Internal and Emergency Medicine (2019) 14:635–636
https://doi.org/10.1007/s11739-019-02069-5

CE-LETTER TO THE EDITOR

Intranasal sufentanil given in the emergency department triage zone for severe acute traumatic pain—a randomized double-blind controlled trail: comment

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Received: 20 January 2019 / Accepted: 6 March 2019 / Published online: 12 March 2019

Dear editor,

We read with great interest the article by Lemoel et al. [1] previously published online in Internal and Emergency Medicine. This paper evaluated whether a single dose of intranasal (IN) sufentanil delivered in the triage zone of an emergency department would improve the management of severely painful adult patients with a limb injury (LI), receiving an intravenous (IV) multimodal analgesia (including opioids if needed). The authors considered IN analgesia in case of delayed care in an overcrowded emergency department. As military physicians, we would like to share our experience of IN analgesia in another context: i.e. tactical medicine.

The first special medical unit (French 1st AMS) provides tactical emergency medical support during Gendarmerie Nationale Intervention Group's (GIGN) operations. GIGN is a French counter-terrorism unit specializing in neutralizing terrorists on the national territory. A tactical medical team composed of a physician-nurse pair joins every counter-terrorism troop. They both belong to the French Military Medical Service (FMMS) and have significant experience in war injuries management [2]. The 1st AMS is engaged on the police operations restricted area. In connection with civilian emergency services [3], it represents the first level of care, with restricted capacities as each medical operator carries limited portable medical equipment. In an unsafe, austere or remote environment, close to the terrorist threat, IN analgesia as proposed by Lemoel et al. is an "efficient, safe and non-invasive alternatives to IV analgesia" [1]. Indeed, IN analgesia can be delivered faster than IV analgesia. It can be performed in a few minutes, even during tactical phases. It is also an efficient way to gain time in order to ensure both patient's and medical team's safety. The 1st AMS has developed its own IN analgesia protocol, with a dose of 0.6 mg/kg of sufentanil. It is implemented in the case of an isolated LI, either operator or hostage, while the police action is still taking place. During this initial management, performing IN analgesia allows the physician to follow the end of the action with the remaining troop, while the nurse cares for the patient. Our experience revealed the absence of serious adverse events associated with IN sufentanil analgesia.

More interestingly, Lemoel's contribution could help us to extend our IN analgesia protocol. In case of mass civilian shootings, patients with chest or abdominal injuries, or uncontrolled bleeding LI are treated in priority, whereas the population studied by Lemoel, i.e. isolated LI, will be exposed to delayed evacuations and care. IN analgesia would be delivered after an initial tactical triage while waiting for evacuations. A second step, utilizing IV opioids, will be performed by civilian prehospital emergency services at a casualty collection point located in the safety zone [3]. IN analgesia offers thereby a first management to LI, making the stretcher phase less painful, improving their well-being and decreasing potential agitation. At the dose of 0.4 mg/kg, within the framework of a strict survey protocol, Lemoel did not report any serious adverse events such as somnolence, emesis or respiratory depression. Moreover, side-effects were assessed after opioid IV injection. We can estimate that a single sufentanil IN use will decrease their risk of

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occurrence during the prehospital phase. These undesirable effects increase the number of stretcher patients, which slows down the evacuation, the critical stake in tactical medicine. So, IN sufentanil performed at this safety and efficacy dose could be used by the 1st AMS in case of massive casualties.

Recently, Dubecq et al., a French special forces medical team, reported their experience of IN analgesia. They published a cohort of 73 combat casualties [4] treated with IN ketamine at a dose of 0.5 mg/kg. IN ketamine was used as a sole agent in 80% of cases, without adverse events and with successful analgesia results. Unfortunately, because of their deployment conditions, their results suffer of methodological weaknesses. In our point of view, IN ketamine would not be recommended in case of mass civilian shootings. It exposes to well known adverse events such as mental dissociation or hallucinations, even with IN use. In a stressful and insecure environment, with noise and cries, it would be really challenging to study such adverse effects. It would however be very interesting to compare IN sufentanil and ketamine uses for severe acute traumatic pain management.

Progress in military medicine is often due to retrospective or observational studies, depending on the deployment conditions of military physicians. Lemoel's paper, with its transposable situation in forward medicalization, is an valuable help. It is finally shows the relevance of the cooperation between the FMMS and the French national health care system which was strongly reinforced since Paris' terrorist attacks in 2015 [5].

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Statement of human and animal rights This article does not contain any studies with human participants or animals performed by any of the authors.

Informed consent None.

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