Committee did not require informed consent. The study has not received external funding

#19322 : Impact of Methoxyflurane in shoulder dislocation on patient care and crowding - Can the green whistle improve our care and our flow?

Authors:

Ali Mir-Kohler (1), Carlos Lojo Rial (1), Sukrit Suresh (1), R. Ferguson (1), Laura Hunter (1)

1. Emergency Department, Guy's and St. Thomas' Hospital, London, UK

Abstract :

Background:

Shoulder dislocations are a common presentation to the Emergency Department (ED), accounting for around 50% of all joint dislocations [LH1] [CUD2]. Patients present in moderate to severe pain. Ideally, patients should receive analgesia within 30 minutes, and an X-ray within an hour of arrival in ED, as recommended by the Royal College of Emergency Medicine. (2) We had elicited that provision of adequate analgesia, time to imaging and relocation of shoulder dislocations was often delayed within our department, due to a high volume of attendances. Factors identified that may have contributed included delay to adequate analgesia to facilitate imaging and high levels of procedural sedation used for relocation, requiring resuscitation area care. As part of an analgesia and patient safety initiative we introduced the use of Methoxyflurane as first line analgesic agent in patients presenting with suspected shoulder dislocation.

Method:

The design was a prospective initiative, to improve our time to adequate analgesia in this patient population. Methoxyflurane was prescribed on arrival, with the intention that adequate analgesia would be achieved earlier in the patient journey, facilitating earlier imaging in addition to patient directed analgesia. This avoided the traditional opiate prescribing time delay and/or retrieval of an Entonox cylinder and the associated consumables. We anticipated that this would facilitate earlier definitive treatment and earlier safe discharge.

Results:

Data was collected from 1st December 2017 and 31st January. We identified 27 shoulder dislocations presenting during this period. 7 patients required procedural sedation. The mean time to reduction and completion of repeat X-ray was 53 minutes using either method passed between administration of pentrox and repeat x-ray, including sedation of patients. [LH3] In patients who had reduction performed using Methoxyflurane the mean time to reduction was 24 minutes. Overall 8 cases were managed in Majors, 15 in Resus and 4 in Minors. More recent analysis of cases included 14 patients. MF alone was used successfully for reduction in 12 patients. Average discharge time was 2hr and 27min. 8 patients were managed in Resus, 6 in Majors. [LH4] Pre-reduction x-rays were performed within 60min for 9 patients. [LH5] Average pain reduction after pentrox administration in 10 patients after 5min was by 4.5 and by 6.5 after 10min. In total 13 patients were discharged home after the use of Pentrox, whilst 1 patient remained for alcohol detoxification.

Conclusion:

Preliminary results were promising, showing successful reductions of injuries, reduced time spent in the department thus improving the patient experience and reducing crowding within the ED. We demonstrated safe use of MF, reduction in procedural sedation requirement and opiate analgesia administration.

Reference:

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2. <https://www.rcem.ac.uk/docs/Clinical%20Standards%20and%20Guidance/Clinical%20Standards%20for%20Emergency%20Departments.pdf>

Trial Registration / Funding Information (only) :

N/A

#19323 : Simulation as a Tool of Education of Emergency Medical Dispatchers**Authors:**

Marek Neruda (1), Jan Bradna (2), Jiří Kodet (3), Marie Stránská (3), Ondřej Březina (4), Aneta Zámečnicková (5), Lukáš Vojtěch (1), Pavel Bezpalec (1)

1. , Czech Technical University in Prague, Praha, CZECH REPUBLIC

2. , Life Support, Ltd., Praha, CZECH REPUBLIC

3. Emergency Medical Service Prague, Emergency Medical Service Prague, Praha, CZECH REPUBLIC

4. , Life Support, Ltd., Praha, CZECH REPUBLIC

5. , Life Support, Ltd., Praha, DENMARK

Keywords: simulation, emergency medical dispatcher, EMD, education, training, crisis resource management, CRM

Abstract :**Background:**

Simulation is a recommended method for education and development of emergency care professionals. It seems to be an appropriate tool for the development of both technical and non-technical skills. Simulation can be used for both individual and team education.

Method:

By analysis of available resources, we have not found any relevant information about the systematic use of simulation for the development of technical and non-technical skills of emergency dispatchers and emergency dispatchers teams. It led us to closer analysis on how to use the simulation for education and personal development of emergency dispatchers. We used comparative analysis to set up quality parameters, which can be used for simulation development. All results were implemented in the development of a new dispatcher simulation software.

The research was focused on the analysis of quality parameters and CRM parameters in emergency dispatch centers. All parameters can be used for evaluation of simulations. We set a group of parameters which can be measured by quantitative methods and by qualitative methods. These data were used in a project of Czech Technical University in Prague, Faculty of Electrical Engineering, focused on the development of simulation software for complex education. The simulator features are training of both technical and non-technical skills, individual dispatcher skills or entire teamwork, phone assisted CPR, dispatching and all aspects of CRM. The simulation can be used for pre gradual and continuous postgraduate training of individual dispatchers and dispatcher teams.

Results:

The real use of the developed simulator, including the use of defined quality parameters, was tested on an International Professional Exercise and Competition for 27 emergency dispatchers from different centers. The practical use for education and development was proven.

Discussion & Conclusions:

Simulation as a method of education and development is implemented in healthcare with a proven success. Method of complex simulation should be used also in the field of emergency medical dispatchers, where it can fully improve skills and abilities of individuals and whole teams in a safe environment by providing measurable results and proper feedback.

Resources:

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Trial Registration / Funding Information (only) :

Funding: European structural and investment funds (ESI), multi-fund Operational Programme Prague – Growth Pole of the Czech Republic (OP PGP), project: Znalosti pro Prahu, „Výcviková platforma pro zdravotnické operační středisko“

#19326 : Childhood Home Injuries Admitted To Pediatric Intensive Care Unit

Authors:

Selman Kesici (1), Nazlı Gulenc (2), Kübra Cebeci (2), Ebru Azapagasi (1), Ozlem Teksam (1), Benan Bayrakçı (1)

1. ,Dr.,Ankara,TURKEY

2. , Ms., Ankara,TURKEY

Keywords: Children, home injury, mortality.

Abstract :

Objective: To review the characteristics of childhood home injuries requiring pediatric intensive care unit (PICU) admission.

Methods: Patients admitted to PICU of two tertiary referral centers in Turkey because of unintentional injury occurred in home environment were retrospectively evaluated. Patients admitted to PICU between January 2014 and September 2018 were included in the study. Demographic features of the patients, accident type, risk factors, clinical progress, mortality and morbidity, length of PICU stay were retrospectively recorded.

Results: 320 patients were admitted to PICU because of home injury during study period. Of the 320 patients, 137 patients were female (42.8%) and 183 patients were male (57.2%). The mean age of the patients was 46,7 months ($\pm 44,6$ months), mean length of PICU stay was 3,8 day ($\pm 6,5$ day). Accident type was poisoning in 212 patients (66.5%), falling down in 48 patients (15%), burning in 12 patients (3.8%), drowning in 4 patients (1.3%), foreign body aspiration to airway in 20 patients (6.3%), electric shock in 4 patients (1.3%), crush injury in 6 patients (1.9%) and others in 4 patients (1.3%). Overall mortality rate was 2.5% (8 patients), among these 8 died patients, accident type was falling down in 3 patients, foreign body aspiration in 1 patient , burning in 2 patients, poisoning in 1 patient and drowning in 1 patient. Mean length of stay was 23 days in the patients who were admitted to PICU because of drowning whereas it was 1,9 days in patients admitted PICU because of poisoning.

Conclusion: Poisoning is the most common home injury that requires PICU admission in our patient group. It was shown that falling down is most fatal home injury. Houses where children spend most of their time should be safely organized for preventing home injuries. Education of parents, care givers and medical staff following healthy children is important to reduce number of home injuries.

Trial Registration / Funding Information (only) :

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#19328 : Evaluation of paramedical instructors in conducting Basic Cardio-Pulmonary Resuscitation training**Authors:**

Sarra Chaouch (1), Dorra Loghmari (2), Rabeb Mbarek (1), Dhia Ammari (3), Saoussen Bargui (4), Mounir Naija (3), Naoufel Chebili (3)

1. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA
4. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, sousse, TUNISIA

Keywords: Evaluation,paramedical instructors,BLS

Abstract :**Evaluation of paramedical instructors in conducting Basic Cardio-Pulmonary Resuscitation training**

S Chaouch,R Mbarek,D Ammari ,S Bargui,D Loghmari,M Naija,N Chebili

BACKGROUND : since the European Resuscitation Council (ERC) was founded in 1989, it has aimed to "preserve human life by making high-quality resuscitation available to all". Based on this, ERC courses can't be only provided by medical instructor. In the last three years, we noticed a real increase of number of paramedical instructors teaching basic life support « BLS ». The purpose of our study was to investigate this raise and assess the quality of supervision provided by paramedical instructors.

METHODS: Data was collected from a record software of instructors and candidates registered for Basic Cardio-Pulmonary Resuscitation training at the Emergency Education Center(CESU) over a period of three years (2016-2018). In order to evaluate the role played by paramedical instructors and the impact of their participation during the training session, all participants were asked to complete anonymously an evaluation form « feedback » distributed at the end of the course. The evaluation form allowed us to collect the opinions of the candidates concerning the logistics and pedagogical side of the training.

RESULTS: The rate of paramedical instructors was increased from 52,1% in 2016 to 89,6% in 2018. During 2018 : 09 BLS training sessions were conducted, the course director was a paramedical in 07 courses. During three years of study : 26 BLS sessions were organized, the average percentage of paramedical instructors participation was 70.85%. The collected data had shown that 72.4% of candidates were satisfied, 96.1% of the candidates have felt that they were adequately acquired the methodological bases necessary to act in case of emergency. 82% of candidates reported having positive relationship with each other and with the paramedical instructors, also 73.3% of them have received clear and consistent messages. The main suggestions for possible improvements concerned mostly the length of the session which was considered short. The majority of the candidates (90%) didn't express any unappreciated points during the training regarding the organization or the good conducting of the training.

CONCLUSION: this study reveals the significant role played by paramedical instructor in the Cardio-Pulmonary Resuscitation training.

Trial Registration / Funding Information (only) :

no funding

#19329 : Peer teaching model for basic life support in high school student

Authors:

AHMET ZIYA BIRBILEN (1), SELMAN KESICI (2), DAMLA HANALIOGLU (1), ZEYNEL OZTURK (2), OZLEM TEKSAM (1), BENAN BAYRAKCI (2), ZEYNEP BAYRAKCI (3)

1. Pediatric Emergency Medicine, Hacettepe University İhsan Dogramaci Children Hospital, Ankara, TURKEY
2. Pediatric Critical Care, Hacettepe University İhsan Dogramaci Children Hospital, Ankara, TURKEY
3. Student of Bahcesehir College, none, Ankara, TURKEY

Keywords: resuscitation, basic life support training, peer teaching

Abstract :

Objective: It has been shown that initiation of early cardiopulmonary resuscitation (CPR) decreases morbidity and mortality of out-of-hospital cardiac arrest patients. Despite this information, the rate of early CPR application is low in most countries. Basic life support (BLS) training for the public is important to increase the rate of CPR application in out-of-hospital cardiac arrests. In this study we aimed to test the effectiveness of peer education method on the learning and application of BLS in high school students.

Method: The study was conducted in high school and grade one students were included in the study. Students are divided in two groups (Group A and Group B). Pre-test and post-test tests were applied before and after training to measure the awareness and knowledge of all students. At the beginning of the study pediatric emergency and pediatric intensive care physicians trained eight students in group A. These eight students were given BLS instructor training. Afterwards these students trained eight students in group B with same method and those eight students in group B became instructor. Instructor students from both groups trained their friends in their own group. A medical doctor supervised every training session. Training session was not intervened unless there is wrong information transfer or unanswered question by instructor student.

Results: 153 students were included in the study. 5 students were excluded from the study because they did not participate in the tests. There were 76 students in group A and 72 students in group B. There was a statistically significant improvement in 8 questions from 13 questions in the pre- and post-training knowledge tests ($p < 0.05$). Students were able to give true answers regarding environmental safety, consciousness assessment, control of the airway and respiration, 30: 2 chest compression, 100 times chest compression, the hands placed in the middle of the chest. This situation was similar in two groups and there was no difference between two groups in terms of improvement in post-test performance. Students were evaluated in terms of BLS application competence. In the 16-step evaluation, the students in group A applied BLS with a success rate of 90.2% and B group with a success rate of 93.4%. In group A, it was found that the most successful steps were respiration control and performing 30: 2 chest compressions. Calling emergency call center step was the most forgotten step in group A. In Group B, most successful step was to provide environmental safety, the most forgotten step was to call emergency call center. In post-training awareness questionnaire, significant improvement was determined in terms of basic life support (BLS) hearing, understanding of BLS need, feeling sufficient to apply BLS, giving BLS training in schools and watching videos about BLS.

Conclusion: This is the first study testing the effectiveness of peer education method in BLS training of high school students. It was shown that with peer education model students could train other students as basic life support instructors. With the implementation and dissemination of this training model, BLS training can be given to the public much faster.

#19331 : The development of a resuscitation record at an academic hospital: a survey and focus group of Code Blue team members**Authors:**

Danny Jomaa (1), Tim Chaplin (2)

1. School of Medicine, Queen's University, Kingston, CANADA
2. Department of Emergency Medicine, Kingston Health Sciences Centre, Queen's University, Kingston, CANADA

Keywords: Resuscitation record, Code Blue, cardiac arrest

Abstract :

Background: A Code Blue is activated when a hospitalized patient suffers a cardiac arrest. Accurate documentation of the resuscitation effort is required in order to provide reliable data that will facilitate decision-making, code team debriefing, and inform quality improvement initiatives related to Code Blues. The documentation of Code Blues is not well defined by current guidelines and varies considerably between institutions. Using a survey and focus group, we aimed to improve our Code Blue documentation record in order to increase its completion rate and capture evidence-based quality metrics.

Methods: This study was reviewed and approved by the Queen's University Health Sciences & Affiliated Teaching Hospitals Research Ethics Board and conducted from January to May, 2019. We distributed a 16-question survey containing a mixture of short answer, multiple choice, ranked, and narrative feedback questions to volunteer Code Blue personnel, including staff from nursing, respiratory therapy, anesthesiology, and emergency medicine. The survey aimed to assess their perceptions of the current resuscitation record by evaluating: 1) the individual priorities of members of the resuscitation team as they pertain to information recording; 2) features of the documentation that facilitate or hinder accurate information recording; and 3) types of information necessary for making treatment decisions and debriefing after the event. We then conducted a focus group with the Code Blue team to foster an interprofessional dialogue about the purpose of the resuscitation record and to create a framework that would guide the record's redesign. With the aggregate feedback, we created three new resuscitation record templates that reflected the team's content and formatting suggestions.

Results: The survey identified key information that the Code Blue team would need for decision-making and debriefing. In addition, several features of the current resuscitation record were minimally or improperly used and slowed recording of the event. These included outdated medication fields and terminology, formatting that limited complete information recording, and a lack of prompts for key information. The focus group re-iterated this feedback and proposed suggestions that were separated into content redesign, which reflects the completeness and relevance of recorded information, and formatting redesign, which reflects the ease and accuracy of recording information. The three new templates contained increasing degrees of content and formatting redesign compared to the original resuscitation record. Our next steps are to select one template through consensus that best closes the gaps in information recording identified by the Code Blue team.

Discussion & Conclusion: Accurate documentation during a Code Blue is critical in order to provide high-quality data that will drive the improvement of decision-making, debriefing, and ultimately patient outcomes. This study aimed to highlight shortcomings in the current documentation and strategies to improve the relevance and accuracy of information recorded during a resuscitation. We used a survey and focus group to perform a needs assessment of Code Blue team members and guide the redesign process in an evidence-based manner.

Trial Registration / Funding Information (only) :

This study was not registered because there were no patients involved. This study did not receive any specific funding.

#19333 : Comparison of time to antibiotics, - IV fluids and mortality of septic patients before and after Implementation of an Electronic Shock Alert**Authors:**

Anne Sophie Brogaard (1), David Kocemba (2), Casey Clements (3), Maria Jensen (4), Hans Kirkegaard (5), Bo Madsen (6)

1. , Research Center for Emergency Medicine, Aarhus University Hospital, Denmark, Aarhus, DENMARK
2. Research Center for Emergency Medicine / Department of Emergency Medicine, Aarhus University Hospital, Denmark / Mayo Clinic, Rochester/Aarhus, DENMARK
3. , Mayo Clinic, Rochester, USA
4. Research Center for Emergency Medicine / Department of Emergency Medicine, Aarhus University Hospital, Denmark / Mayo Clinic, Aarhus, DENMARK
5. Research Center for Emergency Medicine, Aarhus University Hospital, Denmark, Aarhus, DENMARK
6. Department of Emergency Medicine, Mayo Clinic, Rochester, USA

Keywords: Sepsis, septic shock, mortality, intervention, shock alert, time to antibiotics, IV laid resuscitation

Abstract :**Background:**

Sepsis is a leading cause of hospital mortality world wide. We know that time to treatment reduce morbidity and mortality. We don't know if implementation of a shock alert forcing physicians to select the cause of shock and if sepsis, guiding them to resuscitation goals, will lead to improved time to treatment and mortality. The primary objective was to evaluate time to treatment with antibiotic and IV fluids and the outcome of patients presenting with shock and impression of sepsis, before and after implementation of an electronic ShockAlert.

Design and Method: This is a ambispective before and after study of patients presenting with Septic Shock to an academic tertiary Emergency Department before and after implementation of an electronic Shock Alert; May 16, 2013 through November 13, 2014 and January 15, 2015 through January 14, 2017. Patients were defined as having sepsis when they met Shock Alert criteria (a single episode of either hypotension (systolic blood pressure \leq 90 mmHg) or Lactate \geq 4 mmol/L) *and* had a physician impression of sepsis. In the pre-implementation group, subjects were identified by retrospectively applying Shock Alert criteria to all patients ED patients and by chart review identifying patients with sepsis or septic shock as the cause of shock. Subjects in the post group were identified through the Shock Alert tool (AWARE). Time to antibiotic was calculated in both groups and defined as time from ED arrival to the first antibiotic was ordered. Time to IV fluids was calculated similarly.

Continuous features were summarized with means and standard deviations when approximately normally distributed and with medians and interquartile ranges (IQRs) otherwise; categorical features were summarized with frequency counts and percentages. Features were compared between patient visits before and after implementation of the electronic sepsis notification system using two-sample t, Wilcoxon rank sum, chi-square, and Fisher exact tests based on the type and distribution of the feature under study.

