Review: topical NSAIDs reduce pain in osteoarthritis only during the first 2 weeks of use

Lin J, Zhang W, Jones A, *et al*. Efficacy of topical non-steroidal anti-inflammatory drugs in the treatment of osteoarthritis: meta-analysis of randomised controlled trials. *BMJ* 2004;**329**:324.

Q Are topical non-steroidal anti-inflammatory drugs (NSAIDs) efficacious for treatment of osteoarthritis?

METHODS

Data sources: Medline, CINAHL, EMBASE/Excerpta Medica, Scientific Citation Index, and *Cochrane Library* (up to October 2003); reference lists; and conference abstracts from international societies of rheumatology (2002–3).

Study selection and assessment: randomised controlled trials (RCTs) in any language that compared topical NSAIDs with placebo or oral NSAIDs in patients with clinical or radiographic evidence of osteoarthritis. Individual study quality was assessed based on randomisation, blinding, and withdrawals.

Outcomes: reduction in pain (global pain or pain at rest) from baseline, change in function or stiffness, and adverse events (eg, gastrointestinal, central nervous system, and local events).

MAIN RESULTS

13 trials (16 comparisons, n = 2224) met the selection criteria. Mean age of patients ranged from 61–67 years. Comparison groups were placebo (13 comparisons, n = 1460) and oral NSAIDs (3 comparisons, n = 764).

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Topical NSAIDS v placebo. Topical NSAIDs reduced pain and improved function more than placebo during the first 2 weeks of treatment but not during weeks 3 and 4 (table). Topical NSAIDs improved stiffness more than placebo during the first week but not during weeks 2–4 (table). Topical NSAIDS did not differ from placebo for adverse events.

Topical v oral NSAIDs. Topical NSAIDs were less effective than oral NSAIDs for pain reduction in the first week, but did not differ for weeks 2–4 (table). Topical NSAIDs did not differ from oral NSAIDs for adverse events, gastrointestinal events, or withdrawals because of adverse events; however, more patients who received topical NSAIDs had local events, such as rash, itch, and burning (7.4% *v* 1%, relative risk increase 429%, 95% CI 14 to 2351).

CONCLUSIONS

In patients with osteoarthritis, topical non-steroidal anti-inflammatory drugs (NSAIDs) reduce pain during the first 2 weeks of use but do not differ from placebo at 3 or 4 weeks. Topical NSAIDS are less effective than oral NSAIDs during the first week but do not differ from oral NSAIDs for weeks 2–4.

See commentary on next page.

Topical non-steroidal anti-inflammatory drugs (NSAIDs) *v* placebo or oral NSAIDs for osteoarthritis*

	Topical NSAIDS *v* placebo		Topical NSAIDs *v* oral NSAIDs	
Outcomes	Number of comparisons (n)	Pooled effect size (95% CI)	Number of comparisons (n)	Pooled effect size (CI)
Pain relief (1 wk)	9 (1000)	0.41 (0.16 to 0.66)†	1 (208)	−0.38 (−0.66 to −0.10)‡
Pain relief (2 wks)	8 (893)	0.40 (0.15 to 0.65)†	1 (208)	−0.19 (−0.47 to 0.09)
Pain relief (3 wks)	4 (442)	0.05 (−0.11 to 0.22)	2 (529)	−0.26 (−0.68 to 0.16)
Pain relief (4 wks)	5 (558)	0.04 (−0.11 to 0.19)	1 (208)	−0.10 (−0.37 to 0.18)
Improved function (1 wk)	4 (566)	0.37 (0.20 to 0.53)†	1 (208)	−0.32 (−0.60 to −0.04)‡
Improved function (2 wks)	4 (540)	0.35 (0.19 to 0.53)†	1 (208)	−0.24 (−0.52 to 0.04)
Improved function (3 wks)	1 (208)	0.10 (−0.18 to 0.38)	2 (529)	−0.11 (−0.28 to 0.06)
Improved function (4 wks)	1 (208)	0.26 (−0.02 to 0.54)	1 (208)	−0.10 (−0.38 to 0.17)
Reduced stiffness (1 wk)	1 (74)	0.64 (0.19 to 1.09)†	Not assessed	Not assessed
Reduced stiffness (2 wks)	1 (81)	0.33 (−0.13 to 0.79)	Not assessed	Not assessed

*Abbreviations defined in glossary.
†Significant result favouring topical NSAIDs over placebo.
‡Significant result favouring oral over topical NSAIDs.

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Notes