

IN BRIEF

Summarizing the Evidence

Methoxyflurane for Acute Pain in the Emergency Department: A Review

Key Messages

- One high-quality, randomized controlled trial (RCT) found methoxyflurane to be effective for pain relief for patients with mild-to-moderate trauma in the emergency department compared with placebo.
- While there were numerically more adverse events in the methoxyflurane group compared with the placebo group (not statistically tested), adverse events were primarily mild and transient.
- No studies were identified that compared methoxyflurane with alternative analgesics; as a result, the effectiveness of methoxyflurane compared with existing analgesics in the emergency department is uncertain.
- 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 because of 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. Compared with other analgesics (such as opioids), the positive safety profile and the possibly lower potential for abuse makes methoxyflurane an attractive treatment option for acute pain. 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 with acute pain in the emergency department 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 164 citations, with one additional article identified from another source. After screening the abstracts, 29 were deemed potentially relevant, and one randomized controlled trial met the criteria for inclusion in this review.

Read more about CADTH and its review of methoxyflurane for acute pain in the emergency department at:

cadth.ca/sites/default/files/pdf/htis/2018/RC1006%20Methoxyflurane%20for%20Acute%20Pain%20Final.pdf



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