Results: A total of 670 patients were eligible for this cohort study, 270 (40%) from the pre-implementation period and 400 (60%) from the post-implementation period. The mean age at ED arrival was 70 years in the pre-cohort and 68 years in the post-cohort (p 0.23), 58% and 57% were men in the pre- and post- implementation cohort respectively. The median time to first antibiotic was 1.7 (0.8-2.6) hours pre-implementation and 1.2 (0.7-2.3) hours post (p <0,001). In the pre-group, 38% received \geq 30 ml/kg fluids within 3 hours from trigger time, this was 46% in the post group (p =0.039). The ICU admission rate was 61% pre-implementation and 73% post implementation (p =0.001). We found an in-hospital mortality in the pre and post group respectively of 15% and 8% (p =0.002)

Conclusions: This study shows a significantly reduced time to antibiotic treatment and order of \geq 30 ml/kg IV fluids to patients presenting to the Emergency Department with sepsis or septic shock after implementation of an electronic Shock Alert. We found an increased rate of ICU admission and significantly decreased in-hospital mortality after implementation of the electronic Shock Alert.

Trial Registration / Funding Information (only) :

No funding IRB approved study

#19335 : Pulmonary embolism: from suspicion to confirmation**Authors:**

Siwar Jerbi (1), Ines Chermiti (1), Morsi Ellouz (2), Hanène Ghazali (1), Sana Tabib (1), Mohamed Mguidiche (1), Jamila Habli (3), Ahlem Azouzi (1), Saoussen Chiboub (1), Sami Souissi (1)

1. Emergency department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA
2. Emergency department, Regional Hospital of Ben Arous, Ben arous, TUNISIA
3. Cardiology department, Regional Hospital of Ben Arous, Ben Arous, TUNISIA

Keywords: pulmonary embolism, suspicion, scores, confirmation

Abstract :

Introduction: Pulmonary embolism (PE) is defined as the sudden obstruction, total or partial of the trunk of the pulmonary artery or one of its branches by a circulating body. It is considered as a diagnosis and therapeutic emergency.

Objectives: The aim of our study was to assess the management of patients with PE suspicion regarding European guidelines.

Methods: We conducted a prospective, descriptive study over a 16-month period from January 2018 to April 2019. We included all adult patients presenting to ED with symptoms suggesting PE. The simplified Wells score was evaluated to assess PE probability. PE was confirmed with angio thoracic CT scan. Management was based on European guidelines adapted to local settings. All scores were calculated: simplified Wells, simplified Geneva and simplified PESI.

Results: Inclusion of 103 patients. The prevalence of PE was 28% (n=29). Sex ratio= 0.98. Mean age = 61 ± 18 years. Comorbidities (%): hypertension (34), diabetes (26), chronic obstructive pulmonary disease (23), history of deep venous thrombosis (3) and renal failure (8). Symptoms (%): dyspnea (76), chest pain (32), syncope (4.5), lower limb pain (2.5) and hemoptysis (2). EKG findings (%): sinus tachycardia (65), right bundle branch block (19) and atrial fibrillation (11). D-Dimers were tested in 52 patients (50%). They were positive in 44 patients. CT scan was performed in 79 patients (77%). Mortality risk estimated with simplified PESI in PE patients was divided as follow: intermediate high (23.1%), intermediate low (30.8%), low (42.2%). Mortality rate was 10%.

Conclusion: The prevalence of PE is relatively high (28%). Setting a local protocol based on international guidelines may be successful if all the stakeholders (emergency physician, radiologists, internists and biologists) work with collaboration.

#19336 : What are the predictive factors of failure in high-flow nasal cannula oxygen therapy in the pediatric emergency department?

Authors:

ORKUN AYDIN (1), ELIF ARSLANOGLU AYDIN (2), AHMET ZIYA BIRBILEN (1), DAMLA HANALIOGLU (1), BAHRI UNAL (1), LEMAN AKCAN YILDIZ (1), OZLEM TEKSAM (1)

1. Hacettepe University, Faculty of Medicine, Department of Pediatrics, Division of Pediatric Emergency Medicine, ANKARA, TURKEY
2. Hacettepe University, Faculty of Medicine, Department of Pediatrics, ANKARA, TURKEY

Keywords: emergency department, high-flow nasal cannula, pediatrics, respiratory distress

Abstract :

Background: High-flow nasal cannula (HFNC) therapy has seen increasing use in the different indications in the pediatric emergency department. But there is not a consensus about whenever it is used or not. High flow nasal cannula may be able to prevent intubations in infants and children with respiratory distress. But sometimes it can be insufficient.

Objective: The aim of this study was to assess the clinical and patient characteristics that predict failure of HFNC therapy in children presenting to the pediatric emergency department

(PED) with respiratory distress.

Design/Methods: Patients who presented with respiratory distress and were treated by HFNC, were included. The age, gender, weight, medical history, diagnosis, vital signs, oxygen saturation, medical interventions, duration of HFNC therapy, time to escalation, adverse effects, and laboratory test results were obtained from medical and nursing records. Therapy failure was defined as the clinical decision to intubate a patient after a previous trial of HFNC. Multivariable logistic regression was performed to identify factors associated with intubation following HFNC.

Results: One hundred seventy cases meeting criteria for inclusion were identified. The median age was 11,5 months. The most common final diagnosis was acute bronchiolitis (n = 115, 32,4%). 13 (8%) of patients failed therapy and required intubation following HFNC trial. To find of predictive factors we investigated pH, pCO₂, lactate, vital signs between intubated and nonintubated group. But there were no statistically significant predictive factors affecting HFNC failure. There were no serious adverse events in the pediatric emergency department.

Conclusions: HFNC therapy may have a role in the PED as an easily administered and well tolerated form of non-invasive respiratory support. In this study only 8% of patients required escalation to a higher level of respiratory support. We couldn't find any predictable factors.

Trial Registration / Funding Information (only) :

No funding.

#19337 : Derivation of an elderly trauma triage tool**Authors:**

Helen Stigaard Laird (1), Robert Morgan (2), Karen Stone (1), Hannah Roderick Hake (3), Rosie Furse (1)

1. Emergency Department, Royal United Hospital Bath, Bath, UK
2. Critical Care, Royal United Hospital Bath, Bath, UK
3. Geriatric Medicine, Royal United Hospital Bath, Bath, UK

Keywords: elderly, geriatric, trauma, triage, tool, injury, emergency department, pre-hospital

Abstract :

Elderly trauma represents the largest trauma group presenting to Emergency Departments (ED) across the United Kingdom. The 2017 national Trauma Audit and Research Network (TARN) report on major trauma in older people found that a fall of less than two metres is the most common mechanism of injury in older patients, in contrast to the predominance of road traffic collisions in younger patients. They also found that current pre-hospital triage systems are not good at identifying elderly "occult" major trauma. These patients do not trigger pre-hospital trauma triage scores therefore they are most frequently conveyed to their nearest hospital without pre-alert as opposed to a major trauma centre. This group is therefore less likely to have a trauma call or be seen promptly by a senior ED clinician. Their investigations are more frequently delayed than younger trauma patients with equivalent injuries.

The aim of this work is to derive a simple and quick-to-use triage tool for use on arrival in ED to more consistently predict serious occult trauma. These patients would then be placed in the high dependency or resuscitation area of our department and be rapidly assessed and treated by a senior ED clinician who could initiate the trauma team as needed.

The Royal United Hospital is a district general hospital and a designated trauma unit within the Severn major trauma network in south west England. We conducted a retrospective audit of 150 trauma patients identified from our local TARN database.

We identified 50 consecutive patients aged 75 and over from each of the following three Injury Severity Score (ISS) groups: ISS <9, ISS 9-14, ISS >15. We then collected injury data from the TARN database and reviewed the pre-hospital and hospital notes to collect further data taken by paramedics or nurses at triage and establish which area of the department (majors or high dependency) the patient was assessed in.

From pre-hospital and in-hospital notes we checked for the presence of the answers to proposed triage questions including mechanism of injury, symptoms or signs of key injuries and worst recorded observations. Only pre-hospital and first ED triage observations were included. We then matched that to TARN data such as patient age, ISS, injuries sustained (including anatomical areas of injury), time to be seen by a doctor, grade of doctor and time to scan.

Statistical analysis is ongoing and we intend through this to establish the most accurate triage score and weighting of questions to identify patients with an ISS of 9 or more.

Further work will then be needed to validate the score.

#19339 : Sepsis Management: The Journey to improve timely Antimicrobial Administration.

Authors:

Kiren Govender (1), Joesph Fahy (2)

1. Consultant, Emergency Medicine, Portiuncula University Hospital, Saolta Univeristy Hospital Group, Galway, IRELAND
2. Sepsis Lead Nurse Portiuncula University Hospital, Portiuncula University Hospital, Ballinasloe, IRELAND

Keywords: Sepsis

Abstract :**Sepsis Management: The Journey to improve timely Antimicrobial Administration**

Sepsis is a common time dependant medical emergency. It can affect persons of any age, from any social background and strike irrespective of underlying good health. International campaigns have introduced and promoted approaches to sepsis. Reductions in mortality from severe sepsis or shock are in the order of 20-30% (National Clinical Guideline No.6, 2016) have been reported based on early recognition, antimicrobial administration, resuscitation and timely referral. These are recorded on the Emergency Department Sepsis Screening Form.

A retrospective audit of this form was carried out at Portiuncula University Hospital. This audit over a fixed period of 3 months focused on duration of antimicrobial administration from initial diagnosis on the Sepsis Management Form highlighted numerous failures in treatment. 70 patients were identified as septic. 20% (14) of these charts were randomly selected for review. Notably only 36%(5) of these pateint's received first dose antimicrobials within the hour and the average time to antimicrobial administration was 148mins. The results were presented to the local and Saolta Sepsis Governance Group resulting in an educational programme to radically ensure compliance. This process is ongoing. A second audit was done a few weeks later with the same parameters after implementation and mainstreaming and this showed an increased to 50% compliance and the time to antimicrobial administration decreased to 69mins.

The results demonstrate a need for an ongoing programme of education and information of all stakeholders including the public to identify signs of sepsis early to achieve a 100% compliance in timely administration of antimicrobials. Furthermore it is very important to note that earlier recognition of Sepsis initiates early intervention and treatment. Improvement in critical timely decision making enhances key performance sepsis indexes to be met. Continued education programmes, Sepsis Champions within various departments, training sessions and quarterly compliance audits highlight the multifaceted part of this road to improvement. Think sepsis. Time matters. We

#19340 : Can pediatric trauma severity scores predict outcomes? A retrospective study of the national trauma data base.

Authors:

Imane Chedid (1), Mazen El Sayed (1), RD Sawaya (1)

1. , AUB, beirut, LEBANON

Keywords: pediatric, trauma, scores, mortality, disposition

Abstract :

Background: Trauma is the leading cause of death in children aged 1 to 18 years old. Multiple different trauma severity scores exist including the shock index (SI), age adjusted shock index (SIPA), reverse shock index (rSI), age adjusted reverse shock index and reverse shock index multiplied by Glasgow Coma Scale (rSIG). However, it is not known which is the best predictor of clinical outcomes .

Our objective was to compare the above severity scores in relation to clinical outcomes. We aimed to primarily correlate these different severity scores with mortality in pediatric trauma. Our secondary outcomes were to correlate them with disposition (Emergency department (ED) home discharge, Intensive care unit, regular floor, Operating room), and to describe patient demographics and characteristics.

Methods: We undertook a multi-center retrospective study using the 2014 US National Trauma Data Bank. We included all patients aged 1 to 18 years old, and excluded patients who were dead on arrival or on scene or transferred out from the ED. The SI, SIPA, rSI, age adjusted rSI and rSIG were calculated according to the initial ED parameters. Analysis was done via SPSS. Descriptive statistics with an α of 0.05, were used.

Results:

Sample description: 67 098 patients were included with a mean age of 11 ± 5 . 66% were male and the injury severity score was < 15 in 87%. The majority had blunt (82%) and unintentional (90%) trauma and 30% were victims of motor vehicle trauma and 30 % were due to falls.

Outcome description: 84 % were admitted. Of these 54 % to the general ward, 18 % to the ICU, 8.1% to an observation unit, telemetry or Step Down Unit and 20 % directly to the Operating Room.

The overall mortality rate was 3%: 2% at ED discharge and 1% at hospital discharge.

Trauma severity score clinical outcomes (the following data is our preliminary analysis for the primary outcome): Among the scoring the systems evaluated, all except the SIPA had a statistically significant correlation with mortality ($p < 0.05$). Specifically, an ED shock index of 1.1 ± 4.2 was associated with mortality compared to a score of 0.8 ± 0.4 ($p=0.038$). An ED Reverse Shock Index of 12.6 ± 19.7 was significantly associated with mortality compared to a score of 17.3 ± 21.0 ($p<0.001$). A rSIG score of 11.0 ± 14.2 was significantly associated with mortality compared to a score of 19.3 ± 13.1 ($p<0.001$). Finally, an Age Adjusted Reverse Shock Index of 1.5 ± 2.3 was significantly associated with mortality compared to a score of 12.3 ± 2.7 ($p<0.001$). Further analyses of the data comparing the clinical scores is currently in process.

Conclusion:

Several pediatric trauma adjusted shock indices may help predict children at higher risk of mortality. Further studies assessing their usefulness for prehospital triage and response to earlier and perhaps more aggressive management are recommended.

#19342 : How do We manage Superficial Venous Thrombosis? Altamira Study: Observational study in Spanish Emergency Departments**Authors:**

Fahd Beddar (1), Sonia Jimenez (2), Jose Maria Pedrajas (3), Lorena Castro (4), Marta Merlo (5), Ana Maria Peiró (6), Angel Alvarez (7), Laura Lozano (8), Angel Sanchez (9), Pedro Ruiz (10)

1. Emergency department, Clínico San Carlos Hospital, Madrid, SPAIN
2. Emergency department, Clinic de Barcelona Hospital, Barcelona , SPAIN
3. Internal Medicine Dept., Clínico San Carlos Hospital, Madrid, SPAIN
4. Emergency department, 12 Octubre Hospital, Madrid , SPAIN
5. Emergency department, Severo Ocha Hospital , Madrid, SPAIN
6. Emergency department, Arnau de Vilanova-Lliria Hospital, Valencia, SPAIN
7. Emergency department, Nuestra Señora Valme Hospital, Sevilla , SPAIN
8. Emergency department, Santa Creu i Sant Pau Hospital, Barcelona, SPAIN
9. Emergency department, Hospital Universitario de Albacete, Albacete, SPAIN
10. Internal Medicine Dept., University Clinic of Navarra, Madrid, SPAIN

Keywords: Superficial Venous Thrombosis, deep venous thromboembolic disease , anticoagulation

Abstract :**BACKGROUND**

Traditionally, superficial venous thrombosis (SVT) has been considered a benign disorder. It is known that it shares risk factors with deep venous thromboembolic disease (VTE) and therefore a risk of serious thromboembolic complications. There is no an homogeneous consensus in the diagnostic and therapeutic management of patients with SVT. Our objective was to describe the characteristics of patients diagnosed with SVT and their management in the emergency departments (ED) of Spain.

METHODS

Multicentric, retrospective, observational study with all patients diagnosed of SVT, during the period between January 2016 and May 2017 in 18 spanish ED.

Inclusion criteria were patients with diagnosis in ED of SVT in lower limbs, excluding those who presented an indication for anticoagulant treatment for any other pathology.

The collected variables were demographic, characteristics of patients, comorbidity, VTE risk factors and the diagnostic and therapeutic management in the ED. Also, we collected any complication (recurrence or extension of SVT, deep venous thrombosis (DVT) or pulmonary embolism (PE)), haemorrhage or death in the next six months after SVT. In order to identify independent variables related to the decision of perform an ultrasound and prescribe anticoagulation by the physician, a multivariate analysis was carried out.

RESULTS

A total of 1202 patients were recruited, 67.4% of them women. The mean age was 59.55 ± 16.85 , 24.5% had previous VTE, 4.6% active cancer, 2.4% a BMI > 30, and 50% had a history of varicose veins in lower limbs. 39.4% had hypertension and 26.5% diabetis. The median number days of symptoms was 4 days (interquartile range (IR) 2-7), 50.7% had signs of SVT, being painful cord the most frequent (50.4%). 13.6% had symptoms of DVT. Only 0.5% had clinical symptoms of pulmonary embolism (PE). Only 56.7% underwent ultrasound. 927 patients (77.1%) received anticoagulant treatment with a median of 22 days (RI 10-30). Enoxaparin was the most used, 79.3%. 9.1% suffered a complication in the first six months, being SVT recurrent the most frequent (4.6%). The median number of days to complication was 77 days (RI 19-153). 84.3% had received anticoagulant treatment at diagnosis but only 22% were on anticoagulant treatment at the time of complication. The independent variables associated with the anticoagulation decision were previous VTE [OR 1.5 (95% CI (1.082-2.255); $p < 0.014$)], history of varicose veins [OR 1.440 (95% CI (1.079-1.920); $p < 0.013$)], SVT signs [OR 1.42 (95% CI (1.059-1.882), $p < 0.018$)], limb pain [OR 1.572 (95% CI (1.177-2.098), $p < 0.002$)] and the performance of doppler ultrasound [OR 2.241 (IC95% (1.680-2.988), $p < 0.001$)].

CONCLUSIONS

SVT has an important incidence of complications. The diagnostic and therapeutic management is heterogeneous. The present study evidences that 84% of the patients with complication had received anticoagulant treatment, but 22% remained on anticoagulation at the time of the complication. The duration and/or intensity of anticoagulation for SVT patients in real clinical practice might be suboptimal.

Trial Registration / Funding Information (only) :

- This study did not receive any specific funding. - Trial Registration: 17/393-E - This study was approved by the hospital ethics committees involved.

#19345 : Asking for help. An observational study of interconsultation of the Emergency department in a General Hospital.

Authors:

Iris Mar Hernandez (1), Juan Jose Eito Cuello (2), Javier Martinez Castillon (1), Cristina cgonzalezgimeno@gmail.com Gonzalez Gimeno (1), Enrique Barrueco Otero (1), Manolo Griabal Garcia (2), Beatriz Toribio Velamazán (2)

1. , Salud Aragon, Barbastro, SPAIN
2. Emergency Department, Salud Aragon, Barbastro, SPAIN

Keywords: Interconsultation, Emergency Department, management, interdisciplinary

Abstract :

The General Hospital of Barbastro, Spain, provides medical service to 110.000 people. It is a hospital with all the medical departments during daytime, but just a pediatrisian, a gynecologist, a surgeon, a traumatologist, a intensivist, a internal medicine doctor and the emergency team are physically present during the guard, even though there are no first call when patients arrive. The rest of specialities are on call. The first and main approach to the patient is given by the emergency doctors. With this study we will assess if the interconsultation to other specialities done by the emergency department has been done when needed.

Methods:

The study analyses the cases that needed an interconsultation done by the Emergency Department physicians to other doctors at the General Hospital of Barbastro between the 2/01/2019 and the 9/04/2019. For this cohort study, among the patients that came to the ED, only those were selected for which an interconsultation was required, and this was processed through the informatic system and not by phone call. The variables studied are the time between the arrival of the patient and the processing of the interconsultation, the time of the interconsultation itself, and the destination of the patients among the services consulted

Excel has been used to analyse the variables as well as χ^2 of Pearson

An intense research has been done in Embase, Pubmed and Cochrane, not finding any literature about the ED and the interconsultation.

