

Management of trauma pain in Europe

Media backgrounder

The burden of trauma pain

Trauma refers to a shock injury, which sometimes requires immediate medical attention. Causes of trauma vary; trauma can be the result of an injury at home, at work or while playing sports, or due to falls, road traffic accidents or assaults. The traumatic injury activates pain receptors (nociceptors) at the site of the tissue damage, causing the patient to experience pain.¹

Trauma often results in a hospital visit and fast, effective pain relief (analgesia) is required. Yet pain is undertreated in both the emergency department and pre-hospital setting.¹⁻⁵ Up to 90% of patients present with pain in the emergency department;¹⁻⁴ however, only 21–68% with moderate-to-severe pain received an analgesic in large studies.⁶

Pain is a significant burden to patients, which may negatively impact their physical and psychological wellbeing, making it difficult for clinicians to treat the underlying trauma, reducing patient satisfaction with their treatment and may result in a longer stay in hospital.⁷⁻¹⁰

How is trauma pain treated in Europe?

The initial response to trauma and the type of pain relief provided depends on the severity of the accident and country guidelines. In some countries, first responders and nurses are not permitted to administer strong pain relief and patients will have to wait until a suitably qualified healthcare professional is available.

Common pain relief medicines (analgesics) used in emergency settings include paracetamol, non-steroidal anti-inflammatorys (NSAIDs), opioids, ketamine and nitrous oxide.⁸ Paracetamol, ketamine, NSAIDs and opioids can be given orally or intravenously via the bloodstream, while nitrous oxide, also known as gas and air, is inhaled. Each analgesic has different benefits and limitations.

Benefits and limitations of treatments

Nitrous oxide provides rapid inhaled pain relief; however, use is hindered by bulky, heavy canisters, and the need for filters and regular sterilisation to reduce the risk of cross-infection.¹¹⁻¹³ Oral pain medicines are more convenient than nitrous oxide and do not require needles, thereby reducing the risk of infection from a needle stick injury. However, oral analgesics start working more slowly than inhaled or intravenous (IV) medicines, meaning the patient will spend longer in pain.⁸

Pain is subjective and difficult to quantify, so standardised assessment tools have been developed. Two commonly used tools are the **Visual Analogue Scale (VAS)** and the **Numeric Rating Scale (NRS)**.^{1,4,8}

Patients using the VAS mark their pain on a 10 cm line with “no pain” at one end and “worst pain possible” at the other. The pain intensity score is the distance from “no pain” to the mark made by the patient (in mm). Patients using NRS rate their pain from 0 (no pain) to 10, or 0 to 100 to give the pain intensity score.⁴

While IV medicines work very quickly, it can be difficult and time-consuming to insert the tube that delivers the medicine (cannula) – especially at the scene of a serious accident – which can increase the amount of time first responders spend trying to transport the patient.¹⁴

IV opioids provide the most effective pain relief. However, opioids are controlled substances, which means their use is restricted and a specialist is needed to authorise and administer analgesia. In addition, because they have more serious side effects, patients will need to undergo monitoring in a hospital bed after administration.^{9,15}



Need for alternative options

A number of reasons have been given for the under-treatment of pain in pre-hospital and emergency department settings. These include restrictions on the pain relief first responders and nurses can administer, clinician reluctance to prescribe strong pain relief (in particular opioids) and concern that providing analgesia will prevent the diagnosis of the underlying trauma.^{9,14,16}

To overcome some of these barriers, there is a need for an alternative option⁹ that is fast-acting and non-invasive, enabling first responders to transfer patients to the hospital quickly and allowing clinicians to evaluate the trauma, start treatment, administer more pain relief or discharge the patient as quickly as possible. A non-opioid analgesic may be administered by healthcare professionals such as nurses and paramedics¹⁷ and unlike opioids, may not require monitoring after use.^{15,17}

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