

IN BRIEF A Summary of the Evidence

Topical NSAIDs Versus Opioids for Acute Musculoskeletal Pain: A Review

Key Messages

- Topical nonsteroidal anti-inflammatory drugs (NSAIDs) appear to be effective at reducing acute musculoskeletal pain from sprains, strains, or sports injuries in healthy adults.
- Topical NSAIDs do not appear to cause serious adverse effects; and milder reactions, such as skin redness and itching, are rare and occur also with placebo treatment.
- No evidence comparing the effectiveness of topical NSAIDs with opioids for acute musculoskeletal pain relief was found.
- Whether topical NSAIDs are effective enough to replace or reduce the use of opioids for acute musculoskeletal pain is unknown.

Context

Acute musculoskeletal pain is muscle or bone pain resulting from sprains, strains, and sports injuries that lasts for less than three months, but that may develop into chronic pain if not adequately treated. Acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs) are the recommended first-line treatments for acute musculoskeletal pain. If stronger pain relief is deemed necessary, a prescription of weak opioids, including tramadol or codeine, or strong opioids, including morphine or oxycodone, is recommended. However, these pain relief treatments are all associated with serious adverse effects. High-dose NSAIDs use can increase gastrointestinal and cardiovascular disease risk, high-dose acetaminophen use can cause liver damage, and tramadol overdose can cause brain damage. With rising opioid prescription rates in Canada, there are also concerns about their prolonged use leading to the development of opioid use disorder.

Technology

Topical NSAIDs are unique in that, unlike the more common oral treatments, they provide pain relief through direct application to the site of injury. It is thought that applying the medication directly to the skin might allow a lower dose to be effective, while also minimizing the risk of adverse effects. Topical NSAIDs are available in different types and formulations – both over-the-counter and by prescription. Evidence suggests that they may be effective as an alternative or complementary treatment to orally administered drugs for acute musculoskeletal pain relief.

Issue

With the health risks associated with high doses of current pharmaceutical treatments for acute pain and the increasing prescription of opioids in Canada, there is a need for safer alternative therapies for pain relief. A review of the clinical effectiveness of topical NSAIDs compared with opioids or placebo in patients with acute musculoskeletal pain will help inform decisions regarding options for acute pain management.

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 564 citations, with no additional relevant articles identified from other sources. Of these, 13 potentially relevant reports were selected for full-text review, and 4 met the criteria for inclusion in this review – 3 systematic reviews and meta-analyses, and 1 randomized controlled trial.

Read more about CADTH's review of topical NSAIDs versus opioids for acute musculoskeletal pain at:

cadth.ca/topical-nsaids-versus-opioids-acute-musculoskeletal-pain-review-clinical-effectiveness-0.

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