Results:

Patients who needed a interconsultation were mainly sent to Cardiology (20%), Neurology(20%) Hematology (15%) and Otorhinolaryngology (11%), Oncology (7%), Urology (6%), the other Departments representing less than 5% each. However, these data show just the interconsultation done by the informatic system (mostly done by Cardiology and Neurology) and does not include all the telephone interconsultations that are done during the guard.

The time since the patient arrives until the interconsultation is done varies from one speciality to another, being all between 1:30h to 14h. The answer given by the specialists to the interconsultation also depends on the service, but the study shows that is mostly done in 1h+/-2h. Meaning that the patient is mostly managed by the emergency department, in terms of time.

In some specialities interdependence among the destination of the patient is shown ($p= 0,068$, IC 90%). So the interconsultation is done mostly when needed, as the patient requires a follow up in the outpatient consultation or hospital admission.

Discussion & Conclusions:

The interconsultations done by the ED of the General Hospital of Barbastro are done when needed, as the patients require a follow up by the specialist consulted or a hospital admission.

Trial Registration / Funding Information (only) :

Trial Registration: It has not been register because it was not appropriate to register. Funding: This study did not receive any specific funding. Ethical approval and informed consent: Not needed.

#19346 : Evaluation of the knowledge of the emergency call assistant/operator and the regulatory doctors regarding the disaster alert plan**Authors:**

Dorra Loghmari (1), friji anis (2), ayachi Ilahi (2), Ahmed Guesmi (3), Elee sghaier (4), Mounir Naija (4), Rabeb Mbarek (5), Naoufel Chebili (4)

1. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, soussse, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 CHU sahloul soussse, CHU sahloul soussse, SOUSSE, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 , CHU sahloul soussse, soussse, TUNISIA
5. service d'aide médicale urgente (SAMU) 03 , CHU sahloul soussse, SOUSSE, TUNISIA

Keywords: Evaluation ,emergency call assistant,regulatory doctors, disaster

Abstract :

Evaluation of the knowledge of the emergency call assistant/operator and the regulatory doctors regarding the disaster alert plan

D Loghmari ,A Friji,A Ilahi,A Guesmi,R Mbarek,M Naija,N Chebili

BACKGROUND:

Emergency medical assistance services (EMAS) is the manager of pre-hospital medical emergencies. Hence EMAS must have an action plan to how to deal with disaster situations. With this in mind, we carried out a study whose objective wa to assess the level of knowledge of the ECA/O and the regulatory doctors concerning the disaster alert plan.

METHODS: We conducted a questionnaire with 20 people ,9 emergency call assistant/operator(ECA/O) and 11 medical regulators, over a period of one month (December 2018) enrolled in EMAS.**RESULTS:**Half of the respondents 50% received at least one disaster management training and 70% at least one disaster simulation. The majority of respondents (85%) mentioned that there are three levels in the EMAS disaster alert plan. 60%of the staff knew who to alert in order of priority with a significantly better response by the ECA/O (p 0.02). Regarding the information to be transmitted to stakeholders in each level, 45% responded with accurate answers. Only 25% of respondents knew the actions to be taken when receiving a disaster call and only 10% of the staff gave correct answers.**CONCLUSION:**The level of knowledge of the ECA/O and the medical regulators concerning the disaster alert plan in the service of EMAS is insufficient. It is important to periodically organize simulations for the call control room staff regarding the management of calls in a disaster situation.

Trial Registration / Funding Information (only) :

no funding

#19347 : Levetiracetam :Worth a use in Status Epilepticus

Authors:

Saurav Bhardwaj (1), Amit Jaiswal (2), Virupaksha sadhunuvar (3)

1. Hospital, Birmingham, Birmingham, UK
2. , NHS, Nottingham, UK
3. , NHS, Birmingham, UK

Keywords: Is Levetiracetam a better drug than Phenytoin in SE?

Abstract :**Case Vignette:**

During one of the busy shifts in ED in a DGH, I received a pre alert regarding a 56 years old female who was having continuous seizures for past 30 minutes (SE) and had already received 10mg of P/R diazepam by the paramedics. On arrival she was still having generalized convulsive seizures and I quickly administered I /V LOR 4mg. She continued to seize despite of that and the decision was to give I/V PHT as per the guidelines. Her vital signs showed a SBP of 80mmhg and she had a background of AF.Despite knowing the fact that the most common side effects of PHT are hypotension and arrhythmias, we went ahead and gave the PHT to control the seizures, as per the guidelines. Patient became more hypotensive after that and needed inotropic support. The seizure activity stopped but patient needed RSI and was admitted to ICU.

This raised a question that whether there was an alternative to PHT, which can be used as effectively but more safely. On researching more, I came across LVT, which showed promising results in controlling the seizures and hence prompted me to review the evidence in its use in SE.

Three part Question:

In {adult patients with Status Epilepticus}, is {Levetiracetam a safe and effective second line anti-convulsant compared to Phenytoin}, in {terminating seizures}?

Literature Search:

Using the Athens interface (www.library.nhs.uk), I did a comprehensive literature search of MEDLINE (1946 to date), EMBASE (1980 to present), and CINAHL (1981 to present) databases, searching titles and abstracts, as well as index linking.The abstracts of the 247 unique papers were reviewed to ascertain if they answered the question, using the inclusion and exclusion criteria,this found 8 unique papers.There were 3 retrospective, 2 prospective, one systematic review,one meta analysis and one critical review.

These 8 papers have been critically appraised and reviewed. Levels of evidence have been graded as per the '**Strengthening the Reporting of Observational studies in Epidemiology' (STROBE) checklist (scored out of 22, Appendix 1), as well as** the Scottish Intercollegiate Guidelines Network¹² (SIGN - Appendix 2).

Outcome and Conclusion:

All the studies had a clear objective, sound methodology and they showed promising results in terms of the outcome. The efficacy of LVT is comparable to PHT with less serious side effects, although the results were not statistically significant, p value >0.001.All the retrospective case series reported an efficacy between 61.8% to 94% for the use of LVT in SE,especially when used in elderly population with comorbidities,as supported by Z Yasiry⁹ et al, in their meta-analysis.

There is strong evidence to suggest that LVT is a safe and effective drug for its use in SE.The I/V formulation is still not licensed for use in SE, but the accumulating evidence in the literature suggests that the efficacy of LVT is comparable or even better than PHT.The use should be individualised as per the clinical need.

ESSTT³⁰ and ECLIPSE²⁹, are two promising RCT going on at present to compare the safety and efficacy of LVT.

#19348 : The Burden of Venous Thrombosis on Emergency Department**Authors:**

Jasmin Hamzic (1), Nataša Mandić (1), Dunja Gospić (1), Ivan Gornik (1)

1. Emergency Department , University Hospital Centre Zagreb, Zagreb, CROATIA

Keywords: deep vein thrombosis, swollen leg, vascular ultrasound, anticoagulation

Abstract :**Introduction**

Suspected deep venous thrombosis (DVT) is a common situation in an emergency department (ED): most patients present with a swollen and painful leg and the differential diagnosis are numerous. Since positive diagnosis of DVT dictates immediate initiation of treatment, it must be confirmed or excluded in the ED. During the past year, we have introduced a comprehensive diagnostic and therapeutic algorithm, based on ESC guidelines, in which the initial exam, ultrasound and treatment plan will be performed by a specialist in emergency medicine without a need for consult from other specialists. Since other EDs are expressing interest in adopting this policy, we wanted to evaluate the burden of suspected thrombosis on an ED to enable planning and resource allocation. Also, since the algorithm predicts hospitalisation only for high risk patients, we wanted to evaluate the safety of this strategy.

Methods

We have prospectively recorded patients with suspected DVT in our ED during the period of six months. Demographic data, Wells' score elements and duration of symptoms were recorded for all patients. D-dimer values were obtained per algorithm and recorded if measured. Compression ultrasound was performed per algorithm and if unambiguous, its result was considered final for confirmation or exclusion of DVT. For patients with positive diagnosis of DVT, we recorded the location of thrombosis, admission or discharge decision and treatment plan (LMWH/warfarin, LMWH only or NDOAC). All patients were followed up for at least 3 months to evaluate for complications.

Results

During the analysed period, our department has handled 47.519 patients, of which 10.684 were medical patients and 1018 (9.5%) came because of suspected DVT. The combination of low pre-test probability (Wells score) and negative D-dimer values excluded DVT in 394 patients; CUS was performed in the remaining 624 patients. The diagnosis of DVT was established in 126 patients (20.2% of CUS exams, 12.3% of all suspected patients). Femoral thrombosis was the most frequent (29.4%), followed by popliteal (22.2%). Majority of patients (81.7%) were not admitted for hospital treatment. Among discharged patients, majority was prescribed with a DOAC: rivaroxaban (69.8%) or apixaban (15.1%), while other treatment regimens were less frequent: dabigatran 0.8%, warfarin 7.1%, LMWH 4.8%. Some very low risk patients were not prescribed anticoagulant treatment, in accordance with the algorithm. During the follow-up, there were no bleeding events among the anticoagulated patients. Progression of thrombosis was recorded in 13 patients, all of which were cancer patients. We recorded no pulmonary embolism after discharge of DVT patients.

Conclusions

The burden of suspected DVT is significant among emergency department patients. Diagnostic and treatment algorithm enables emergency physicians to evaluate and admit or discharge these patients with confidence. Majority of evaluated patients in our ED did not have DVT, while the most frequent site of deep vein thrombosis was femoral vein. Most patients with confirmed DVT can be safely discharged from the ED with anticoagulation; rivaroxaban was the favoured treatment option.

#19349 : A comparative study of outcome of patients with ST-Segment Elevation Myocardial Infarction with and Without Diabetes Mellitus, after Thrombolytic Therapy**Authors:**

Dorra Chtourou (1), Nourelhouda Nouira (1), ines bhouri (2), Wided Bahria (2), Elmoez Ben othmane (1), Maamoun Ben cheikh (1)

1. urgences , hopital Mongi Slim, tunis, TUNISIA
2. EMERGENCY DEPARTMENT, Mongi slim hospital, TUNIS, TUNISIA

Abstract :

Introduction :

The rapidly aging population is causing an impact on our health care system. Age is an important factor in survival after major trauma.

The aim this study was to compare sociodemographic characteristics between young and elderly patients with major trauma and evaluate differences in mortality.

Methods :

A prospective study was carried out between the period of janvier 2019 to April 2019. All the patients with a major trauma treated at the Emergency department were reviewed. Age, sex, mechanisms of injury, mortality, intensive care treatment and discharge destination were analyzed. The study involved two groups : (1) age < 65 ans (2) age > 65 ans.

Results :

A total of 50 patients were included in the study. Mean age was 36.4 ± 16 years.

Motorized vehicles were the leading cause of injury in young group (63%) while for the elderly domestic accident was the main cause (50%).

20 % of young patients were intubated versus 50 % of old patients.

Mortality in the young was lower than in the elderly (34 % versus 40 %).

Conclusions :

Elderly trauma patients pose special challenges to the health care system. This study shows that elderly trauma patients have higher mortality rates compared to younger adults .

Trial Registration / Funding Information (only) :

Introduction : Acute myocardial infarction (AMI) is an important cause of acute emergencies. The risk of myocardial infarction is 2-4 times higher in diabetics and the mortality of patients with diabetes is almost twice that of non-diabetic. The aim of our study is to compare the outcome of patients with myocardial infarction after thrombolysis in diabetics and non-diabetics in the emergency department. Methods : A prospective study was carried out between the period of janvier 2019 to April 2019. Patients who presented with acute myocardial infarction having ST-elevation as MI picture, were admitted to the emergency department. All these patients were treated with ténecteplase as a thrombolytic agent. Baseline ECG was taken on admission and the one after 60 minutes of thrombolysis. The study group involved two types : (1) diabetic (2) nondiabetics. Results : A total of 36 patients were included in the study. Out of them around 4 (11 %) were females and 32 (89%) were males. ST-segment resolution in non-diabetic patients was found in 17 patients out of 20 and in diabetics it was found in 13 patients out of 16. Complications were more prevalent in diabetics : 6,2% as compared to those in non-diabetics 5 %. Mortality was also more observed in diabetics (6%) VS 5 % in non-diabetics. CONCLUSION : Overall, morbidity and mortality of diabetic patients with acute Myocardial Infarction was found to be greater as compared to non-diabetics.

#19350 : Long-term prognostic factors in Chronic Obstructive Pulmonary Disease (COPD) patients admitted to emergency department for acute exacerbation**Authors:**

rihab Dimassi (1), nada ilahi (1), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Noura (2)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA
2. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: CPOD, pulmonary disease, dyspnea

Abstract :

Introduction: Acute exacerbation of COPD is a leading reason of ED consultation. It negatively affects patient's quality of life. The current study is aimed to identify long-term prognostic factors in patients admitted to the ED for Acute exacerbation of COPD.

Methods: a prospective study including patients admitted to the ED of Monastir for acute exacerbation of COPD between 2013 and 2017. For each patient the demographic, clinical and biological data were collected. A 1 year follow up of the included patients was conducted to assess death and re-hospitalization.

Results:

A total of 354 patients were enrolled. A male predominance was noted (90.8%). 61% patients were aged over 65 years. 16% were diabetics. 10% had cardiovascular history. Non invasive ventilation has been needed in 15% cases. At 1 year 43% of including patients were readmitted and 9.5% were dead. The predictive factors of readmission were: the age over 65 years ($p=0.029$) ; sex ratio ($p=0.04$) and respiratory acidosis($p=0.03$).

The predictive factors of death were : encephalopathy($p=0.003$) ; pneumonia($p=0.05$) ; use of non invasive ventilation ($p=0.002$) and orotracheal intubation ($p=0.009$).

Conclusion: age over 65 years; sex ; clinical and biological gravity signs ; and the use of mechanical ventilation are predictive factors poor prognostic in patients admitted to the ED for acute exacerbation of COPD.

#19352 : Initial findings and feasibility of in-situ qualitative interviews exploring older adults' experiences of emergency department care.**Authors:**

Blair Graham (1), Jason E Smith (2), Ruth Endacott (1), Rosalyn Squire (2), Pamela Nelmes (1), Jos M Latour (1)

1. Faculty of Health & Human Sciences, University of Plymouth, Plymouth, UK
2. Emergency Department, University Hospitals Plymouth NHS Trust, Plymouth, UK

Keywords: Qualitative, Interviews, Patient Experience, Patient Reported Outcomes, Emergency Department

Abstract :**Background**

Optimisation of care for older adults who present to emergency departments, is an area of increasing interest and a top-ranking priority in a recent research priority setting exercise, led by the UK Royal College of Emergency Medicine and the James Lind Alliance.

Questionnaires that enable patients to report the quality of their healthcare experience are known as Patient Reported Experience Measures (PREMs). Each year millions of patients attend Emergency Departments (EDs), however no sufficiently reliable or validated PREM has yet been developed for use in this context. The Patient Reported Experience Measure for Adults aged over 65 years (PREM-ED 65+), is intended to be a validated and reliable PREM for use amongst older adults attending the ED. However, in order to generate items for the PREM, determinants of experience for older adults attending the ED need to be captured.

This study aims to describe the experiences of adults, aged 65 years or over, who attend the ED, focusing specifically on the feasibility and challenges of administering qualitative interviews in this clinical context (ED).

Methods

The study was conducted in a single large UK ED (100,000 attendances/year). English speaking patients aged 65 years or older, who consented to participate, were recruited between December 2018 and April 2019. Sampling was purposive based on age, gender, presentation type and frailty score. Semi- structured interviews were conducted within the ED before discharge or inpatient disposition. Interviews were audio recorded and a standard question guide used. Ethics approval was obtained from the UK NHS Health Research Authority (18/LO/1194).

A 'needs based' conceptual model for patient experience, developed from a prior meta-synthesis of qualitative literature, informed our analysis, building on the descriptive themes which are 'communication needs', 'emotional needs', 'physical/ environmental needs', and 'care needs'. Our intention is to triangulate new or emerging themes with the views of staff members, to inform PREM-ED 65+.

Results:

In total, 24 patient interviews were conducted. The average age of participants was 75 years (range 65–89years), 15/25 (60%) were female, and all lived in their own home prior to attending the ED. The average clinical frailty scale score was 3/9 (Range 1–6). A total of 10 hours of data was obtained during interviews which averaged 25mins in length (range 9min–51min).

Discussion & Conclusions

Initial findings from the thematic analysis will be presented. This will include key themes related to older adults' experiences of ED care and suggested items for inclusion within a new PREM, aimed at older adults attending the ED.

We conclude that 'in-situ' qualitative interviews are feasible within the Emergency Department, potentially being less affected by recall bias than retrospective interviewing. However, conducting qualitative research within emergency departments which are crowded, with high levels of ambient noise and with frequent interruptions, are key limitations to the recruitment of frail older adults into qualitative research.

Trial Registration / Funding Information (only) :

The first author is in receipt of a personal doctoral research fellowship, awarded by the UK Royal College of Emergency Medicine. This study did not receive any additional funding.

#19353 : It's not always sunny at the Mater: retrospective observational study examining seasonal variation in deliberate self-harm related presentations to an inner-city Irish emergency department**Authors:**

Joseph Daly (1), Gerard O'Connor (1), Sinead McArdle (1)

1. Department of Emergency Medicine, Mater Misericordiae University Hospital, Dublin, IRELAND

Keywords: deliberate self harm, season variation, mental health

Abstract :

Background

Seasonal affective disorder (SAD) is a well-recognised mental health condition, whereby patients experience depressive symptoms at the same time each year. This is most commonly during the winter months.

The primary aim of our study was to compare the proportion of presentations to our ED related to deliberate self-harm (DSH) in the months of June 2017 and December 2017. It was hypothesised that December would have a higher rate of DSH related presentations due to SAD.

Our secondary aim was to examine whether an unprecedented spell of warm weather in June 2018 altered the proportion of DSH related presentations compared to June 2017.

Methods

To conduct this single centre retrospective observational study, terms related to DSH were used to search the ED's computer database of presenting complaints for all patients attending during the studied months.

The full triage note for each result was further evaluated to see if the case involved DSH. All patients over the age of 16 years old presenting to the Mater Misericordiae University Hospital ED that met these criteria were included in the study.

The primary outcome being measured was the change in proportion of ED presentations related to DSH in December 2017 compared to June 2017. The N-1 Pearson's Chi-squared test was used to assess statistical significance.

Results

Overall ED presentations were 4,655 in June 2017, 4,969 in December 2017 and 4,693 in June 2018. Using the initial search terms outlined, the numbers yielded were 463, 503 & 506 for the respective months.

After further analysis, the number of true DSH related presentations were 95 in June 2017, 117 in December 2017 and 118 in June 2018. The proportion of total ED presentations which were related to DSH were 2.04%, 2.35% and 2.51% for each month respectively.

Between June 2017 and December 2017 there was a 0.31% increase in the proportion of attendances to our ED that were related to DSH ($p = 0.3002$).

