General practitioners' advice to use topical rather than oral ibuprofen resulted in equivalent effects on chronic knee pain

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STUDY DESIGN

Design: randomised controlled trial (Topical or Oral Ibuprofen [TOIB]).
Allocation: concealed.*
Blinding: blinded (data collectors).*

STUDY QUESTION

Setting: 26 general practices in the UK.
Patients: 282 patients ⩾50 years of age (mean age 63 y, 54% women) with knee pain (97% with osteoarthritis). Exclusion criteria included history of, or awaiting, knee replacement, and recent knee injury.
Intervention: the patient's general practitioner prescribed or recommended preferential use of over-the-counter topical ibuprofen, applied according to manufacturer's instructions (eg, 0.5 g per knee up to 3 times/d, equivalent to 75 mg/d of ibuprofen using a 5% preparation) (n = 138), or oral ibuprofen, up to 1.2 g/day (n = 144). Increased dose, additional painkillers, or alternate non-steroidal anti-inflammatory drugs (NSAIDs) were allowed, but maintaining the allocated route was encouraged.
Outcomes: primary outcomes were the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score and adverse effects. The study had >80% power to show equivalence in WOMAC scores to within 10 mm ($\alpha = 0.05$).

Follow-up period: 12 months.
Patient follow-up: 88% (intention-to-treat analysis).

MAIN RESULTS

Groups did not differ for change in WOMAC scores (table). Proportions of patients with ⩾1 unplanned hospital admission were similar (4.4% in the topical group *v* 1.4% in the oral group, p = 0.16); no death or episode of gastric bleeding occurred in either group. Patients in the topical group had a lower rate of minor respiratory adverse effects (7% *v* 17%, p = 0.02), but groups did not differ for minor gastrointestinal (42% *v* 40%) or renovascular (16% *v* 15%) adverse effects.

CONCLUSION

In older patients with chronic knee pain, general practitioners' advice to use topical rather than oral ibuprofen resulted in equivalent effects on knee pain.

*See glossary.
A modified version of this abstract appears in *Evidence-Based Nursing*.

ABSTRACTED FROM

Underwood M, Ashby D, Carnes D, *et al*. Topical or oral ibuprofen for chronic knee pain in older people. The TOIB study. *Health Technol Assess* 2008;**12**:1–176.

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► **Clinical impact ratings:** GP/FP/Primary care 6/7; IM/Ambulatory care 6/7; Rheumatology 6/7; Surgery—Orthopaedics 6/7

Advice from general practitioners to use topical *v* oral ibuprofen for chronic knee pain

	Baseline scores		12-month scores		
WOMAC domain*	Topical	Oral	Topical	Oral	Difference (95% CI)†
Pain	39	30	38	36	1 (−4 to 6)
Stiffness	50	47	46	43	0 (−6 to 5)
Disability	37	38	39	36	3 (−2 to 7)
Global assessment	38	39	40	37	2 (−2 to 6)

*WOMAC, Western Ontario and McMaster Universities Osteoarthritis Index (visual analogue scale, range 0 to 100 [worst]).
†Difference in change from baseline, adjusted for baseline values. A positive difference favours oral ibuprofen. CI defined in glossary.

COMMENTARY

Compared with placebo, paracetamol, at doses of 2.6 to 4 g/day, provides a reduction in osteoarthritic pain of modest clinical significance.[1] NSAIDs reduce pain more than paracetamol, especially in severe osteoarthritis, but with increased incidence of gastrointestinal adverse effects.[1] A 2004 systematic review of topical NSAIDs found that they were superior to placebo for osteoarthritis in the first 2 weeks of treatment but not at weeks 3 or 4 (the maximum length of the trials).[2] However, 2 subsequent manufacturer-sponsored trials in patients with knee osteoarthritis showed that topical diclofenac reduced WOMAC pain scores more than placebo at 4 and 12 weeks, respectively.[3 4]

The trial by Underwood *et al* is the first long-term study comparing an oral with a topical NSAID, ibuprofen. The trial was designed to show equivalence, rather than superiority; the authors concluded that there was no difference in effectiveness. However, the more important finding may be that there was little difference between mean baseline and 12-month WOMAC scores for both preparations (eg, change for global assessment was +2 with topical and -2 with oral ibuprofen). In the absence of a placebo group, it is impossible to conclude whether the 2 treatments were equally mildly effective or equally ineffective.

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