

IN BRIEF A Summary of the Evidence

Magnesium as an Alternative or Adjunct to Opioids for Migraine and Chronic Pain: A Review

Key Messages

- High-quality evidence on whether magnesium is effective in the management of chronic pain and migraine is extremely limited, making definitive conclusions impossible.
- Magnesium was recommended for the prevention of migraine attacks (migraine prophylaxis) in two evidence-based guidelines. One study showed a decrease in migraine attacks with magnesium compared with no treatment but no change in migraine severity.
- Whether magnesium is effective in the treatment of acute migraine is uncertain and was not recommended in an evidence-based guideline.
- Intravenous magnesium followed by oral magnesium may possibly be beneficial for chronic low back pain that has not responded to other treatments.
- Intramuscular magnesium, but not intravenous magnesium, may possibly be beneficial for complex regional pain syndrome.

Context

Migraine and chronic pain are common disorders that can result in considerable disability. The lifetime prevalence of migraine in Canada has been estimated to be 24% in women and 9% in men. Chronic pain — pain lasting longer than three months — is estimated to affect up to 40% of Canadians. This can include conditions such as low back pain, fibromyalgia, neuropathic (or nerve) pain, and complex regional pain syndrome. The effective prevention and treatment of migraine and chronic pain remains a significant challenge for patients, their health care providers, and the Canadian health care system.

Technology

Magnesium is an abundant mineral in the body, and is naturally present in many foods. It is an essential mineral, necessary for more than 300 biochemical reactions in the human body. But it is its role in normal nerve function and signal transduction (cell signalling) that makes it of interest in the treatment of conditions such as migraine and chronic pain. Magnesium works to block an important receptor in the body called the N-methyl-D-aspartate, or NMDA, receptor, and it is this action that is thought to lead to pain relief.

Issue

As Canada grapples with an opioid crisis, there is a push to identify alternatives to opioids for the management of chronic pain that are not only effective but available and accessible by patients across the country. Magnesium could fit the bill. But is magnesium effective in the management of migraine and chronic pain? If so, at what dose, and using which route of administration: oral, intravenous, intramuscular, or intra-articular (through the joint)? A review of the clinical effectiveness and evidence-based guidelines for magnesium as an alternative to opioids for migraine and chronic pain will help to guide decisions about the management of these conditions.

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 573 citations, with no additional relevant articles identified from other sources. Of these, 17 potentially relevant reports were selected for full-text review, and 10 met the criteria for inclusion in this report — three systematic reviews, four randomized controlled trials, and three evidence-based guidelines.

Read more about CADTH and its review of magnesium for migraine and chronic pain:



cadth.ca/magnesium-alternative-or-adjunct-opioids-chronic-pain-review-clinical-effectiveness-and-guidelines-0

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