EUSEM 2018 GLASGOW, 8-12 SEPTEMBER
THE EUROPEAN EMERGENCY MEDICINE CONGRESS
EUSEM EUROPEAN SOCIETY FOR EMERGENCY MEDICINE

ACUTE CHLOROQUINE POISONING: old recommendations but aggressive management

P. Guénot[1-2], S. Lemoine[2], H. Romain[3], A. Khoury[4], L. Bareau[1-2], E. Dulaurent[5], P. Brocaires[5], H. Lefort[6], N. Granger-Veyron[7]

1. French Military Medical Service, 186th medical service, Cazaux air base, France; 2. Hospital of Arcachon; 3. 105th medical service, Merignac air base; 4. Department of Emergency Medicine and Critical Care, University of Franche-Comté, Besançon University Hospital, Besançon, France; 5. 185th medical service, Mont-de-Marsan air base; 6. Legouest Military Teaching Hospital, Emergency Department, Metz; 7. 12th medical center Bordeaux commander chief

Service de santé des armées

CENTRE HOSPITALIER D'ARCACHON

 # 15155

Background:

Chloroquine is a molecule used in the treatment and prevention of ***malaria***. It can be present in quantity at home because of the increase of the journeys in malarious zones, with risk of exposure to the voluntary or involuntary ***poisonings***. Mortality and morbidity are important for a dose greater than ***4 g***. Through the management of a patient suffering from a chloroquine poisoning, we try to show the need for ***early identification of its severity and appropriate forward medical management.***

Case report:

35-year-old female patient who has been intentionally intoxicated by ingestion of a potentially lethal dose of chloroquine.

The prehospital assessment shows an ***unstable hemodynamic state*** and early ***electrocardiographic disorders*** such as QT segment elongation (Fig 1) and ventricular extrasystoles (Fig. 2). The conscience is preserved. The conditioning consists in the administration of ***adrenaline*** and then ***diazepam*** with electric syringe pumps. The neurosedative effect and the risk of cardiac arrest impose ***oro-tracheal intubation***. ***Bicarbonate salts*** are injected and gastric lavage started. The patient is evacuated after regulation, by road and helicopter (Fig. 3) to the ***intensive cardiologic care unit***. The delay of care (between the call to the 15 and hospital arrival), does not exceed 2 hours. After a few days of hospitalization, the patient is transferred in psychiatric service.

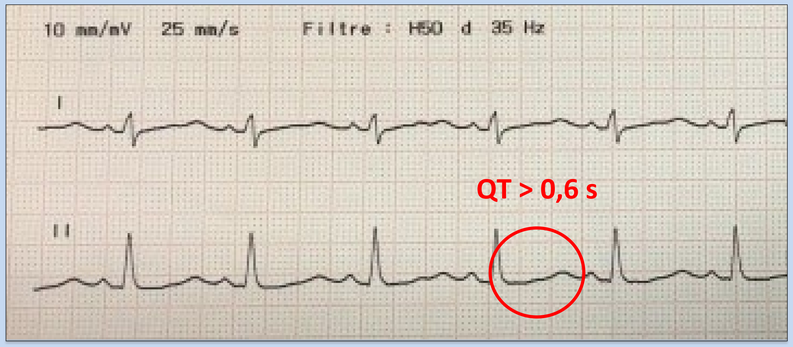

Figure 1: example of electrocardiographic disorder : QT segment elongation

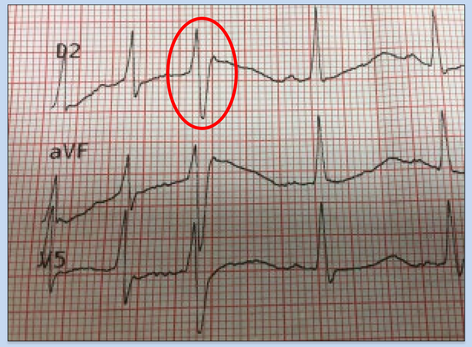

Figure 2: example of electrocardiographic disorder : ventricular extrasystole

Figure 3: aeromedical evacuation

PRONOSTIC FACTORS

- **Lethal poisoning dose ingested > 2 g**
- **QRS complex > 0.100 s ; arrhythmias or conduction disturbances**
- **Hypokaliemia**
- **Blood chloroquine concentration > 12 µmol.L^{-1}**

EFFECTS

- **Membrane stabilizing effect**
- **Negative inotropic effect**
- **Multiorgan dysfonction**
- **Precocity and severity of cardiovascular disorders : cardiac arrest**

TREATMENT PROTOCOL

1. Epinephine 0.25 µg.kg^{-1}.min^{-1}
(to keep a systolic blood pressure > 100 mmHg)
2. Endotracheal intubation using rapid sequence intubation
(etomidate 0.3 mg.kg^{-1})
3. Mechanical ventilation with adequate FiO_2 allowing SpO_2 > 96% or PaO_2 > 100 mmHg
4. Diazepam 2 mg.kg^{-1} in 30 min then 2-4 mg.kg^{-1}.h^{-1}

Discussion:

The main physiopathological characteristics of chloroquine are recalled, whose main attack is ***cardiac***. ***The recommendations of poisoning management are already old***. In particular, the combination of ***diazepam epinephrine and mechanical ventilation*** could reduce mortality. The use of the ***extra corporeal oxygenation membrane (ECMO)*** meets specific criteria and can be beneficial for the most serious cases refractory to conventional therapies.

Conclusion:

This observation highlights the deployment of a real ***"chain of survival"***. The vital emergency was recognized immediately. Its early and ***aggressive pre-hospital management*** has allowed regulation on a specialized ***resuscitation center***, fundamental to survival. The professional synergies with dynamic cooperation of the different actors have allowed the optimization of care of the patient.

pierre.guenot64@gmail.com