

## **EUSEM Non-Invasive ventilation Fellowship 2017**

### **Authors:**

#### **First author:**

- Dalip Kumar (National Health Service-ED Consultant, Southend University Hospital NHS Trust - Westcliff on Sea - UK)

#### **Co-author(s):**

- Dr Roberta Petrino [EUSEM President, Director Emergency Medicine Unit, S. Andrea Hospital (Italy)].
- Fiammetta Pagnozzi (Consultant EM, San Giovanni Bosco Hospital, Turino (Italy)).
- Dr Heather Wieman (Physician EM, Østfold Hospital Trust, South-Eastern Norwegian Regional Health Authority, Norway).
- Dr Pieter Jan Van Asbroeck (EUSEM Young Doctors Section, Consultant EM, Jessa hospital, Hasselt, Belgium).

In 2016 EUSEM (European Society of Emergency Medicine) invited EM (Emergency Medicine) trainees and young EM specialist from across Europe to apply as a candidate for the EUSEM young doctors, two week fellowship<sup>1</sup> in non-invasive ventilation in Italy, under the auspices of Dr Roberta Petrino, current President of EUSEM. The strict eligibility criteria for this fellowship were:

- The candidate to be an active EUSEM member.
- The candidate must be a trainee in EM Europe (or should have a proven strong interest, eg. for countries where no ED specialty exist) and they should be < 35 years old, or a young EM specialist but < 35 years old.
- Applicants cannot do this fellowship in a country where they live.
- Participants can't reapply again if they were successfully selected previously.

Candidates were selected on the basis of the following criteria:

- Have a strong motivation letter.
- Should have participated in research or had publications related to EM.
- Candidate is committed to teaching peers (proven by previous projects)
- Have successfully passed EBEEM( European Board Examination in Emergency Medicine)
- Have a recommendation letter from the current work place.
- Proof of good English (TOEFL, IELTS, etc.)
- Overall appraisal

Points were given for each item. The selection committee was composed of high-profile EUSEM committee members. Subsequently in the 2016 EUSEM Conference<sup>2</sup> at Vienna, two young physicians Dr Dalip Kumar, from the United Kingdom and Dr Heather Wieman from Norway were selected for this fellowship. The fellowship was sponsored by the EUSEM in an effort to gain competence in the field of the non-invasive Ventilation (NIV) in the emergency care setting. The fellowship was the first of its kind for EUSEM to organize.

The participating hospitals were Italy's four busy district level hospitals: S. Andrea Hospital (Vercelli), Maggiore della Carità University Hospital (Novara), San Giovanni Bosco Hospital

(Turin) and S.S Pietro e Paolo Hospital (Borgosesia). The settings in this hospital for the fellowship were the Emergency Department (ED) and Intensive care unit (ICU).

The eminent faculty members included Dr Roberta Petrino (Director and Clinical Lead EM Consultant at S. Andrea Hospital), Dr Fiammetta Pagnozzi (Consultant ED at San Giovanni Bosco Hospital), Dr Roberta Marino (Consultant ED Physician at S.S Pietro e Paolo Hospital), Prof. Francesco Della Corte (Consultant Intensivist at Azienda University Hospital).

The candidates were given a detailed structured programme prior to their arrival in Italy. Travel and accommodation was sponsored by the EUSEM. On the evening before the start of this fellowship, we were invited for dinner and drinks by Dr Roberta Petrino in one of the best restaurants in Novara so that we would return the next day well fed and watered.

#### Day 1

We were greeted by Dr Roberta Petrino and Dr Roberta Marino at the ED of S. Andrea Hospital where we were given a tour of the department. The programme started as a day of theoretical learning with presentations on blood gas analysis, non-invasive ventilation (NIV) and interesting clinical cases. There were lectures on different types of ventilation equipment etc. We were made comfortable in the new hospital setting and were introduced to other departments including the hospital's chief operating officer.