Between June 2017 and June 2018 there was a 0.47% increase in the proportion of ED attendances related to DSH ($p = 0.1277$).

Discussion and Conclusions

Neither the primary nor secondary observed outcomes reached statistical significance (ie. $P < 0.05$). This was due to low overall numbers of DSH related presentations in each of the studied months. The sample size only included 3 months of data, due to limited resources available to analyse the data.

SAD may contribute to the increased proportion of DSH related presentations observed between June 2017 and December 2018. We hypothesised that increased alcohol consumption during the heatwave of June 2018 may be a confounding factor for the higher rate of DSH related presentations.

The external validity of this study is low, due to its single centre design. The catchment area of our ED also has some of the highest rates of social disadvantage in Europe.

This topic warrants further study with a larger sample size, as proving seasonal variation in DSH related presentations may aid in resource allocation for emergency department liaison psychiatry services.

#19355 : PAEDIATRIC TORUS FRACTURES OF THE DISTAL RADIUS: AUDIT OF A UNIVERSITY HOSPITAL APPROACH**Authors:**

Klaas Vanderbiest (1), Patrick Van de Voorde (1)

1. Emergency Department - University Hospital of Ghent, Ghent University Hospital, Ghent, BELGIUM

Keywords: torus fracture, buckle fracture, paediatric

Abstract :**Background:**

Torus or buckle fractures of the distal radius are the most common forearm fractures in children. Because of their inherent stability and few complications, recent guidelines have recommended treatment with non-rigid removable immobilisation devices instead of rigid cast immobilisation. Routine follow-up consultation and radiographic exams are also questioned and deemed unnecessary. This newer approach may have multiple advantages, such as patient and parent convenience, improved wrist functionality and overall cost reduction. The main purpose of this study was to audit a university hospital approach to children with torus fractures of the distal radius, to assess whether recommendations are followed.

Methods:

This study was a retrospective cohort study and evaluated children under 18 years old who presented with a suspected fracture of the wrist or the distal forearm to the emergency department (ED) of the Ghent University Hospital in 2016 and 2017. A subgroup analysis was done for children treated for torus fracture of the distal radius. Diagnosis, treatment and follow-up were evaluated. Proportions of children treated with a non-rigid removable immobilisation device and median numbers of follow-up consultations and x-rays were examined. To explore diagnostic difficulties, inter-observer variability between 2 experienced investigators who reviewed all radiographic images was assessed using kappa statistics. Finally, comparison was done with findings from the literature.

Results:

In total, 205 children with a suspected distal forearm fracture were included. Thirty-nine of them were treated as a torus fracture at the ED, regardless of the correctness of the diagnosis. Diagnosing torus fractures by physicians at the ED had sensitivity, specificity, positive and negative predictive values of 55%, 90%, 56% and 89% respectively. Inter-observer variability assessment between the 2 reviewers showed a Cohen's kappa score of 0.64 (95% CI of 0.38-0.55), meaning a rather poor or moderate agreement, depending on the guideline. All patients with a suspected torus fracture of the distal radius were treated with a rigid non-removable plaster backslab. Most of them had at least 2 routine follow-up consultations and 1 radiographic exam. Besides prolonged discomfort in 3 patients, no serious fracture-related complications occurred in the torus fracture group. Four patients (10%) however had a material related complication.

Discussion & Conclusions:

This audit of a university hospital approach to paediatric torus fractures of the distal radius showed a conservative approach without the use of non-rigid removable immobilisation devices and with several routine follow-up consultations and x-rays. These findings were also found by other institutions, that described several barriers towards an implementation of recently published recommendations and guidelines. Similarly to other studies that mentioned a significant rate of missed and misdiagnosed torus fractures, this study found diagnostic difficulties. To summarise, recent guidelines for the treatment of torus fractures of the distal radius are not followed. These findings may stimulate intra-hospital multidisciplinary discussion to improve diagnostic accuracy and patient management. They may also guide further research, in which focus may be switched from torus fractures towards all stable forearm when assessing diagnostic and therapeutic possibilities, which may be more feasible given the diagnostic difficulties.

Trial Registration / Funding Information (only) :

Trial registration: Not applicable, retrospective audit study. Funding: No external funding was provided.

#19357 : Differences in Fluid Resuscitation and Mortality in Patients with Sepsis or Septic Shock and Pre-Existing Heart Failure**Authors:**

David Kocemba (1), Maria Jensen (2), Casey Clements (3), Hans Kirkegaard (4), Bo Madsen (3)

1. Research Center for Emergency Medicine / Department of Emergency Medicine, Aarhus University Hospital, Denmark / Mayo Clinic, Rochester/Aarhus, DENMARK

2. Research Center for Emergency Medicine / Department of Emergency Medicine, Aarhus University Hospital, Denmark / Mayo Clinic, Aarhus, DENMARK

3. Department of Emergency Medicine, Mayo Clinic, Rochester, USA

4. Research Center for Emergency Medicine, Aarhus University Hospital, Denmark, Aarhus, DENMARK

Keywords: Sepsis, septic shock, fluid resuscitation, congestive heart failure, mortality

Abstract :

Background&objective: The lifetime risk of heart failure is estimated to be 1 in 5 and is one of the leading causes of hospitalization in the United States in patients aged 65 and older. Sepsis is a leading cause of death in hospitals. Concurrent heart failure and sepsis presents a treatment paradox: Heart failure management focuses on managing and avoiding fluid overload whereas fluid administration is a key element in the treatment of septic shock. We studied the difference in fluid administration and mortality between septic patients with and without pre-existing heart failure.

Design and Method: This is a retrospective study of a consecutive cohort of 837 patients who presented to the emergency department (ED) of an American suburban academic medical center between May 2013 and January 2017. All patients presented with either hypotension (≤ 90 mmHg), an elevated lactate (≥ 4 mmol/L) or a combination and had a physician impression of sepsis recorded during the ED course. Patients were divided into two groups based on ICD-9/10 diagnosis of heart failure before ED arrival; there were 306 (37%) with pre-existing heart failure and 531 (63%) without. Additionally, the pre-existing heart failure group was subdivided into HFpEF and HFrEF based on the most recent ECHO before admission; there were 142 (46%) with a reduced ejection fraction $<50\%$ and 164 (54%) with a preserved ejection fraction $\geq 50\%$. Comparisons of total fluids ordered at 3 and 6 hours, ICU admission, ventilatory support and mortality between patient groups after adjusting for chronic kidney disease were evaluated using multivariable linear and logistic regression models.

Results: Patients with pre-existing heart failure received less fluid at 3 hours (mean 26.3 vs 30.7 ml/kg; $p=0.009$) and at 6 hours (mean 38.4 vs 45.0 ml/kg; $p=0.003$) compared to patients without heart failure after adjusting for chronic kidney disease. The adjusted odds ratio for the association of heart failure with ICU admission was 1.57 (95% CI 1.14-2.18; $p=0.006$). Patients with heart failure were not more likely to need intubation or vasopressors ($p=0.35$ and 0.22). Those with heart failure did trend toward an increased likelihood to die in-hospital or within 30 days, but these differences were not statistically significant in a univariable setting or after multivariable adjustment in this sample ($p=0.10$ and 0.14 respectively). However, the adjusted odds ratio for the association of heart failure with 90-day mortality was 1.46 (95% CI 1.03-2.06; $p=0.032$). There were no statistically significant differences in the outcomes studied between heart failure patients with reduced and preserved ejection fraction.

Conclusion: Patients with pre-existing heart failure who present to the ED receive significantly less fluid than patients without pre-existing heart failure at 3 and 6 hours after ED arrival and are more likely to require ICU admission during hospitalization. 90-day mortality is increased among patients with pre-existing heart failure. Based on the results of the current study, heart failure type does not appear to significantly affect the course of sepsis and septic shock.

Trial Registration / Funding Information (only) :

IRB approved No funding Informed consent waived

#19358 : Major trauma in elderly : what is the difference with young?**Authors:**

Wided Bahria (1), Dorra Chtourou (2), Nourelhouda Nouira (2), Elmoez Ben othmane (2), Maamoun Ben cheikh (2), nesrine Selman (1)

1. EMERGENCY DEPARTMENT, Mongi slim hospital, TUNIS, TUNISIA

2. urgences , hopital Mongi Slim, tunis, TUNISIA

Abstract :

Introduction :

The rapidly aging population is causing an impact on our health care system. Age is an important factor in survival after major trauma.

The aim this study was to compare sociodemographic characteristics between young and elderly patients with major trauma and evaluate differences in mortality.

Methods :

A prospective study was carried out between the period of janvier 2019 to April 2019. All the patients with a major trauma treated at the Emergency department were reviewed. Age, sex, mechanisms of injury and mortality were analyzed. The study involved two groups : (1) age < 65 ans (2) age > 65 ans.

Results :

A total of 50 patients were included in the study. Mean age was 36.4 ± 16 years.

Motorized vehicles were the leading cause of injury in young group (63%) while for the elderly domestic accident was the main cause (50%).

20 % of young patients were intubated versus 50 % of old patients.

Mortality in the young was lower than in the elderly (34 % versus 40 %).

Conclusions :

Elderly trauma patients pose special challenges to the health care system. This study shows that elderly trauma patients have higher mortality rates compared to younger adults .

#19359 : The Dark Side of... Medical Simulations

Authors:

Arkadiusz Trzos (1), Karol Łyziński (2), Tomasz Łysek (3)

1. Assistant professor, Head of Department, Department of Disaster Medicine and Emergency Care Jagiellonian University Medical College, Kraków, POLAND

2. Assistant Lecturer, Department of Disaster Medicine and Emergency Care Jagiellonian University Medical College, Krakow, POLAND

3. Assistant Lecturer, Department of Disaster Medicine and Emergency Care Jagiellonian University Medical College, Krakow, POLAND

Keywords: medical simulation, education, emergency medicine

Abstract :**Background:**

Simulation is becoming an increasingly common teaching method at medical universities. Without doubt, it has its advantages as it reflects the reality in which a future doctor will work. Nonetheless, it has also many dark sides that are more and more noticeable. This paper presents an analysis of selected aspects of medical simulation used in the education of students in the era of the changing emergency medicine.

Methods:

In order to collect the material for analysis, an observation of the training of students in the emergency medicine course (5th year of studying) in the years 2017/2018 and 2018/2019 at the Jagiellonian University Medical College was carried out. The material was collected by observing simulation training sessions of 60 groups of students over a period of two years, talking to students (460 people) and assistants (12 people) responsible for simulations. It was supplemented by a survey and a test at the end of the academic year. The analysis was based on the assessment of the value of simulations in the areas of theoretical knowledge acquired, practical skills, as well as shaping attitudes and behaviors.

Results:

Simulation realizes tasks from these three areas differently. Acquiring knowledge shows no correlation in time with gaining practical skills, meaning that the latter happens without sufficient theoretical background amongst students. Teaching medical procedures takes place in isolation from shaping attitudes and behaviors. According to students, the value of simulation depends mostly on the person conducting the simulation instead of the simulation technique or its circumstances. Students want a doctor, not a simulation instructor.

Discussion:

Simulation in its current form focuses on teaching specific activities without understanding their role and significance in the patient's treatment process. Practicing on simulators does not help to shape proper attitudes and behaviors in the relationship with a patient. Learning from mistakes, without paying attention to their consequences creates inappropriate attitudes (sense of impunity, disregard for knowledge). Insufficient preparation of a student for simulation decreases its quality. Simulation without appropriate knowledge leads to the use of surprising and even strange solutions, often dangerous and detached from medical reality. The right choice of instructors/doctors increases the value of the conducted simulation.

Conclusions:

Basing on the experience, an innovative simulation education model was developed incorporating the process approach and the Lean Health Care method. We pay special attention to the patient's treatment, triage, individualization of conduct, the use of resources, and above all the ability to gather, process and

analyze information, make decisions and take actions.

Trial Registration / Funding Information (only) :

Trial Registration: "non clinical work" Funding: "This study did not receive any specific funding." Ethical approval and informed consent: « Not needed. »

#19360 : Predictive factors for st elevation myocardial infarction complications managed by the mobile emergency care unit: comparative prospective study**Authors:**

Ahmed Guesmi (1), Dorra Loghmari (2), Farrouk Douma (3), yassine jridi (3), Rabeb Mbarek (4), Fedi Dziri (3), Mounir Naija (3), Naoufel Chebili (3)

1. service d'aide médicale urgente (SAMU) 03 CHU sahloul sousse, CHU sahloul sousse, SOUSSE, TUNISIA
2. emergency medical service(SAMU), sahloul university hospital,sousse Tunisia, SOUSSE, TUNISIA
3. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, sousse, TUNISIA
4. service d'aide médicale urgente (SAMU) 03 , CHU sahloul sousse, SOUSSE, TUNISIA

Keywords: complications,STEMI,MECU

Abstract :**Predictive factors for st elevation myocardial infarction complications managed by the mobile emergency care unit: comparative prospective study**

A Guesmi ,F Douma,Y Jridi, R Mbarek , F Dziri, M Naija, D Loghmari,N Chebili

BACKGROUND:

Early complications of acute coronary syndromes with ST elevation myocardial infarction (STEMI) are varied and can engage the vital prognosis if poorly managed. Detecting cases with a high risk of complication at an early stage could help improving patient's care and increasing their survival . The aim of this study was to compare the epidemiological and the clinical features of the complicated STEMI with the non-complicated ones and therefore, deduce the predictive factors for these complications.

METHODS:

We collected 305 cases of STEMI handled by mobile emergency care unit (MECU) over a period of 12 monthes from January 2018 to December 2018. The epidemiological and clinical features were compared between patients with early complications and patients with no complications.

RESULTS: Among the 104 patients that experienced complications 9% faced cardiopulmonary arrest 11% had cardiogenic shock , 24% got arrhythmia , 32% experienced conduction disorders 20% had left heart failure and other complications 4% (ventricular ectopic beat , sinus bradycardia, coronary dissection, extension to the right ventricle). The average age of complicated STEMI was 65 versus 59 for non-complicated STEMI. 68% of the complicated cases and 80% of non-complicated cases were male. 72% of the cases presenting complications were from urban areas, compared to 59% of the non-complicated STEMI. There was a significant difference at 0.04 significance level. In 77% of the complicated STEMI the call was to report a diagnosed STEMI (compared to 80% of non-complicated STEMI); in a regional hospitals in 47% of the cases (compared to 55%), in university hospitals in 39% of the cases (compared to 32%) and at a free practice physician in 5% of cases. Regarding the patient's medical history, 15% of patients with a complicated STEMI were known to have a coronary artery disease (compared to 14% of non-complicated), 39% had diabetes (25% of non-complicated, $p=0.015$) and 24% were smokers (against 28% of non complicated). The predominant territory of STEMI was inferior in 28% of cases for the complicated compared to 30% for the non complicated without significant difference.

CONCLUSION: Patients with a STEMI with a history of diabetes from urban areas tend to have more early complications.

Trial Registration / Funding Information (only) :

NO FUNDING

#19361 : Initial findings from focus groups with emergency department staff exploring older adults' experiences of care.

Authors:

Blair Graham (1), Jason E Smith (2), Ruth Endacott (1), Rosalyn Squire (2), Pamela Nelmes (1), Jos M Latour (1)

1. Faculty of Health & Human Sciences, University of Plymouth, Plymouth, UK
2. Emergency Department, University Hospitals Plymouth NHS Trust, Plymouth, UK

Keywords: Qualitative, Focus Groups, Patient Experience, Patient Reported Outcomes, Emergency Department

Abstract :**Background**

Providing optimal care for older adults attending the ED is a focus of increasing interest and was a key priority highlighted in a research priority setting exercise led by the Royal College of Emergency Medicine. The Patient Reported Experience Measure for Adults aged over 65 years (PREM-ED 65+) is currently being developed and is intended to be a valid and reliable PREM for older adults attending the ED.

To inform the development of PREM items it is essential to understand the determinants of patient experience. As such, in-situ interviews with older adults attending the ED were conducted. However, challenges inherent to interviewing older adults—including communication difficulties, problems with recall, and unwillingness to criticise care when asked—presented a potential problem when attempting to ensure that an accurate impression of patient experience was obtained. In order to address this concern, focus groups were simultaneously held with ED staff to gain their complimentary perspectives.

This study aims to describe the perceptions of ED staff relating to the determinants of older adults' experiences of ED care.

Methods

The study was conducted with staff working across three major EDs in the South West of England (combined attendances approx. 260,000 per year). Staff involved in delivering direct clinical care to older adults were invited to participate in focus groups facilitated by the lead researcher (BG). Where possible, focus groups were structured to consist of a representative mix of staff. Focus groups were audio recorded, and a standard question guide was used. Field notes were obtained to capture group interaction. Ethics approval was obtained from the UK NHS Health Research Authority (18/LO/1194).

A 'needs based' conceptual model for patient experience, developed from a prior meta-synthesis of qualitative literature, informed our analysis, building on the descriptive themes which are 'communication needs', 'emotional needs', 'physical/ environmental needs', and 'care needs'. Our intention is to triangulate existing, new and emerging themes with views obtained from interviews with patients. Combined, this will inform items for inclusion in PREM-ED 65+.

Results

A total of 7 focus groups were conducted involving a 37 individual staff (average group size 5; range 4—6 staff). Participants included ED physicians (19), nurses (11), specialist frailty nurses (4), and an occupational therapist, physiotherapist and paramedic practitioner. Clinical experience ranged from six months to more than 20 years. A total of 5.6 hours of data was obtained (average focus group duration 72mins; range 60—94mins).

Discussion and Conclusions

Findings from the thematic analysis will be presented. This will include key themes related to staff perceptions of older adults' experiences of ED care. Initial impressions from the focus groups suggest that staff are critically reflective of ED care processes for older adults. As well as highlighting perceived problems, staff are keen to suggest solutions. Once analysis is complete, this data will be triangulated with patients' views in order to suggest potential items for inclusion in PREM-ED 65+. Items will eventually be prioritised and reduced using a multi-stakeholder consensus setting process.

Trial Registration / Funding Information (only) :

The first author is in receipt of a personal doctoral research fellowship, awarded by the UK Royal College of Emergency Medicine. This study did not receive any additional funding.

#19362 : Understanding patient perspectives on informed consent for analgesia research in the Emergency Department

Authors:

Alexandra Sloan (1), Kenneth Morrison (2), Laura Cottey (3), Tim Nutbeam (3), Jason Smith (3)

1. Medical Student , University of Plymouth, Plymouth, UK
2. Foundation Year 1 , University Hospitals Plymouth NHS Trust , Plymouth, UK
3. Emergency Department, University Hospitals Plymouth NHS Trust, Plymouth, UK

Keywords: trauma, analgesia, pain, consent, research trials

Abstract :

Background

Acute pain is common in emergency patients. Acute pain management is an important area for research with previous reports highlighting poor pain management impacting negatively on patient experience, but obtaining consent in these circumstances is challenging. For patients experiencing a health emergency, the capacity to make decisions regarding analgesia and to consent to participate in research can be affected by many factors including co-morbidities, stress, emotion and the illness or injury itself. Consent waivers are often granted in seriously compromised patients, but this process is less clear when the patient is conscious but in severe pain. Furthermore, little is known about the patient perspective.

