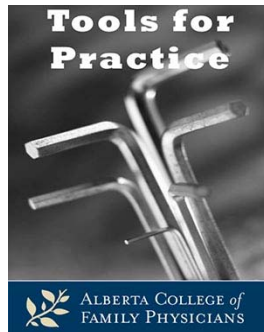


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Topical NSAIDs: Do they top Placebo or Oral NSAIDs?

Clinical Question: Are topical NSAIDs effective in reducing pain in acute and chronic (including osteoarthritis) musculoskeletal pain?

Evidence:

- Acute musculoskeletal pain: Systematic review of 47 randomized controlled trials (RCTs) with 5512 patients (within 24-48 hours onset).¹
 - Clinical Success (defined as 50% pain reduction, good pain relief or equivalent): Statistically significantly greater with topical NSAID versus placebo, relative benefit 1.5 (Confidence interval [CI] 1.4-1.6).
 - Topical NSAID 65% versus Placebo 43%, Number Needed to Treat (NNT) = 4.5
 - Topical diclofenac, ibuprofen, ketoprofen and piroxicam were all effective
 - Adverse events and withdrawals were not different.
 - Benefit decreased over time: 6-8 days NNT=4 and 9-14 days NNT=9.5
 - This may be due to recovery over time in the placebo arm.
- Chronic musculoskeletal pain (including osteoarthritis): 3 Systematic reviews comparing topical NSAIDs to placebo.²⁻⁴
 - Short-term (2 weeks) effects: Consistent statistically significant improvement.^{2,3} Example, relative benefit 1.9 (CI 1.7-2.2), NNT 4.6 for improved pain over placebo.³
 - Long-term (=12 weeks) effects: Statistically significant pain reduction versus placebo.⁴
 - Comparing topical to oral NSAIDs: Pain control is similar (relative risk 1.1, CI 0.9-1.3).³

Context:

- Other meta-analyses^{5,6} support topical NSAIDs in acute musculoskeletal pain or single joint osteoarthritis.
 - Present evidence does not support topical NSAIDs in back pain, neuropathic conditions or widespread pain.⁶
- UK osteoarthritis guidelines place topical NSAIDs (or acetaminophen) as first line pharmacotherapy for knee and/or hand osteoarthritis.⁷
 - Intra-articular NSAID levels are therapeutic with topical or oral but circulation levels of topical NSAIDs are 15% of oral NSAIDs.⁸
- Recommending specific formulations is challenged by the lack of trials comparing different formulations (types of gels/creams) on clinical outcomes.

Bottom-line: In acute and chronic (like osteoarthritis) musculoskeletal pain, topical NSAIDs are superior to placebo and equivalent to oral NSAIDs. Topical NSAIDs adverse event rates are not statistically greater than placebo.

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8. [NICE OA Guideline February 2008](#)

Tools for Practice is a biweekly article summarizing medical evidence with a focus on topical issues and practice modifying information. It is coordinated by G. Michael Allan, MD, CCFP and the content is written by practising family physicians. Archived articles are available on the ACFP website.

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