

Morphine-Equivalent Dosing in Chronic Non-Cancer Pain

Context

Chronic non-cancer pain affects 15% to 30% of Canadians. It persists for longer than three months and is frequently related to back pain, osteoarthritis, fibromyalgia, and headaches. Opioids are commonly used to manage pain, but for many patients analgesic efficacy is not maintained over long time periods. Patients require higher doses to maintain the same level of pain relief. Higher doses come with increased risks of adverse events and side effects including overdose, fractures from falls, hormonal changes, and increased pain sensitivity.

Technology

Opioid pain medications available in Canada include codeine (e.g., Tylenol No. 3), tramadol, buprenorphine, morphine, hydromorphone (e.g., Dilaudid), oxycodone (e.g., OxyContin, OxyNEO, or Percocet), fentanyl, and methadone. Morphine equivalents (MEQ) provide a common terminology to discuss opioid dosing. For example, 13 mg of oxycodone is equivalent to 20 mg of MEQ. Or, 133 mg of codeine is also 20 mg of MEQ. Opioid analgesic conversion tables can be found at <http://nationalpaincentre.mcmaster.ca>.

Issue

The 2010 *Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain* advises that chronic pain can be managed in most patients with dosages at or below 200 mg per day of morphine or its equivalent. Clinicians are advised to reassess the response to therapy and risks of harm before exceeding this *watchful dose*. What is less clear for policy-makers, however, is whether there are important public health safety concerns at morphine-equivalent doses *below* 200 mg per day.

Methods

A limited literature search of key resources was conducted, 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).

Key Messages

Risk of opioid-related death increased as prescribed doses increased.

Risk of opioid-related death increased with prescriptions above 20 mg/day:

- 50 mg to 99 mg/day = 2 × risk
- 100 mg to 199 mg/day = 2 × risk
- More than 200 mg/day = 3 × risk.

Patients receiving doses of more than 100 mg/day had 7× risk of death compared with those receiving less than 20 mg/day.

The link between opioid dose and frequency of emergency department visits is unclear.

Based on limited evidence.

Results

The literature search produced 640 citations, with 13 additional studies identified from the grey literature. Of these, 50 articles were deemed potentially relevant, with 6 meeting the criteria for inclusion in this review: 4 non-randomized studies and 2 evidence-based guidelines.

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