Methods

A face to face survey was completed from February to April 2019 in a UK major trauma centre ED by two interviewers. Additional physiological information was collected from the pre-hospital and hospital patient care record. The survey was approved and registered with University Hospitals Plymouth NHS Trust, CA_2018-19-12.

Participants were identified through convenience sampling using the inclusion criteria: aged 18 years or over; Glasgow Coma Scale of 15; presented with a traumatic injury or abdominal pain; had been conveyed to hospital by ambulance; and could recall their pre-hospital treatment. Participants provided verbal consent to be interviewed. Bias between interviewers was minimized through set questions.

The primary outcome was to determine if participants felt they could have provided informed consent at set time points. Secondary measures included patient demographics, physiological and pain data, analgesia and patient perspective comments from open questions.

Results

37 participants were surveyed (20 female, 17 male, aged 18 to >85 years). 95% reported past medical problems, 92% were taking one or more regular medications, with 38% on regular analgesia. Abdominal pain made up 78% (n=28) of participants.

87% of respondents received analgesia in the pre-hospital setting. 97% thought that research to improve acute pain management was a good idea.

78% reported that pain was at its worst before receiving pre-hospital analgesia and 13% reported it was worse on transfer to, arrival at or in the ED. Pain scores were not recorded in 2 participants at initial pre-hospital contact, 6 participants following initial analgesia and in 10 participants at ED triage.

Regarding decision-making for written informed consent, 24% felt they couldn't have provided consent prior to receiving pre-hospital analgesia, which decreased to 11% after initial pain relief and to 5% in the ED. Comments were themed around inability to process, understand and retain information due to pain. 84% reported that they would have been happy to have consent delayed until arrival at the ED; those with concerns

reported medical history, drug interactions and allergies as important considerations.

Conclusion

Emergency care analgesia research is important to patients, and several factors influence a patient's perceived ability to provide informed consent including environment, pain and pre-existing conditions. When planning analgesia research, patient involvement is key to determining the informed consent process.

Trial Registration / Funding Information (only) :

University Hospitals Plymouth NHS Trust, CA_2018-19-12

#19366 : Contribution of Pulmonary Ultrasound in the Diagnosis of Acute Heart Failure (AHF) in Patients with decompensated chronic obstructive pulmonary disease (COPD)**Authors:**

rihab Dimassi (1), khoulood Mefteh (1), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Noura (2)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA
2. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: COPD,dyspnea,ultrasound,heart failure

Abstract :**Introduction:**

The management of decompensated COPD is a challenging situation in the ED. To distinguishing between of cardiac dyspnea (AHF) and non-cardiac dyspnea is a main part of this management.

The aim of this study is to evaluate the contribution of pulmonary ultrasound in the diagnosis of AHF in patients admitted in ED with decompensated COPD.

Methods

This is a prospective study conducted from January 2016 to December 2018, enrolling patients presenting to Monastir emergency department for decompensated COPD. The diagnosis of a cardiac dyspnea was based in clinical; biological; chest x-ray and echocardiography findings. To diagnose the AHF, a lung ultrasound has been performed to identify lung comet score(LCS).

Results:

A total of 196 patients were included. 33% were diagnosed with cardiac dyspnea. Sex ratio was (H/F) 3.08. The performance of LCS was evaluated by ROC curve (AUC= 0.73).

A cutoff LCS was 10 with a sensitivity of 80% and a specificity of 48%.

Conclusion:

The findings of this study suggest that Pulmonary Ultrasound can be useful to predict the diagnosis of AHF in patients admitted in the ED for decompensated COPD.

#19369 : Prognostic impact of qSOFA score and shock index in sepsis at emergency department: an observational study**Authors:**

Mayssa Hamdeni (1), Yosra YAHIA (1), Nadia Zaouak (1), Khedija Zaouche (1), Amel Bhira (1), Asma Ben Hamida (1), Hamida Maghraoui (1), Kamel Majed (1)

1. Emergency department, La Rabta hospital, tunis, TUNISIA

Keywords: qSOFA-shock index-Sepsis-Prognosis-Emergency

Abstract :

Introduction: Morbidity and mortality in sepsis remain important although the improvement of sepsis management . The optimization of sepsis care requires an identification of patients with high risk of poor prognosis. The aim of this study is to evaluate the usefulness of QSOFAscore and shock index to predict prognosis in patients hospitalized at emergency department (ED) for sepsis.

Methods :This is a retrospective observational study conducted in all patients admitted to ED for sepsis between july 2018 and december 2018. Data of all patients were collected and the Qsofa and shock index were calculated at admission. A statistical analysis was done on SPSS22 software using Student's t-test ($p < 0,05$). The main study endpoints were inpatient mortality.and the use of mechanical ventilation or vasoactive drugs.

Results: A total of 119 patients were included. The mean age was 62 ± 17 years.37% were females and 63% were males. Medical history's patients were :tabagisme (48%), hypertension (5%), diabetes (9%) and heart failure (7%), asthma (6%).At admission: Mean heart rate was 100 ± 21 cpm, systolic blood pressure $115 \text{mmhg} \pm 43$,diastolic blood pressure $70 \text{mmhg} \pm 17$, respiratory rate $25 \text{cpm} \pm 6.8$, median Glasgow score was 15. Blood biological analysis : leucocytes= $13820 \pm 9150/\text{mm}^3$,hemoglobinemia= $12 \pm 2.5\text{g}/\text{dl}$, C- reactive protein= $91 \pm 130\text{mg}/\text{L}$, creatinemia= $12\text{mg}/\text{l} \pm 18$, bilirubinemia= 13 ± 5.9 , pH= 7.36 ± 0.24 , bicarbonate= $18.15 \pm 8,2\text{mmoles}/\text{L}$. The most frequent sites of infection were : urinary (35%), pulmonary (27%) and neuromeningeal infection (9%). Mechanical ventilation was used in 27.9% and vasoactive drugs in 18.4%. 57% were discharged, 22% were transferred to other services. The mortality rate was 21% . Median qSOFA score was 1 and median shock index was 0.96.The qSOFA score was significantly correlated with the use of mechanical ventilation ($p=0,015$), vasoactive drugs ($p=0,02$) and with inhospital mortality ($p=0,026$).The shock index was significantly correlated with the use of mechanical ventilation ($p=0.031$) but not with the use of vasoactive drugs($p=0.15$) and the inhospital mortality ($p=0,67$)

Discussion and conclusion:

Clinical scores that doesn't include laboratory testing seem to be useful for the initial assessment of those at risk of sepsis. So these bedside scores can prevent delayed time of diagnosis and therefore improve the prognosis of patients with sepsis. The qSOFA score may identify patients with suspected infection who are at greater risk for a poor outcome. A qSOFA score ≥ 2 identifies a patient with a risk of mortality by sepsis $\geq 10\%$. The shock index (SI) defined as heart rate divided by systolic blood pressure with a normal range of 0.5 to 0.7 may be a more sensitive indicator of occult shock, especially in trauma or acute hemorrhage. Our study showed that only qSOFA was signifantly correlated with inhospital mortality and the use of vasoactive drugs. Otherwise qSOFA and shock index were both correlated to the use of mechanical ventilation.

#19372 : Procedural sedation and analgesia in a Belgian Emergency Department: an observational cohort study.

Authors:

Laurens De Grim (1), Hannelore Raemen (1), Koen Monsieurs (1)

1. emergency department, Antwerp University Hospital, Antwerp, BELGIUM

Keywords: Emergency department, procedural sedation, SIVA, Belgian

Abstract :

Aim:

To describe the indications, used medication and safety of procedural sedation in a Belgian University Hospital Emergency Department.

Methodes:

We performed a prospective observational cohort study of all patients who underwent procedural sedation and analgesia in a Belgian Emergency Department between April 2017 and April 2018. Standardised forms were used to collect data on patient demographics, indication, performed procedures, used medication and the occurrence of adverse events classified by the SIVA adverse event reporting tool.

Results:

171 patients were included in the study. Median age was 53 years, 56% were male. 40% of patients were ASA class 1, 37% were ASA class 2 and 22% were class 3 or higher. The majority of the patients underwent procedural sedation for cardioversion (34%), reduction of fractures (30%) or dislocations (26%). Propofol and ketamine were the most frequently used medications. Adverse events occurred in 12% of cases, mostly due to apnoea (33%), hypoxia (19%) and emesis (19%). All of the adverse events were transient. None of the patients suffered an adverse outcome.

Logistic regression analysis revealed ASA class 3 or higher as independent risk factor for adverse events.

Conclusion:

This Belgian cohort study supports the results of international studies showing that procedural sedation in the emergency department is safe, with a 12% adverse event rate and without occurrence of adverse outcomes.

Trial Registration / Funding Information (only) :

No funding

#19373 : PULMONARY EMBOLISM: THE INVISIBLE KILLER

Authors:

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), STEFANO PERLINI (2), GIOVANNI RICEVUTI (1), LUCREZIA PORTA (3), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. , POLICLINICO , pavia, ITALY
3. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: PULMONARY EMBOLISM, EMERGENCY DEPARTEMENT, TRIAGE

Abstract :

Introduction: The diagnosis of pulmonary embolism is now extremely insidious and difficult. This is mainly due to the extremely variable picture of the symptomatology and the very perception of the patient: in fact the patient first often does not recognize as important the symptoms presented.

A large number of pulmonary embolism escapes medical diagnosis and is only found at autopsy. From this point of view the latest European guidelines have been drafted in order to avoid the greatest number of miss diagnoses.

Purpose: To analyse the ability to detect or suspect from the earliest stages the diagnosis of pulmonary embolism in a large patient cohort diagnosed with hyperacute pulmonary embolism. This through the evaluation of the pre-test scores proposed by the European society within our reality; The evaluation of the present symptomatological framework and the analysis of the risk factors.

Results: 92 patients were enrolled with diagnosis of acute pulmonary embolism at our ED, affered in two consecutive years (2016-2017).

These had an average of 68 years, with equal distribution of the sexes. 57% went to our own AND independently with their own means.

9.7% showed signs of shock with BP < 90 mmHg and HR > 100. The remainder had lifecyclesthe parameters in the norm with a mean of BP = 137/82; HR = 88. The most compromised parameter has been shown to be oxygen saturation with an average of 94.5%, while 30% has values < 94%

The most frequently represented symptoms were: dyspnea (41%), followed by chest pain (30%); Signs of TVP (18%) and Syncope and Presyncope (12%).

According to the Wells score, 16% were low-risk, 56% at medium-risk and 21% at high risk.

Considering the Geneva score, 30% were at low risk, 66% at medium risk and 4% at high risk.

At 36% of these patients a priority code was given to white or green medical examination, 60% had a yellow code and only 2.5% a code red.

More than 95% needed hospitalization.

4% needed a return to 30 days and 13% returned to 60 days, or after hospitalization.

27% of patients presented a low mortality risk score (spent = 0); 61% of patients had an average mortality risk score (spent = 1-2); 12% of patients presented with a high risk of mortality (spent = 3-4);

Conclusions: The study shows how the symptomatological picture is very blurred and varied, as demonstrated, not only by the variety of symptoms, by the high percentage of low priority codes to medical examination, and by the high prevalence of vital parameters of normality ; But also from the low risk pre-test (30% according to the Geneva score was low risk). This in the face of an important pathology as evidenced by the high prevalence of massive pulmonary embolism (30%), a high risk of mortality at the score spent (60% moderate risk and 12% higher risk), the

Elevat needs hospitalization and a high Return rate to 60 days (12%).

#19375 : Prognosis at one year of Acute Coronary Syndrome. An observational prospective study**Authors:**

maha Touti (1), rihab Dimassi (1), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Noura (2)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA

2. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: coronary diseases, chest pain unit,

Abstract :

Introduction : Ischemic cardiomyopathy is the first cause of mortality in the world and its prevalence is continuously increasing. Its long term prognosis in Tunisia is unknown.

Aim : To evaluate the one year outcome of patients admitted to the Emergency department with Non-ST segment Elevation Myocardial Infarction (NSTEMI) ACS.

Materials and Methods : A prospective study including patients admitted with NSTEMI ACS from June 2007 to January 2019 and followed up during one year. The occurrence of Major Adverse Cardiovascular Events (MACE) is evaluated during the follow up period. Statistical Analysis was conducted using SPSS 22.

Results : The study included 1677 patients of which 1155 were male. The mean age was 63.5 years. Regarding the cardiovascular risk factors: 926 were diabetic (52.7%) of which 364 were Insulin-dependent, 995 had hypertension (56%), 713 had a history of ischemic cardiomyopathy (40.6%), 470 had dyslipidemia (26.8%), 781 were smokers (44.4%). The ACS was complicated by ventricular arrhythmia in 9.6% of patients, cardiogenic shock in 2.7% and death in 2% of patients.

Conclusion: The results found in this study were comparable of those in the literature. Further detailed analysis could provide suggestions to improve the prognosis.

#19376 : One universal and polyglot digitisable disaster patient medical record**Authors:**

Gerlant van Berlaer (1), Frank de Jong (2), Michel Debacker (3), Ives Hubloue (1)

1. Department of Emergency and Disaster Medicine, Universitair Ziekenhuis Brussel, Brussels, BELGIUM
2. Belgian First Aid and Support Team, Federal Public Health Service Belgium, Brussels, BELGIUM
3. Department of Emergency Medicine, Universitair Ziekenhuis Brussel, Brussels, BELGIUM

Keywords: disaster, humanitarian, EMT, patient record

Abstract :**Introduction**

Emergency Medical Teams (EMTs) providing healthcare to victims of humanitarian emergencies still fail to report in a structured way about their patients' complaints, diagnoses, and the provided treatment. The main reason is the lack of a universal template for medical data registering and reporting. This prevents timely outbreak detection, comparability and exchangeability of data between different healthcare providers, and evidence based improvement of disaster preparedness and response. EMTs need a user-friendly and appropriately designed template to document their interventions. Our research group developed a uniform, universal and multilanguage versatile individual disaster patient medical record, based on evidence and literature review, and considering all stakeholders: the patient, the field worker, the authorities and the researchers.

Methods

From analysis of detailed patient forms of 9214 disaster victims presenting to EMTs in five different types of events, a list of most common complaints, diagnoses, and treatment was produced. Required minimal clinical and early warning data as defined by the WHO were supplemented, categorised according to ICD-10, and organised on a single sided digitisable paper and digital form.

Results

Next to demographic, parametric and referral data, a list of 64 complaints, 64 diagnoses, and 120 drugs and materials was composed. When introducing all patient data into this template, less than 1.7% of all collected items were categorised as "other", meaning this template is suited for most disaster patients.

The paper form is digitisable by a simple scan at 300dpi, displayable or reprintable in 55 available languages, and generates an automated referral letter. Patient data are automatically clustered into a table with anonymised data to be sent daily to local or international health authorities.

Conclusion

Better communication on patient care among EMTs, local healthcare providers, and health authorities, is requested by the WHO. Our research group developed a uniform, universal and multilanguage versatile individual disaster patient medical record, based on evidence and serving all stakeholders. This digitisable paper and digital record is the first to facilitate EMT interoperability, real-time surveillance, and automated timely reporting.

Trial Registration / Funding Information (only) :

No funding

#19378 : Instructions for difficult dialogues and breaking bad news in the Emergency Department

Authors:

Steffen Grautoff (1)

1. , Klinikum Herford, Herford, GERMANY

Keywords: end of life decisions, medical ethics, caring consultation

Abstract :Background:

In Emergency medicine a lot of effort is put into place to train and teach for emergency situations. Rules, principles and guidelines are applied to different medical problems to ensure correct decision-making in time-critical situations.

However, if ethical questions arise, Emergency providers often feel not well prepared for a dialogue on this subject. If not trained well, it can be a very challenging task to discuss sensitive issues with patients and their relatives especially in a busy Emergency Room.

Methods:

We have created a manual containing information and advices for difficult dialogues and breaking bad news.

It starts with a section on how to prepare for the talk by minimizing any disturbances which might occur during the conversation.

There is a part on optimizing communication structure and content beforehand to be able to guide the dialogue partners through the talk.

It is explained that honesty is an essential part of this conversation.

Giving hope to patients and relatives is important if appropriate. On the other side limitations of modern medicine embedded into ethical questions should be explained if necessary.

An empathetic attitude should be adopted throughout the dialogue as well as maintaining simple vocabulary with avoidance of complex medical terms.

Since the situation is stressful for patients and relatives faced with end of life decisions regarding themselves or regarding their loved ones, very often important information is not understood properly. Therefore, it should be emphasized that it might be necessary to repeat relevant information.

It should be pointed out that decisions made are subject to change if the patient impairs or improves.

Overall it is essential to maintain a high degree of authenticity to gain trust of the dialogue partners.

Results:

After receiving very positive feedback about the manual we implemented the information provided into our local intranet database. As a preparation for a conversation which contains sensitive topics such as end-of-life decisions, Emergency providers can now access this manual.

Discussions and conclusions:

Young and unexperienced Emergency providers might feel better prepared for their first talks to patients and their bystanders on subjects containing difficult ethical decision making. This manual does not replace but complement an introduction and mentoring of an experienced colleague on this topic.

Trial Registration / Funding Information (only) :

no funding no ethical approval necessary

#19380 : Clinical manifestations of cocaine exposure in the pediatric emergency department**Authors:**

Lorenzo Zanetto (1), Federica Dal Piva (1), Melissa Rosa-Rizzotto (2), Silvia Bressan (3), Masiero Susanna (1), Deborah Snijders (1)

1. Division of Emergency Medicine, Department of Women's and Children's Health, University of Padova, Padova, Italy, University of Padova, Padova, ITALY
2. Child Abuse and Neglect Crisis Unit, Department of Women's and Children's Health, University of Padova, Padova, Italy, University of Padova, Padova, ITALY
3. Division of Emergency Medicine, Department of Women's and Children's Health, University of Padova, Padova, ITALY

Keywords: pediatrics, cocaine, substance abuse, emergency department

Abstract :

Background: In the last decades, substance abuse has been mostly steady, with the exception of a significant increase in cannabinoids and cocaine circulation. From a clinical point of view, emergency department (ED) clinicians may evaluate substance abusers for a wide variety of symptoms. While adults and adolescents usually come to the ED with well-known clinical manifestations, no studies have thoroughly investigated how passive cocaine exposure might reveal itself in younger children.

Objectives: The aim of the study was to investigate the prevalence and describe presenting complaints and clinical manifestations of unsuspected exposure to cocaine in children attending to the pediatric ED.

Methods: We performed a retrospective study of children below 16 years of age evaluated in the ED of a tertiary care Pediatric Hospital of Padua, Italy, in 2018. Children were included if they received urine or blood toxicology screenings, in absence of a clear history of cocaine exposure.