#### Day 2 and Day 3

We attended the ED and the ICU at S. Andrea Hospital and followed different patients with NIV. We observed patients treatment, analysed their blood gas results and got more exposure for the use of NIV and performed setting adjustments. We gained experience in the use of NIV modalities like Continue Positive Airway Pressure (CPAP), Bilevel Positive Airway Pressure (BIPAP) and Pressure Support Ventilation (PSV) etc.

On day 3, in the afternoon we went to the S.S Pietro e Paolo Hospital (Borgosesia) accompanied by Dr Roberta Marino. This was an interesting 45 minute car ride through the beautiful Italian countryside roads and mountains. We attended the ED and were given a tour of the hospital. We were introduced to the various team members. We observed how

patients were seen, examined and treated in this small district level hospital. We also had teaching on the NIV machine to adjust various settings and interfaces etc.

#### Day 4 and 5

We attended the ICU at the Maggiore della Carità University Hospital (Novara) under supervision of Dr Carlo Olivieri (Consultant Intensivist). We were able to follow patients from the ED to the ICU and then to their discharge. We saw the use of the high flow O<sub>2</sub> (Optiflow Nasal cannula) in the patient care. We had deep experience on NIV on the trauma patients and other advanced scenarios. We also saw the use of the helmet for giving NIV. Both high flow O<sub>2</sub> (optiflow nasal cannula) and the NIV Helmet, are not used in our usual hospital where we work, therefore this was a good learning curve for us. There was a different mix of patient scenarios which included Chronic Obstructive Pulmonary disease (COPD) patients, acute heart failure patients, pneumonia patients, trauma patients and patients with severe sepsis. We were also shown a demo on the use of the Hemo-lung in the intensive care setting for the type 2 respiratory failure patients.

#### Day 6 and 7

These were our off days over the weekend. We moved from Novara to Turino during this period. This gave us an opportunity to do some local travelling and exploring Italian cuisine and more. I went to the local museums that included “Museo Nazionale Del Cinema” and “Museo Egizio”. Although the week had left us a bit exhausted, I was satisfied that I learned a lot of new information that I would not have been able to do in U.K. as NIV is not used so extensively in the ED.

#### Day 8 to Day 12

We were greeted on day 8 by Dr Fiammetta Pagnozzi (Consultant intensivist) at the San Giovanni Bosco Hospital and other resident physicians. We worked in the Intensive care department. We had further extensive experience in the use of the NIV. We also attended the weekly teaching for the resident physicians. And while this was primarily a NIV fellowship, we also gained experience in ultrasound, particularly assessing the volume status of the patients via the IVC ultrasound, lung ultrasound to look for pneumothorax, pleural effusion as well as E-FAST to look for free fluid and the dimensions of the abdominal aorta. We were

also given bedside ultrasound teaching on the use of the ultrasound machine to insert chest drain and central lines.

On the evening of day 10, we were taken for a nice dinner out by Dr Roberta Petrino and Dr Fiammetta Pagnozzi at one of the best restaurants in Turin. We discussed our progress in this fellowship and our future plans etc. This gave us more opportunity to socialise and learn more about the Italian culture.

Conclusion:

This fellowship gave us an opportunity to travel to Italy and look at best practice and innovative programs for the use of the Non Invasive ventilation in the Emergency setting. Upon returning to our home country, the new ideas were disseminated for the improvement of the hospital, organization, community and society as a whole. Although it was a challenging task to work outside our comfort zone, the support, guidance and teaching given to us made our fellowship a pleasurable experience. We learnt about the Italian way of living, their culture, their cuisine, their hospital working environment and their patient expectations and outcomes. We became familiar with the local hospital protocols for patient management.

The combined use of the ultrasound with NIV made this a particularly enriching fellowship and would not have been possible without the effort of our Italian colleagues who took the time and effort out of their busy schedules to ensure that this innovative, first EUSEM fellowship on non-Invasive ventilation was a success. I hope EUSEM will continue with this travelling, exchange fellowship in the near future for the development of the Emergency Medicine speciality and the young Emergency Medicine physicians throughout Europe.

References:

1. <http://eusem.org/education/yemd-fellowship/>
2. <http://eusem.org/wp-content/uploads/2016/10/Report-Heather-Wieman.pdf>