

Review: Misoprostol is cost-effective for preventing gastropathy in patients who require NSAIDs

van Dieten HE, Korthals-de Bos IB, van Tulder MW, et al. Systematic review of the cost effectiveness of prophylactic treatments in the prevention of gastropathy in patients with rheumatoid arthritis or osteoarthritis taking non-steroidal anti-inflammatory drugs. *Ann Rheum Dis*. 2000 Oct;59:753-9.

QUESTION

In patients with rheumatoid arthritis or osteoarthritis requiring nonsteroidal anti-inflammatory drugs (NSAIDs), which prophylactic treatments are cost-effective for preventing gastropathy?

DATA SOURCES

Studies were identified by searching MEDLINE (1966 to November 1999), EMBASE/Excerpta Medica (1988 to September 1998), NHS Economic Evaluation Database, Cochrane Library (1999, issue 1), and bibliographies of relevant studies and reviews. Keywords used for searching electronic databases included costs, cost analysis, cost-benefit analysis, digestive system diseases, gastritis, misoprostol, stomach ulcer, peptic ulcer perforation, omeprazole, and proton-pump inhibitor.

STUDY SELECTION

Selected studies contained a full or partial economic evaluation, included patients who had osteoarthritis or rheumatoid arthritis and were taking NSAIDs, and assessed any type of prophylactic treatment for NSAID-induced gastropathy. Studies were restricted to those in English, Dutch, or German.

DATA EXTRACTION

Data were extracted on patients, treatment, study design, direct and indirect costs, primary outcome, and comparison of misoprostol with placebo. Main outcome was cost-effectiveness of treatment. Methodologic quality for economic studies was assessed using the Drummond (1997) checklist. Quality of randomized controlled trials was assessed using Cochrane Back Review Group criteria.

MAIN RESULTS

10 studies met the inclusion criteria. 9 studies had a quality score $\geq 50\%$. All studies evaluated misoprostol as prophylactic treatment compared with placebo or no treatment. 1 study evaluated misoprostol plus diclofenac (Arthrotec), misoprostol alone, and H₂-receptor antagonists. 7 studies evaluated economic data from 3 high-quality RCTs. 1 study reported cost savings ranging from U.S. \$78 to \$84 (\$74 to \$79 in general hospitals; \$78 for widows, orphans, pensioners, and invalids; and \$84 for university hospital employees).^{*} In the same study, lives saved were approximately 14 and 14.7 per 10 000 patients in university and general hospitals, respectively. 1 study reported treatment costs

of \$175 per patient compared with \$208 without treatment. 1 study reported 3-month savings of \$11 and \$16 saved per patient in Scotland and England, respectively. Arthrotec had a cost of \$939 per patient compared with \$1153 per patient for other NSAID treatment in 1 study. A cost-utility analysis in 1 study showed that treatment with misoprostol costs more and provides no additional quality of life when compared with no prophylaxis. Sensitivity analysis for a quality score of $\geq 60\%$ resulted in 5 high-quality economic evaluations, all showing cost-effectiveness favoring misoprostol prophylaxis.

CONCLUSION

In patients with rheumatoid arthritis or osteoarthritis requiring nonsteroidal anti-inflammatory drugs, misoprostol treatment is more cost-effective for preventing gastropathy than is placebo or no treatment.

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^{*}Currencies were transformed into U.S. dollars for the years stated in the original articles.

COMMENTARY

The systematic review by van Dieten and colleagues summarizes the published economic evaluations of misoprostol and other treatments used to prevent asymptomatic and symptomatic gastrointestinal (GI) lesions during long-term NSAID therapy. The authors did not pool cost-effectiveness estimates across studies because of valid methodologic concerns; instead, they qualitatively evaluated and then ranked the studies on the basis of their methodologic rigor, paying particular attention to those studies that were based on data from randomized controlled trials. Their conclusion, drawn from the highest-quality studies, depends on the specific methodologic quality criteria they use. These criteria have high face validity, and we agree with their conclusion that misoprostol is an economically attractive prophylactic treatment for gastropathy in patients requiring long-term NSAID therapy.

Since the publication of the Misoprostol Ulcer Complication Outcomes Safety Assessment (MUCOSA) study (1), the question of whether to use mucosal protective strategies at all has changed to which therapy to choose. Randomized trials show, for example, that omeprazole has equal efficacy in the treatment and prevention of gastric erosions and ulcers as misoprostol and may have a lower frequency of disease relapse on maintenance therapy (2). Because a substantial cost difference exists between omeprazole and misoprostol,

an economic evaluation of this therapeutic decision would be invaluable for clinicians.

Finally, only 1 study addressed quality of life. For many patients, GI lesions from NSAID therapy are asymptomatic, whereas misoprostol causes adverse effects in a clinically significant proportion of patients. A cost-utility comparison assessing the effects of all current modes of gastric mucosal protection on quality of life would best clarify this frequently encountered management dilemma.

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