Results: 102 children under 16 years underwent toxicology screening after evaluation in our Pediatric ED, 13 children showed positivity of urine or blood screening. Of these, 12 had confirmation of cocaine exposure by second-level analyses. Three were evaluated for signs and symptoms compatible with a first episode of absence epilepsy [Odds Ratio (OR) of cocaine exposure in these patients = 14.7, 95% confidence interval (CI) 2.16-99.7, $p < 0.05$]. Other signs such as first convulsive episodes [OR = 1.44, 95% CI 0.35-5.87], tachycardia [OR = 2.52, 95% CI 0.58-10.94] or irritability [OR = 2.04, 95% CI 0.61-6.9] showed no correlation with confirmed cocaine exposure. All 13 patients were hospitalized, nine (69%) resulted positive for other substances, the most frequent being cannabinoids. Ten patients had dysfunctional family dynamics that would mostly surface during hospitalization, and were not investigated in the ED history-taking.

Conclusion: With the increase in cocaine abuse among adults, the risk of transfer to children is also increasing. Unfortunately, no single sign and symptom can be used to accurately identify children who have been exposed to cocaine. Toxicology screens may be useful for children presenting to the ED with suspicion of absence epilepsy. Clinicians should consider cocaine exposure in infants and children presenting with non-specific signs and symptoms, seizures or movement disorders. Larger studies will be needed to develop a prediction model of cocaine exposure in childhood.

Trial Registration / Funding Information (only) :

No funding was secured for this study

#19381 : Exploring community emergency medicine: Which factors are associated with conveyance to an emergency department after assessment by a physician response unit? An observational study**Authors:**

Lisa Ramage (1), Ioannis Pilavakis (2), Issmaeel Ansari (2), Tony Joy (1)

1. Physician Response Unit, Barts Health NHS Trust/London's Air Ambulance, London, UK
2. Physician Response Unit, Faculty of Prehospital Care, London, UK

Keywords: Pre-Hospital care; Community Emergency Medicine;

Abstract :**Introduction**

The Physician Response Unit (PRU) operates within the North-East sector of London, responding to a wide variety of emergency 999 calls. Staffed by Emergency Medicine doctors (Emergency Medicine registrars and consultants) and London Ambulance Service Technicians, the PRU has a wide range of therapeutic and diagnostics to hand, allowing the practice of a novel brand of Community Emergency Medicine that aims to bring the Emergency Department (ED) to the patient. The service operates 365 days a year, from 0800-2000.

The objective of this observational study was to explore whether several non-clinical factors were associated with the decision to convey to an ED rather than treat within the community in a cohort of medically unwell patients.

Methods

Patient data from September 2018-19 was identified through interrogation of a prospectively maintained database containing dispatch, clinical and outcome data. Included patients were adults (18 years or over) with a recorded medical diagnosis. Patients were excluded if they died in the community, had a non-medical diagnosis, or were palliative and therefore managed using alternative pathways. The primary outcome was hospital conveyance versus community-based care. Included variables were: sex; age; dispatch type; location of consultation; consultant presence; and out-of-hours assessment (after 1700 weekdays or Saturday/Sunday). Frequencies of included variables in those conveyed versus those managed in the community were compared using the Chi-Squared test. Odds ratios and 95% Confidence Intervals (CI) were calculated.

Results

There were a total of 958 patient encounters matching the selection criteria as described above over a 12-month period. Of these, 297 (31.0%) were conveyed to the ED and 661 (69.0%) patients were managed in the community. 555 (57.9%) were females, and 374 (39.0%) were over 70 years of age. 'Other general medical conditions', gastroenterological complaints and respiratory problems were the most frequent medical encounters noted. Males were 1.58 times more likely to be conveyed to hospital than females (36.7% versus 26.8%; OR 1.581 95% CI 1.20-2.08; $p=0.01$). Patients under 70 were more 1.28 times likely to be conveyed to hospital 33.0% versus 27.8%; this was approaching statistical significance (OR 1.28 95% CI 0.964 -1.703, $p=0.087$). Patient consultations where the PRU was the primary resource were more likely to be conveyed compared to those where an ambulance crew had requested the PRU for assistance: 34.2% versus 24.7% (OR 1.587 95% CI 1.174-2.145, $p=0.003$). 30.0% of patients seen within their own residence versus 37.7% of those seen elsewhere were conveyed to ED ($p=0.079$). There were no significant differences identified between the conveyed and non-conveyed groups in those seen after 5pm ($p=0.588$) or on a weekend ($p=0.634$), and those where there was the presence of a consultant ($p=0.284$).

Conclusion

Certain patient groups are more likely to require conveyance to an ED. Higher proportions of older patients are managed in the community, a likely consequence of the PRU operational model focussing on safe, community-based holistic care in order to protect patients from unnecessary hospital admissions. The presence of a consultant did not influence the decision not to convey to ED.

Trial Registration / Funding Information (only) :

The database used in preparation of this abstract has been registered with the Clinical Effectiveness Unit at Barts Health NHS Trust

#19382 : Attitudes towards family presence during cardiopulmonary resuscitation: Emergency Department staff survey

Authors:

Jonathan Curry (1)

1. Emergency Department, Morriston Hospital, Swansea Bay University Health Board, Swansea, UK

Abstract :**Background**

Family presence during cardiopulmonary resuscitation remains controversial despite becoming more commonplace in Emergency Departments across the UK, particularly during paediatric resuscitation. Concerns about distraction from distressed relatives are often cited, however, there is a building body of evidence that it can help families during their bereavement without affecting the performance of the resuscitation team.

Methods

A survey of clinical staff in the Emergency Department of Morriston Hospital, Swansea, UK was undertaken to assess experience and attitudes towards family presence during resuscitation of adult patients.

Results

31 members of staff responded with a variety of medical and nursing staff. 87% (27/31) felt that relatives should be asked if they would like to be present during cardiopulmonary resuscitation but none stated that it was their usual practice. Many reasons were given for not asking, with lack of available staff to support relatives, fear of interference by relatives and the belief that patients should receive the full attention of the resuscitation team being the most common barriers.

Conclusion

Most Emergency Department staff believe that relatives should be given the opportunity to be present during resuscitation of adult patients. However, this does not usually happen for a number of reasons. When offering relatives the option to be present it should be done with consideration and requires a dedicated member of staff to support family members. The availability of a dedicated and appropriately skilled member of staff is variable and options to make this more consistent in our department are being considered.

#19383 : An observational study of older adults admitted to the head injury ward**Authors:**

Emma Clark (1), Jonathan Ritchie (1), Christopher Dale (2), Jennifer Cochrane (2)

1. University of Glasgow, University of Glasgow, Glasgow, UK
2. Royal Alexandra Hospital, Emergency Department, NHS, Glasgow, UK

Keywords: head injury, frailty, elderly, emergency medicine

Abstract :

An observational study of Older adults admitted to the head injury ward

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Introduction

Head injuries in the older adult population are an increasing presentation to the emergency department as a result of an aging population. The cause of injuries can be more complex in the frail older adult, require further investigations and multidisciplinary input to facilitate safe discharge home.

Our department at the Royal Alexandra Hospital (RAH) in Paisley, Scotland serves a population of approximately 200,000 people with approximately 750 beds. The RAH has a dedicated ward for head injuries managed by Emergency Department (ED) consultants. It provides inpatient observation of patients unsuitable to discharge home from the ED who have sustained a head injury. Patients can be admitted who do not require a CT scan, a normal CT result, or who have sustained an intracranial bleed which does not require operative input after discussion with neurosurgical colleagues.

This ward aims to manage symptoms, observe those without social support and discharge patients within 48 hours. Patients with clear other care needs are admitted under the appropriate speciality. Presentations of frail older adults are the most complex to manage and ensuring appropriate care by the right team can improve patient outcomes in this group.

We wanted to determine if the cohort of frail patients are inappropriately admitted under the care of the ED as they do not meet criteria from initial presentation that would allow discharge within 48 hours due to increased care needs.

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Methods

This retrospective cohort study reviewed medical notes of all patients aged over 65, admitted to the head injury ward over a 1-year period (Jan 2018-Jan 2019).

Frailty was assessed using the F.R.A.I.L screening tool. A patient is deemed frail if there is evidence of: functional impairment due to significant co-morbidity, a care-home resident, documented acute confusion, impaired mobility, or require increased support on discharge.

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Results

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116 patients were admitted and reviewed, the median age was 79.(Minimum 67 and maximum 98 with an average of 79) Average length of stay on the head injury ward was 1.94 days.

32/166 patients were referred to a different inpatient speciality following admission to the head injury ward.

45/116 of patients were regarded as frail. Their average length of stay was 2.6 days and 15/45 were referred to other specialities compared with 1.52 days and 17/71 respectively in the non-frail group.

Discussion

We found 95/116 patients over 65 admitted to our head injury ward were appropriately admitted and discharged within 48 hours. However, 40% were described as frail when using the frailty scoring tool. Notwithstanding a degree of hindsight bias, the results show that this cohort have a prolonged LOS and require subsequent transfer to another speciality during admission.

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Head injuries in older adults can be the result of disequilibrium in a complex, frail patient and the use of frailty screening tools in the ED can help identify those patients requiring specialist input from elderly care teams rather than admission to a short stay ward and subsequent transfer.

#19384 : Trends in Student Emergency Department Visits with Mental Health Illness In A U.S. Public University – A Data Linkage Study.**Authors:**

Saumitra Rege (1), Christopher Holstege (1)

1. Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, USA

Keywords: Mental Health, ED visits, Student Population, Data Linkage

Abstract :

Background: Mental health issues are common among students worldwide. For instance, according to the U.S. National Institutes of Mental Health, approximately 46.6 million patients suffered from mental illnesses in 2017. Adults aged 18-25 years had the highest prevalence of any mental illness (25.8%). According to WHO, depression and anxiety are a leading cause of disease burden among children and adolescents in Europe. Considering the growing student population and the close association of emergency department (ED) visits with mental health diagnoses, it is critical to monitor these trends.

Methods: The ED electronic medical records from 8 academic years 2009-10 to 2016-17 were queried for student visits. ED records were linked to the university's student admission dataset that contains information on student demographics, academic involvements, and organizational affiliations. Student ED visits due to mental health issues were identified based on ICD codes. Prevalence of mental health-related ED visits (per 100 student ED visits) was calculated. The trends were evaluated using Poisson regression.

Results: A total of 510 student ED visits due to mental health issues at the academic health care center associated with the University. The mean age of students visiting the ED for mental health issues was 21 years. Females were predominant in the sample (55%). Most students were white (57%). Students studying in the College of Arts and Sciences (71%) were more common. The majority were enrolled in an undergraduate degree program (85%) with graduate students being uncommon. The prevalence of military veterans (4%) in the sample who visited the ED for mental health issues was low. Among the students with mental health ED visits, the proportion of Interfraternity/Sorority affiliation was lower (9% vs 12%) and that of students with an athletic scholarship was higher (7% vs 4%) compared to those without a mental health ED visit. During the study period, the prevalence of student ED visits related to mental health increased by 8.7% from 4.6 per 100 student ED visits to 5 per 100 student ED visits. The rate of student ED visits due to depression increased among individuals under 20 years of age (3.7 to 4.1), and males (4.7 to 5.1), while decreasing among whites (4.2 to 3.5), undergraduates (4.9 to 4.1) and athletic scholarship recipients (4.9 to 4.1). ED visits due to anxiety significantly increased among individuals below 20 years (3.6 to 5.2), females (4.6 to 6.3), whites (4.6 to 5.9), and Interfraternity/Sorority students (4.6 to 6.7).

Discussion: This is a novel study describing the trends in student mental health ED visits. There was a linear increase in the number and rate of such visits. A unique strength of our study was the use of extensively linked datasets to monitor the trends and characterize a wider range of personal and campus-related determinants. Using this data linkage, we have uncovered important factors like the academic program, Interfraternity/Sorority affiliation, athletic participation, that may impact mental health. The rising trends indicate significant increases in students with mental health issues who will receive treatment in the ED.

Trial Registration / Funding Information (only) :

N/A

#19387 : A Review of Management Neck of Femur Fracture Pathway in the Emergency Department**Authors:**

Maeve Leonard (1), Ahmed Al Rasheed (2)

1. SHO, Sligo University Hospital, Crosshaven, IRELAND
2. Registrar, Sligo University Hospital, Sligo, IRELAND

Keywords: Neck of Femur Fracture, Fascia Iliaca Compartment Block, Target Time,

Abstract :**Background**

Patients who present to the Emergency Department (ED) of Sligo University Hospital (SUH) with a suspected hip fracture are managed with the aid of the 'Neck of Femur Fracture (NOF) Pathway', which is a guide designed to facilitate speedy assessment and transfer of patients to the Orthopedic ward for definitive treatment, while delivering optimum care. SUH guidelines set a target of 4 hours from ED presentation to ward arrival time.

We investigated how efficiently patients with NOF are being managed and transferred from the ED to the Orthopedic ward, while aiming to identify specific points of potential time delay.

Methods

We performed an audit of patients who presented to the ED with NOF between December 2018 and February 2019. Specific parameters included time from arrival to receiving Fascia Iliaca Compartment Block (FB), documentation of agents used in FB and door to ward time. Further categories included documentation of mechanism of injury, pre hospital mobility status, and if an Abbreviated Mental Test (AMT) was performed in the ED.

Results

22 charts were available for analysis. These included 16 Female patients (73%) and 6 Males (6%). 95.5% of injuries occurred due a low energy mechanism. Of the 22 patients investigated, 19 had an FB performed in the ED. The average time from door to FB was 2 hours 16mins. Of the 19 patients who received an FB, 10 (52.6%) had documentation of agents used. All 10 of the documented cases used a combination of Bupivocaine and Lidocaine, with a variation in strength and quantities of these agents. All but one case had documented prehospital mobility status. An AMT was performed in 9 cases (41%). The average door to ward admission time was documented in 18 cases, with an average time of 4 hours and 43mins.

Conclusion/Discussion

The majority of patients are being treated in the ED with FB. There seems to be poor documentation of agents used in the procedure, with a large variation of preferences for particular agents among individual doctors. The time from door to FB of 2hrs 16mins may potentially be improved to facilitate a faster admission to ward time. The target door to ward time is being missed by an average of 43 minutes, which may not necessarily reflect ED delay, and is likely a multi-factorial issue (bed shortages etc). However, the possibility to improve ED management time is evident. Documentation of prehospital mobility is adequate. Our quality improvement plan includes the introduction of 'Regional Anesthesia Trolley', which will have all equipment required for a FB in one location, thus reducing preparation time. We have consulted national guidelines to create a standard approach guideline for agents used in FB. We presented our initial audit findings at ED teaching, with emphasis on these factors to help improve overall care of patients suffering NOF. Data is currently being collected to assess any new change in practice post these quality improvement measures being introduced.

Trial Registration / Funding Information (only) :

This study did not receive any specific funding

#19388 : PULMONARY EMBOLISM: Evaluation of adherence to guidelines of an Italian ED

Authors:

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), LUCREZIA PORTA (2), GIOVANNI RICEVUTI (1), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. STUDENT EMERGENCY DEPARTEMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: PULMONARY EMBOLISM, EMERGENCY DEPARTEMENT, TRIAGE

Abstract :

Introduction: The diagnosis of pulmonary embolism is now extremely insidious and difficult. This is mainly due to the extremely variable picture of the symptomatology and the very perception of the patient: in fact the patient first often does not recognize as important the symptoms presented. A large number of pulmonary embolism escapes medical diagnosis and is only found at autopsy. Also because of the symptomatological framework often requires a multiprofessional and multidisciplinary intervention and assistance.

Purpose: To analyse the adherence to European guidelines at an ED in real life everyday.

Results: 92 patients were enrolled with diagnosis of acute pulmonary embolism at our ED, affered in two consecutive years (2016-2017).

These had an average of 68 years, with equal distribution of the sexes. 57% went to our own AND independently with their own means.

9.7% showed signs of shock with BP < 90 mmHg and HR > 100. The remainder had lifecyclesthe parameters in the norm with a mean of BP = 137/82; HR = 88. The most compromised parameter has been shown to be oxygen saturation with an average of 94.5%, while 30% has values < 94%

The most frequently represented symptoms were: dyspnea (41%), followed by chest pain (30%); Signs of TVP (18%) and Syncope and Presyncope (12%).

According to the Wells score, 16% were low-risk, 56% at medium-risk and 21% at high risk. Considering the Geneva score, 30% were at low risk, 66% at medium risk and 4% at high risk. At 36% of these patients a priority code was given to white or green medical examination, 60% had a yellow code and only 2.5% a code red.

More than 95% needed hospitalization. In the best of cases the patient are hospitalized in internal medicine. 4% needed a return to 30 days and 13% returned to 60 days, or after hospitalization.

27% of patients presented a low mortality risk score (spent = 0); 61% of patients had an average mortality risk score (spent = 1-2); 12% of patients presented with a high risk of mortality (spent = 3-4).

With regard to the Times: they presented an average waiting time of 57 min; Process time of 7h and 41 min; and LOS of 8 H and 38 min.

Conclusions: The study shows that there has been a good adherence to the European Gida lines drafted in 2014. If they had not been subjected to the dosage of D-dimer all patients at low risk (considering the Geneva score are 30%) It would have been likely to have a high number of ISS diagnoses. There was not much adherence to thrombolysis because it only performed in 12% of patients with signs of shock.

#19389 : DETERMINATION OF PREDICTIVE FACTORS FOR RESPIRATORY SEVERITY and CREATING A NEW PEDIATRIC RESPIRATORY SCORE (PRES-T) AT TRIAGE IN CHILDREN**Authors:**

Pınar Kahyaoğlu (1), Ozlem Teksam (2)

1. , none, Ankara, TURKEY

2. -, -, Ankara, TURKEY

Keywords: Triage, respiratory distress, respiratory failure, Pediatric assessment triangle, Pediatric early warning score

Abstract :

Background: Admission to the pediatric emergency department due to complaints of respiratory system constitute one of the most common causes of emergency presentations. There is wide range of respiratory symptoms such as nasal discharge, tachypnea, shortness of breath, retraction, cyanosis and respiratory failure are caused to admission to the emergency department. Respiratory failure is the most common cause of cardiopulmonary arrest in children. Many respiratory diseases are mild and self-limiting, and some may be life-threatening and may require immediate diagnosis and treatment. Therefore, it is important that physicians working in the emergency department should know these diseases and treat them appropriately. Generally, patients presented with respiratory complaints evaluate by using different triage scales at triage area for determination of respiratory severity and hospitalization possibility. Additionally, some respiratory scores based on disease specific were also used to detect severity during clinical follow up period in previous studies. However, there is no any scoring system to predict hospitalization of patients during the triage process until now.

Objective: The first aim of our study was to determine predictors of hospitalization in children presenting with respiratory complaints and to create a new respiratory scoring system (PRES-T) which evaluating respiratory severity in triage area. The secondary aim was to evaluate Pediatric Assessment Triangle (PAT) and Pediatric Early Warning Score (PEWS) for determination of hospitalization during the triage process.

