

IN BRIEF

Summarizing the Evidence

Methoxyflurane in Pre-Hospital Settings: A Review

Key Messages

- The available evidence suggests that methoxyflurane may be effective for pain associated with trauma in the pre-hospital setting.
- However, it may not be as effective as other options, including intravenous morphine or intranasal fentanyl.
- In general, methoxyflurane was well-tolerated, with minimal adverse events.
- Overall, the evidence is limited; more research comparing methoxyflurane to other analgesic options in the pre-hospital setting is needed to determine its place in therapy.
- No cost-effectiveness studies or evidence-based guidelines were identified.

Context

Methoxyflurane is an analgesic and a muscle relaxant previously used for anesthesia until its withdrawal and discontinuation due to concerns relating to nephrotoxicity (toxicity to the kidneys). However, low-dose methoxyflurane in an inhaler form under the brand name Pentrox was recently approved by Health Canada in April 2018 for the short-term relief of pain including pain related to trauma or interventional procedures. Compared with other analgesics (such as opioids), the positive safety profile and the possibly lower potential for abuse makes methoxyflurane an attractive treatment option. Additionally, as intravenous sedation and other analgesics are often costly and labour-intensive, a method of analgesia that is at a lower cost is of interest.

Technology

Methoxyflurane – Pentrox – is a self-administered, inhaled analgesic with a quick onset of action, providing rapid pain relief. It is supplied as a 3 mL bottle solution of vaporized methoxyflurane; patients may inhale up to two bottles in a single administration. Minor adverse events can occur with the use of methoxyflurane such as nausea, dizziness, and somnolence. Generally, it appears to have a good safety profile when used at low concentrations.

Issue

A review of the clinical effectiveness, cost-effectiveness, and evidence-based guidelines for the use of methoxyflurane for patients in the pre-hospital setting will help to inform decisions regarding appropriate pain management in this setting.

Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

Results

The literature search identified 168 citations, with 17 additional articles identified from other sources. After screening the abstracts, 39 were deemed potentially relevant, and four met the criteria for inclusion in this review – two systematic reviews and two non-randomized studies.

Read more about CADTH and its review of methoxyflurane in the pre-hospital setting at:

cadth.ca/sites/default/files/pdf/htis/2018/RC1038%20Methoxyflurane%20in%20Pre-Hospital%20Settings%20Final.pdf



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January 2019