Results: 13% of the patients admitted to the emergency department with respiratory complaints were hospitalized. Patients with abnormalities in PAT evaluation had higher hospitalization rate comparison to patients with normal PAT evaluation. Abnormal findings in more than one PAT component were even more strongly associated with admission. To predict the need for admission in the triage, the optimal cutoff point on the ROC are PEWS 4 with %80 sensitivity, %86,5 specificity. Altered level of consciousness, retractions, oxygen saturation less than 95% and increased respiratory rate were found as predictors of hospitalization. These predictors were used for PRES-T.

Conclusion: These findings and new score should be better evaluated in a prospective manner and should be done validation in all patients presenting with any symptoms.

#19391 : the contribution of lung ultrasonography for the diagnosis of acute heart failure in emergency**Authors:**

Asma Khalfallah (1), Amel marsit (2), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Nouira (3)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA
2. Fattouma Bourguiba monastir , TUNISIA, ksouressef, TUNISIA
3. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: heart failure, ultrasound, emergency

Abstract :

Background: Lung ultrasound (LUS) has recently emerged as a bedside imaging tool for the differential diagnosis of acute dyspnea *in* the Emergency Department (ED). However, despite its simplicity, it is still a procedure confined to experts.

Aim of the study: To assess the accuracy and reproducibility of LUS performed by emergency medicine (EM) residents for the diagnosis of congestive heart failure (CHF) in patients admitted to ED for acute dyspnea.

Patients and methods: This is a cross sectional prospective study conducted between January 2016 and October 2018 including all patients aged over 18 years admitted to ED for acute dyspnea. At admission, two consecutive bedside LUS were performed by a pair of EM residents who received a 2-hours course in LUS examination to determine independently ultrasound lung comets (ULC) score and B-profile pattern. All participating sonographers were blinded to patients' clinical data. An ULC score ≥ 15 or a B-profile pattern were considered as suggestive of CHF. The final leading diagnosis was assessed by two expert sonographers based on clinical findings, chest X-ray, brain natriuretic peptide, and cardiac ultrasound. Accuracy and agreement of ULC score and B-profile pattern were calculated.

Results: We included 700 patients with a mean age of 68 ± 12.6 years and a sex ratio (M/F) of 1.43. The diagnosis of CHF was recorded in 371 patients (53%). The diagnostic performance of ULC score at a cut-off 15 and B-profile pattern was respectively 88% and 82.5% for sensitivity, 75% and 84% for specificity, 80% and 85% for positive predictive value, 84% and 81% for negative predictive value. The area under receiver operating characteristic curve was 0.86[0.83-0.89] and 0.83[0.80-0.86] respectively for ULC score and B-profile pattern. There was an excellent agreement between residents for the diagnosis of CHF using both scores ($\kappa=0.81$ and 0.85 respectively for ordinal scale ULC score and B-profile pattern).

Conclusion: LUS has a good accuracy and an excellent reproducibility in the diagnosis of CHF in the hand of EM residents following a short training program.

#19392 : ED ADMISSIONS AND REVISITS WITHIN 72 HOURS, AT A TERTIARY CARE HOSPITAL IN SAUDI ARABIA.

Authors:

Imran Zakria (1), Imran Zakria (2)

1. NHS, Tameside General Hospital., Manchester, UK

2. King Faisal Specialist Hospital & Research Centre, Jeddah, King Faisal Specialist Hospital & Research Centre, Jeddah, jeddah 21499, SAUDI ARABIA

Keywords: ED; EmergencyDepartment

Abstract :

Unscheduled returns to ED are classed as “revisits” and these are generally associated with quality of emergency care. Revisit definition is variable, ranging from re-attendance within 24 hour up to 7 days after the initial visit, but 72 hours is a widely accepted parameter. Similarly the number of admissions also gives some idea of an emergency department working dynamics, although it is hugely dependent on the catchment population characteristics as well as level of care provided at the facility.

Background:

Revisit benchmarking at a tertiary care specialist hospital is required to understand the dynamics governing these attendances, and likely to be helpful for correct system designing and efficient use of resources as well as for future referencing.

Internationally ED 72 hour revisits figures ranges from around 2% to 7%. ED admissions typically range between 15-30% of work load.

Methods:

We retrospectively reviewed our electronic patient database, used to capture all aspects of every patient encounter, for one month duration at our institution, a regional tertiary care specialist centre mainly for oncology, transplant and complex metabolic diseases management as well as cardiac and pulmonary centre. All patients 14 years or more were included who revisited ED within 72 hours of initial visit.

There were total of 3754 patient visits recorded during 1st to 30th November 2018. 1593 patients had more than one visit during this month. 387 of these were revisits within 72 hours qualified for this study, 250 of these were more than 14 years of age. A short cut review of database was carried out for first 100 of these cases for demographics, presentations, acuity and disposition for the purpose of this piece.

Results:

60% of the revisits were by females and half of the cases were younger than 50 years. Majority (65%) of index attendances were during 07:00 and 19:00.

Predominantly patients were triaged as category 3 (36%) and 4 (57%) at initial visit as well as revisits (38% and 45% respectively), few patients had their acuity changed at revisits.

12% cases had specialty involvement prior to discharge at first visit. 23% of revisited cases were subsequently readmitted (mainly under internal medicine) while rest were discharged.

There were variety of conditions registered as presenting complaints, with fever (21%) and headache (11%) being the commonest conditions.

Discussion and Conclusion:

“Emergency care” provided at our department is bit more advanced and complex as compared to typical EDs and we manage most of presentations ourselves and complete the patient encounters from ED, hence speciality involvement is low with admissions rate even lower (10-12%). Overall 9% patients revisited our unit, comparable to reference standards and admissions from these re-attendances were comparatively low, in view of the complex multi organ system illnesses our patients tend to have.

Many of these complex re-attendances were multifactorial with strong association with our hospital, offering unique and specialized services, but primary care availability is an important factor, closely related with many of ED attendances.

Further work is required to dissect out the addressable factors for revisits.

#19394 : Title: Asthma Attack in the Emergency Department: Reasons Of This Attendance (AERO)

Authors:

Prabakar Vaittinada Ayar (1), Camille TAILLE (2), Olivier CHASSANY (3), Olivier PEYRONY (4), Enrique CASALINO (5, 6)

1. U Inserm 942, Hôpital Beaujon Paris 7, Clichy, FRANCE
2. service de pneumologie, APHP Hôpital Bichat, université de Paris, Paris, FRANCE
3. EA 7334 REMES, Patient-Centered Outcomes Research, Université de Paris, Paris, FRANCE
4. service d'accueil des urgences, APHP Hôpital Saint Louis, Paris, FRANCE
5. service d'accueil des urgences, APHP, Hôpital Bichat, Université de Paris, Paris, FRANCE
6. Service d'accueil des urgences / SMUR, APHP, Hôpital Beaujon, Université de Paris, Clichy, FRANCE

Keywords: Asthma emergency department

Abstract :

Introduction:

Asthma affects 339 million people around the world, with around 1000 deaths per day. In France it reaches more than 4 million people. In last two decades mortality was halved from 2000 deaths per year to less than 1000 in France. However daily emergency department (ED) visits remains stable. Emergency department attendance is a sign of poor balance of asthma and a risk factor for asthma death. The aim of our study is to identify modifiable factors that may affect asthma control and the use of ED to define customized interventions for the management of asthma prior to ED.

Methods: (A) We conducted a qualitative study based on semi-structured interviews based on the Global Initiative for Asthma (GINA) criterion until data saturation between March and June 2017. Interviews were fully and anonymously transcribed verbatim and analyzed using the NVivo 10 software. The concepts identified through the open coding were classified according to axial coding; the resulting categories were gathered into three main themes. Each concept was transcribed into question; these different questions were submitted to the Delphi method to select the most important ones and built a questionnaire. (B) Then we continue with an observational multicentric (N=3) qualitative study between January 2018 and March 2019. The self-reported questionnaire was submitted to patients who were consulting for an asthma attack who completed it before leaving the ED. We included French spoken adults patients with a diagnosis of asthma for more than six months and with at least asthma medications during 3 months. The primary outcome was the poor observance and knowledge of GINA criterion explored with the self-reported questionnaire and the secondary outcome was asthma psychological distress explored by the General Health questionnaire 12 (GHQ-12). Continuous variables are expressed as means \pm standard deviations (SD) when normally distributed, and as medians (interquartile ranges [IQRs]) when not. Categorical variables are expressed as numbers (percentages). We compared means and medians using Student's *t*-test and the Wilcoxon test, respectively, and percentages using the Chi² test or Fisher's exact test, when appropriate.

Result: (A) We interviewed eight patients, two men (25%) and six women (75%) the mean age was 46 years. We have chosen twenty questions at the end of Delphi process. (B) We enrolled 179 patients with 68 men (38%). Mean age was 43(SD 16) years old. The median of asthma evolution was 19 years [IQR 10, 26]. Women showed more signs of depression with a GHQ-12 higher than 3 (55% vs. 38%; *p*=0,039) and as a trigger anxiety (51% vs. 21%; *p*<0,0001). Patients who have consulted at least twice in the past year consider asthma as a disability (46% vs. 66%; *p*< 0,0009). Patients diagnosed after age 30 have better compliance with treatment (34% vs.58%; *p*=0,003).

Conclusion: To decreased asthma attenders in emergency department psychological support are needed in particularly with women.

Trial Registration / Funding Information (only) :

Trial Registration: ClinicalTrials.gov Identifier: NCT03099915 **Funding:** "This study did not receive any specific funding." **Ethical approval and informed consent:** Because the study was observational, a randomly designed review board (Comité de Protection des Personnes Sud Méditerranée 1, Marseille, France) approved the study in France.

#19395 : Trauma geriatric score, a prognostic score for geriatric traumatology patients in the Emergency Department: preliminary results**Authors:**

rania jebri (1), Marie Carlier (2)

1. emergency department , Hôpital Edouard Herriot Lyon, Lyon, FRANCE

2. emergency department , hôpital Erasme , Bruxelles, BELGIUM

Keywords: trauma, elderly patients, Emergency, trauma score

Abstract :**Introduction:**

Coping with an increasingly aged population is a challenge for healthcare providers all over the world. The incidence of falls that lead to admission to emergency units is increasing.

Identification of elderly trauma patients who are likely to have poor outcome may help the emergency physicians to provide better management. Several studies have identified prognostic factors that allow early identification of patients with poor outcome. However, there is no score to specifically predict the mortality of traumatized geriatric patients.

The objective: to evaluate the current management of geriatric traumatology patients in Erasme emergencies. The main objective is to build a prognostic model in elderly traumatic patients

Design and Methods:

A retrospective study was conducted in Erasme Hospital between January 1, 2016 and December 31, 2016. It was based on file analysis of 768 trauma elderly patients. All patients older than 65 years admitted to the emergency department (ED) after a fall were included. Critical patients were excluded. The epidemiological, clinical, biological, therapeutic, and evolution criteria were collected. Poor outcome was defined by mortality at day 28. The model was build using a multivariate logistic regression that uses the backward elimination method to obtain the probability of a death at 28 days

Results:

768 patients were enrolled. Mean age 78 years [71-85]. Sex Ratio: 2.07. Comorbidities: Hypertension N = 426 (23%), dyslipidemia N= 257 (14%), diabetes N = 150 (9%), Osteoporosis N= 136 (8%), prosthetic orthopedic equipment N = 124 (7%), history of fall N = 139 (8%). Dementia N=138 (7%), Depression N=138 (7%). 67% of cases falls are less than 2 meters. 76.87% of the population have at least three medications to take The over-all mortality is 2.2%. eleven patients were dead at day 28.

A univariate logistic regression was performed to select the best predictors of mortality at 28 days, which were reduced to three in multivariable logistic regression: the CRP with an Odds ratio (OR) at 1,01 and confidence interval (CI) 95% [1.00 – 1,01] p=0,05. The Index Severity Score (ISS) face with an Odds ratio (OR) at 2,24 and confidence interval (CI) 95% [1.12 – 4,47] p=0,02 and the hospitalization with an Odds ratio (OR) at 1,71 and confidence interval (CI) 95% [1.07 – 2,72] p=0,02.

the logistic probability for each patient was estimated between 0 and 58%. the results of the model appear in fine consistent with the observations made: 11 deaths were predicted in the and 11 deaths occurred. In addition, the model has a good performance: deviance with $p = 1$ and the Standardized Mortality Ratio (SMR)= 100% (95% CI: 98% to 103%).

Conclusion:

This model based on only three variables appear promising with 100% predictability. It is easy to use and can have a significant impact on the prediction of mortality in a geriatric population. The validity of this score will be carried out in future prospective studies.

#19396 : Red Blood cells' Transfusion of elderly patients in Emergency Department: are we faithful to the guidelines?**Authors:**

Jihane FATTOUM (1), Rania Jebri (2), Karim Tazarourte (1)

1. Emergency , Hôpital Edouard HERRIOT , Lyon, FRANCE

2. Emergency, Hôpital Edouard HERRIOT , Lyon, FRANCE

Keywords: Red cell blood transfusion- elderly- emergency- guidelines

Abstract :

Introduction :

The prescription of Transfusion of Red blood cells(RBC) in elderly patients has long been discussed for medical , societal and ethical reasons. The habits of emergency physicians (EP) regarding RBC transfusion differs from one practitioner to another. This can be explained by the absence of a clear consensus, the frailty of the elderly patients and their several comorbidities. The High Authority of Health has published new guidelines regarding this issue on November 2014.

The objective :

The purpose of our work was to evaluate the prescription habits of RBC's transfusion in the elderly patients before and after the new guidelines.

Design and method :

We conducted a descriptive and observational study in medical and surgical emergencies over a period of 2 years. We studied the epidemiological data of all patients over 80 years of age who received RBC's transfusion during their stay in the ER.

A transfusion was declared justified in two cases : when the hemoglobin threshold <7 g / dl, or between 7 and 10 g / dl in patients with cardiac history, heart failure or signs of poor tolerance of anemia.

Results :

224 patients were included. The median age was 89 ± 6 with a minimum of 82 years and a maximum of 104 years. The sex ratio F / H was 1.01. The median hemoglobin level was 7.2 g / dl ± 1.8 . 76% of transfused patients had heart failure or and 36% had shown signs of poor tolerance to anemia. The number of RBC administered before the guidelines was significantly higher with a $p = 0.0036$ (2.079 versus 1.854). The prescription of RBC was justified and in accordance with the guidelines in 198 patients (88.39%).

Conclusion : Despite the fact that age was taken into account in the recent guidelines of RBC's transfusion, this descriptive study shows that the practitioner needs additional criteria, especially adapted to geriatric semiology, to a better management of the elderly patients in the ER.

#19397 : PREDICTING 30-DAY MORTALITY OF PNEUMONIA ON EMERGENCY DEPARTMENT SETTING BY MACHINE-LEARNING MODEL**Authors:**

Soo Yeon Kang (1), Junsang Yoo (2), Won Chul Cha (1), Taerim Kim (1), Joo Hyun Park (1), Hee Yoon (1), Sung Yeon Hwang (1), Min Seob Sim (1), Ik Joon Jo (1)

1. , Samsung Medical Center, Seoul, KOREA
2. , Sungkyunkwan university, Seoul, KOREA

Keywords: MACHINE-LEARNING, PNEUMONIA, MORTALITY, EMERGENCY DEPARTMENT

Abstract :**Background**

Pneumonia is still the leading cause of death among infectious diseases worldwide. There has been importance on disposition based on several severity scores. Though many severity scores have been used already, novel machine-learning based models are needed for more accurate predictive power. The aim of this study is to prove effectiveness of machine-learning based model to predict 30-day mortality of pneumonia on Emergency Department setting.

Methods

This study was a retrospective analysis of adult medical patients with pneumonia registry on EMR arriving at Samsung Medical Center's Emergency department(ED), a 63-bed unit, a tertiary referral center in Seoul, Korea from January 1, 2016 to December 31 2017. Patients aged 18 years or order those who have pneumonia registry on EMR was enrolled in the study. We collected data including demographic information, mental status, and laboratory finding. The primary outcome was the 30-day mortality and ICU admission from ED. Clinical factors were analyzed using logistic regression analysis. The ROC curve was fit to the sensitivity and specificity of machine-learning based model for mortality. Machine learning model was developed based on Random Forest(RF) algorithm from a training set, and its performance was evaluated by area under receiver operating characteristic curve (AUROC) from the test set.

Results

Of 1,974 pneumonia patients, 1,732 patients were eligible for study inclusion and 1,723 patients were analyzed finally. Of 1,723 patients, 564 were died within 30-day or ICU admission from ED initially. The AUC of CURB-65 was 0.593, and the AUC of novel machine-learning based model by RF was 0.84. The machine-learning model had 91.4% sensitivity, 47.9% specificity, 78.1% positive predictive value and 73.4% negative predictive value.

Discussion & Conclusions

Classification by machine-learning based model can help to predict the mortality of pneumonia patients on ED more accurate than pre-existing CURB-65. It also has fewer variables than the model PSI, another predictive tool which has 30 variables, and it is expected to be more suitable for ED setting.

#19398 : Procedural sedation and analgesia in a Belgian Emergency Department: an observational cohort study.

Authors:

Laurens De Grim (1), Hannelore Raemen (1), Koen Monsieurs (1)

1. emergency department, Antwerp University Hospital, Antwerp, BELGIUM

Keywords: emergency department, procedural sedation, SIVA, Belgian

Abstract :

Aim:

To describe the indications, used medication and safety of procedural sedation in a Belgian University Hospital Emergency Department.

Methodes:

We performed a prospective observational cohort study of all patients who underwent procedural sedation and analgesia in a Belgian Emergency Department between April 2017 and April 2018. Standardised forms were used to collect data on patient demographics, indication, performed procedures, used medication and the occurrence of adverse events classified by the SIVA adverse event reporting tool.

Results:

171 patients were included in the study. Median age was 53 years, 56% were male. 40% of patients were ASA class 1, 37% were ASA class 2 and 22% were class 3 or higher. The majority of the patients underwent procedural sedation for cardioversion (34%), reduction of fractures (30%) or dislocations (26%). Propofol and ketamine were the most frequently used medications. Adverse events occurred in 12% of cases, mostly due to apnoea (33%), hypoxia (19%) and emesis (19%). All of the adverse events were transient. None of the patients suffered an adverse outcome.

Logistic regression analysis revealed ASA class 3 or higher as independent risk factor for adverse events.

Conclusion:

This Belgian cohort study supports the results of international studies showing that procedural sedation in the emergency department is safe, with a 12% adverse event rate and without occurrence of adverse outcomes.

Trial Registration / Funding Information (only) :

no funding

#19399 : Stroke in the emergency department of ben arous regional hospital : Epidemiology, clinical features and prognosis

Authors:

amira Bakir (1), dhekra Hosni (1), marwa mabrouk (2), syrine keskes (1), hela ben turkia (2), monia ngach (1), amel ben garfa (2), Sami Souissi (1), Hanan Ghazali (1)

1. emergency department, regional hospital of ben arous, ben arous, TUNISIA
2. urgence-SMUR hôpital régional Ben arous, hôpital régional ben arous, ben arous, TUNISIA

Keywords: stroke, epidemiology, emergency department

Abstract :

Background: Stroke is one of the leading causes of morbidity and mortality worldwide. Its incidence and prevalence are increasing and it represents a growing clinical and economic burden. The aim of our study was to describe the epidemiology, clinical features, management and prognosis of patients with stroke presenting to emergency department (ED).

Methods: Prospective, observational over five years study. Inclusion criteria: patients (>18 years of age) presenting to ED with the diagnosis of acute stroke. Collection of epidemiological, clinical and therapeutic features. Stroke severity was evaluated with the National Institutes of Health Stroke Scale (NIHSS). Prognosis (recurrence, severe disability defined as modified Rankin Scale (mRS) = 4 or 5 and death) was evaluated at 90 days.

Results: Inclusion of 246 patients. Mean age was 66 ± 13 years. Sex ratio = 1,38. Comorbidities n (%): hypertension 161(65,4) , diabetes 88 (35,8) , history of stroke 72 (29,3) , smoking 64 (26) , dyslipidemia 48 (19,5) , atrial fibrillation 33 (13,4) , heart failure 7 (2,8) , coronary insufficiency 29 (11,8) , valvulopathy 16 (6,5) and arteriopathy 6 (2,4).). Symptoms (%): FACE (54,9), ARMS (76,4), SPEECH (65). Average NIHSS score = 9 ± 7 . Average GCS = 13 ± 3 . Ischemic stroke:70,3%. Mortality rate:26,8%. A mRS = 4 or 5:16,7%. Age > 75 years (adjusted OR = 1,61 ,95% CI [1,14;2,28], $p = 0.007$), NIHSS > 15 (adjusted OR = 0,98, 95% CI [0,87;1,1], $p = 0,742$), mRS > 2 (adjusted OR = 1.80, 95% CI [1.03; 3,14], $p = 0.038$) GCS < 11 (adjusted OR = 2,01, 95% CI [1.43; 2.84], $p = 0.000$) and hemorrhagic stroke (adjusted OR = 1,80, 95% CI [1,25;2,6], $p = 0.002$) were independently associated with mortality.

Age > 70 years (adjusted OR = 0.401, 95% CI [0.11; 0.37], $p = 0.14$), NIHSS > 10 (adjusted OR = 0.90; 95% CI [0.27; 2.98], $p = 0.864$), mRS > 2 (adjusted OR = 2.34, 95% CI [0.59; 9.29], $p = 0.226$), GCS < 11 (adjusted OR = 3.04, 95% CI [0.81; 11.34], $p = 0.098$), hemorrhagic stroke (adjusted OR = 1.68, 95% CI [0.56; 5.01], $p = 0.350$), seizures (adjusted OR = 0, 95% CI [0, 0], $p = 0.999$) and systolic blood pressure > 180 mmHg (adjusted OR = 2.63, 95% CI [0.78; 8.88], $p = 0.119$) were independently associated with a severe disability.

Conclusion: Establishment of ideal emergency system and arrangement of stroke units are also awaited for better management and improvement of patients' outcome.

#19400 : the provision of pulmonary ultrasound for the diagnosis of heart failure for patients with dyspnea emergencies**Authors:**

Asma Khalfallah (1), sarra Sassi (1), Adel Sekma (1), Mohamed amine Msolli (1), Kaouther Beltaif (1), Hamdi Boubaker (1), Semir Nouira (2)

1. Fattouma Bourguiba monastir , TUNISIA, Mounastir, TUNISIA
2. Fattouma Bourguiba monastir , TUNISIA, m, TUNISIA

Keywords: ultrasound, heart failure, emergency

Abstract :

Introduction:

Dyspnea is a common reason for consultation. the usefulness of pulmonary ultrasound in the diagnosis of acute heart failure (AHF) is established in emergency. The purpose of this study: is to study the contribution of pulmonary ultrasonography in the diagnosis of AHF for the preserved LVEF phenotype (> 45%).

Material and methods:

Observational prospective study including all patients over the age of 18 admitted to the emergency department for heart failure between the period of January 2016 and September 2018. At admission, we performed a pulmonary ultrasound to all patients. The lung congestion score (PCS) was calculated. A score above 15 is in favor of the AHF. The diagnosis of heart failure was selected based on the clinic, chest X-ray, BNP and echocardiography. In patients who have a preserved LVEF, the diagnostic value of PCS was assessed by specificity, sensitivity, and area under the curve (AUC) .

Results:

We included 408 patients, mean age 66 ± 13 years, sex ratio (m / f) 1.42. The diagnosis of AHF is retained in 47 patients (11.5%).

we showed PCS efficacy in the diagnosis of AHF in preserved LVEF patients with area under the curve is 0.72 with a sensitivity of 79%.

CONCLUSION:

Pulmonary ultrasonography is a good diagnostic tool for AHF in preserved LVEF patients

#19402 : Title: New guidelines in sepsis animal modeling: about antimicrobial therapy end points in cecal ligation puncture in rats.

Authors:

Prabakar Vaittinada Ayar (1), Hervé Jacquier (2), Benjamin Deniau (3), Alexandre Mebazaa (3), Alice Blet (4)

1. U Inserm 942, Hôpital Beaujon Paris 7, Clichy, FRANCE
2. Laboratory of Microbiology, Department of Infectious Agents, Lariboisière Saint Louis Fernand Widal Hospital, Paris, FRANCE
3. U Inserm 942, Paris Diderot, Paris, FRANCE
4. Anesthesiology and Intensive Care department, Lariboisière Saint Louis Fernand Widal Hospital, Paris, FRANCE

Keywords: Sepsis, experimental, bacteriology

Abstract :

Introduction: Sepsis is the most preventable cause of death worldwide, which is estimated between six to nine million deaths every year. Experimental studies are useful for a better understanding of this pathology, but require to follow new guidelines of animal modeling to fit with a clinical relevance. We aimed to explore (A) what is realized in articles published in 2018 using a cecal ligation puncture (CLP) model in rat, (B) if the instructions about antimicrobial therapy fit with microbiology in a peritonitis model based on CLP.

Method: (A) The review was performed on Pubmed using as keywords "CLP" and "RAT" for the year 2018, and selected English-written papers. We checked if animals received antibiotics and if bacteriological documentation was available before treatment. (B) We explored bacteria involved in the sepsis, using peritoneal fluid and blood cultures, at least 16 hours between CLP and sacrifice.

Result: (A) Ninety-five studies were found. Among them 9 were excluded as they had a different meaning for CLP. Only in 11 cases (12%) antibiotics were used and mainly ceftriaxone at the dosage of 30mg/kg. None of the studies identified the pathogen before treatment. (B) In our series of fifteen rats, we found mainly *Escherichia coli*, *Enterococcus faecalis*, *Lactobacillus murinus* in peritoneal fluid and *Escherichia coli*, *Enterobacter cloacae*, *Enterococcus faecalis* in blood. All the bacteria exhibit a wild type phenotype for antimicrobial agent susceptibility.

Conclusion: These new recommendations provide a better match between experimental and clinical approaches, and improve translation of pre-clinical findings. Our findings suggest a better adequacy of antimicrobial treatment to pathogens and to the animal. More specific investigations are required to explore the bacterial diversity in peritoneal fluid and blood culture.

Trial Registration / Funding Information (only) :

Funding: "This study did not receive any specific funding." **Ethical approval:** All animal procedures have been approved by the Animal Research Ethics Committee of «Lariboisière-Villemin », Paris, France (Saisine S140).

#19403 : THE PREVALENCE OF TRAUMA INDUCED COAGULOPATHY IN A LARGE COHORT OF PATIENTS AFFECTED AT AN ITALIAN TRAUMA CENTER.**Authors:**

GABRIELE SAVIOLI (1), IRIDE FRANCESCA CERESA (1), SEBASTIANO GEROSA (2), SARA MACEDONIO (2), MIRKO BELLATO (3), GIORGIO IOTTI (3), PAOLO DIONIGI (4), MARIA ANTONIETTA BRESSAN (1)

1. emergency department, IRCCS POLICLINICO SAN MATTEO, pavia, ITALY
2. STUDENT EMERGENCY DEPARTMENT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
3. INTENSIVE CARE UNIT, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY
4. SURGERY, IRCCS POLICLINICO SAN MATTEO, PAVIA, ITALY

Keywords: TRAUMA INDUCED COAGULOPATHY, major trauma, emergency department

Abstract :

Introduction: Major Trauma (MT), first cause of death and permanent disability in the population under the age of 40, is a time-dependent pathology. Most preventable deaths in case of major trauma due to bleeding. Often bleeding is related to the presence of trauma induced coagulopathy. This was once thought to be born hours or days after the trauma, now it is understood that begins at the same time of the trauma.

Purpose and Materials and methods:: To evaluate the presence of trauma induced coagulopathy in a wide cohort of patients affected to our AND for major trauma (want for anatomical, physiological or dynamic criteria) in the period between January 2018 and March 2019

Results: 421 patients were included so The average ISS identified is 15.4. Over 40% patients at the end of the course had an estimated ISS > to 17. In almost all patients it was possible to detect trauma at the expense of several body districts and the most frequent traumas were observed at the cranial level (28%), thoracic (25%) and spine (17%). More than 90% of patients were subjected to TC total body. Over 80% to eco and fast upon arrival in ED. All patients were subjected to hematochemical. Our Institute has provided a specific panel for the blood analysis of patients with major trauma. Analysis of INR, PT, PTT, FIBRINOGEN, PLT, Hb, D-dimer allowed to estimate a prevalence of 25% coagulopathy induced trauma. 20% of patients needed blood transfusion support. The Massive blood transfusion protocol was activated in all cases where there was a clinical suspicion or positivity of the Sanguinamneto score (ABC SCORE, Shock index). However only a minority had need of massive blood transfusion. All patients at risk of bleeding have performed fibrinogen and tranexamic acid in the cases provided by the GIDA lines. Adherence to the guidelines was optimal

Conclusion: Also in our AND there is a high prevalence, in accordance with the data of literature, of trauma coagulopathy in the population affected by major trauma. This should always be kept in mind and there must be protocols for activating the massive blood transfusion protocol and goal directed therapy in trauma induced coagulopathy

#19411 : Procedural sedation and analgesia in a Belgian Emergency Department: an observational cohort study.

Authors:

Laurens De Grim (1), Hannelore Raemen (1), Koen Monsieurs (1)

1. emergency department, Antwerp University Hospital, Antwerp, BELGIUM

Keywords: emergency department, procedural sedation, SIVA, Belgian

Abstract :

Aim:

To describe the indications, used medication and safety of procedural sedation in a Belgian University Hospital Emergency Department.

Methodes:

We performed a prospective observational cohort study of all patients who underwent procedural sedation and analgesia in a Belgian Emergency Department between April 2017 and April 2018. Standardised forms were used to collect data on patient demographics, indication, performed procedures, used medication and the occurrence of adverse events classified by the SIVA adverse event reporting tool.

Results:

171 patients were included in the study. Median age was 53 years, 56% were male. 40% of patients were ASA class 1, 37% were ASA class 2 and 22% were class 3 or higher. The majority of the patients underwent procedural sedation for cardioversion (34%), reduction of fractures (30%) or dislocations (26%). Propofol and ketamine were the most frequently used medications. Adverse events occurred in 12% of cases, mostly due to apnoea (33%), hypoxia (19%) and emesis (19%). All of the adverse events were transient. None of the patients suffered an adverse outcome.

Logistic regression analysis revealed ASA class 3 or higher as independent risk factor for adverse events ($p=0.023$).

Conclusion:

This Belgian cohort study supports the results of international studies showing that procedural sedation in the emergency department is safe, with a 12% adverse event rate and without occurrence of adverse outcomes. In line with previous studies, ASA class 3 or higher was found to be an independent risk factor for adverse events.

Trial Registration / Funding Information (only) :

no funding

#19414 : Paediatric procedural sedation using ketamine- can it exist within the 4 hour target

Authors:

charles stewart (1), Poonam Patel (2)

1. Paediatric Emergency Medicine, chelsea and westminster NHS foundation trust, london, UK
2. paediatric emergency department, chelsea and westminster NHS foundation trust, london, UK

Keywords: procedural sedation, ketamine, service review

Abstract :

Aims

As Paediatric Emergency Departments (PED) become busier the number of children requiring painful procedures continues to increase. We aimed to evaluate a locally developed paediatric procedural sedations (PPS) service using ketamine for safety, efficiency and efficacy in the context of the UK's 4 hour operational target which is due to be revised this year

Methods

We enrolled consecutive patients over 12 months suitable for PPS ketamine and collected data for demographics, time to patient identification, time to ketamine administration, procedural duration and time to recovery. We also documented procedure outcome and adverse events. We documented completion of consent, ketamine dosage and baseline physiological observations

Results

From May 2017 to May 2018 ketamine PPS was performed on 36 patients with a mean age of 7 years (range 1.8 to 14.6 years). The most common procedure performed was manipulation of forearm fractures (n=21, 58%), followed by facial laceration repair (n=10, 28%). Total intravenous Ketamine dosages were; 1mg/kg (n=23, 64%) 1.5mg/kg (n=10, 28%) and 2mg/kg (n=3, 8%).

Average time to referral to surgical speciality was 33 minutes which improved from 40 minutes (pre Sept) to 27 minutes (post Sept). Average time to ketamine administration was 168 minutes, improved from 185 minutes (pre Sept) to 155 minutes (post Sept). The average time taken to complete procedures, all under 20 minutes, also decreased from 19 minutes (pre Sept) to 10 minutes (post Sept) averaging 15 minutes overall. The recovery time was similar throughout the study period. The overall average length of stay (LOS) was 284 minutes, improved from 297 minutes (pre Sept) to 274 minutes (post Sept) figure 3.

20 (55%) of the 36 patients breached the 4 hour target. 10 (28%) patients were admitted, 9 for further neurovascular observations and only 1 where the outcome of a procedure was unsatisfactory.

There were no seminal untoward incidents in our study. Vomiting occurred in 4, there was 1 drug error and one patient required brief airway manoeuvres for decreased oxygen saturations

Conclusion

We have confirmed PPS ketamine service to be safe and further demonstrated good outcomes in procedures carried out. Despite improved efficiency in the study period the average LOS still falls outside the 4 hour target and we would welcome a revision or extension of this to reduce anxiety related to breaching 4 hours which might also encourage more uptake of PPS ketamine in other units

#19418 : How much change in pain score does really matter to patients?

Authors:

Maryam Bahreini (1), Hadi Hadi Mirfazaelian (2), Arash Arash Safaie (2), Mohammad Jalili (2)

1. , Tehran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

2. Emergency Medicine, Tehran University of Medical Sciences, Tehran, IRAN, ISLAMIC REPUBLIC

Keywords: Minimal Clinically Important Difference, Numeric Rating Scale, Pain Measurement, Visual Analog Scale

Abstract :

Background: Physicians should be thoughtful about satisfactory pain reduction that can be described as the minimal change in pain score which is recognizable as a meaningful change by patients. The goal of this study was to determine the minimal clinically important difference (MCID) in various groups verifying the accuracy and validity of the pain scores changes through an innovative statistical approach.

Methods: Pain was recorded upon admission, 30 and 60 minutes later and patients were asked to define the extent of pain change from “much better” to “much worse”. We applied receiver operating characteristic curve to assess the accuracy of pain scales and also applied polynomial regression to evaluate MCID. In addition, subgroup analysis was performed between various pain intensities, pain mechanisms, genders, age groups, and pain severities.

Results: One hundred and fifty patients were included, of which, the mean age was 32 years, 78.7 % were men, and 32% of patients had trauma-related injuries. The MCID \pm SD (95% CI) was 1.65 ± 1.58 (1.32-1.97) for NRS and 16.55 ± 17.53 (12.96 - 20.15) for VAS. The area under the curve by NRS and VAS were 0.86 and 0.89 for detecting MSCD. Pain changes did not significantly differ between “a little better” and “a little worse” groups.

Discussion and Conclusions: MCID was not affected by age, gender, pain mechanism, and baseline pain severity. Moreover, the extent of pain change was not different whether the pain was alleviated or aggravated.

#19421 : The August 24th, 2016 Central Italy Earthquake: validation of the “Modified Utstein Template for Hospital Disaster Response Reporting” as a new tool for reporting hospital's reaction to disasters.

Authors:

Matteo Paganini (1), Luca Ragazzoni (2), Fabio Rossitto (2), Aurora Vecchiato (3), Rita Bonfini (4), Maria Vittoria Mucciante (5), Alessandra Nisii (6), Francesco Della Corte (2), Pier Luigi Ingrassia (2)

1. Emergency Medicine Residency Program , University of Padova, Padova, ITALY
2. CRIMEDIM – Research Center in Emergency and Disaster Medicine, Università del Piemonte Orientale, Novara, ITALY
3. Emergency Medicine Residency Program , University of Sassari, Sassari, ITALY
4. Emergency Department, “S. Camillo de Lellis” Hospital, Rieti, ITALY
5. Health Administration, “S. Salvatore” Hospital, L'Aquila, ITALY
6. Health Administration, “C. e G. Mazzoni” Hospital, Ascoli Piceno, ITALY

Keywords: Disaster Medicine, preparedness, earthquake, hospital disaster preparedness, hospital disaster response.

Abstract :

Introduction: after action reports analyze events and improve knowledge about how to prevent and react to unexpected situations. Anyway, there is no consensus among the templates developed for disaster events reporting and there is not a specific model for reporting hospital disaster response.

Hypothesis: we intended to pilot the use of a new assessment tool for hospital response to natural disasters.

Methods: a data collection tool, focused on hospital disaster response to natural disasters, was created modifying the “Utstein-Style Template for Uniform Data Reporting of Acute Medical Response in Disasters” and tested the reaction of the nearest hospitals to the epicenter after the August 24th, 2016 Central Italy earthquake.

Results: 4 hospitals were included. The completion rate of the tool was of 97.10%. A total of 613 patients accessed the four emergency departments, most of them in Rieti hospital (178; 29.04%). Three hundred and thirty – six patients were classified as earthquake-related (54.81%), most of which with trauma injuries (260; 77.38%).

Discussion: this collection tool proved to be feasible and allowed to retrospectively reconstruct most (97.10%) of the steps of hospital disaster plan deployment and response. Details about activation, patients fluxes, times and actions undertaken were easily reconstructed throughout in-field interviews of hospitals' managers and consulting patients' charts. The influx of patients appeared to be quite uniformly distributed across the 4 facilities and, according to our data, hospitals' capabilities were sufficient to resist the surge.

Conclusions: the Modified Utstein Template for Hospital Disaster Response Reporting is a valid instrument for hospital disaster management reporting. This template could be used for a better comprehension of hospital disaster reaction, debriefing activities, and HDP revisions.

Trial Registration / Funding Information (only) :

Trial registration: n/a Funding Information: CRIMEDIM funding.