Effectiveness of interventions for the treatment of acute and prevention of recurrent gout: a systematic review

Sutaria S, Katbamna R, Underwood M

CRD summary
The authors concluded that there is a lack of robust data and a need to re-evaluate treatments for gout. Review methods were incompletely reported but, overall, the authors' conclusions about the lack of adequate evidence appear to reflect the limited data identified.

Authors' objectives
To evaluate the effectiveness of treatments for acute gout and the prevention of recurrent gout.

Searching
MEDLINE, PubMed, the Cochrane Controlled Trials Register, ISI Web of Science, EMBASE and AMED were searched from inception to the end of 2004; the search terms were reported. No language restrictions were applied. References from the identified studies and reviews were screened.

Study selection

Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion in the review.

Specific interventions included in the review
Studies that compared an active treatment with no treatment, placebo or another active treatment were eligible for inclusion in the review of treatment of acute gout. Studies had to use routinely available treatments. Studies of gout prevention treatments had to involve a minimum duration of 6 months of treatment and follow-up. Studies of acute treatments evaluated non-steroidal anti-inflammatory drugs (NSAIDs), (including tenoxicam, etoricoxib and indometacin compared with placebo or each other), colchicine, adrenocorticotrophic hormone (ACTH), intramuscular triamcinolone and ice. The study of preventive treatment evaluated sulphinpyrazone.

Participants included in the review
Studies of patients with acute gout (however defined) were eligible for inclusion in the review of treatment of acute gout. Studies of patients with at least one previous attack of acute gout (however defined) were eligible for inclusion in the review of gout prevention.

Where stated, the patients in the included studies were diagnosed with gout using one or more of the following: clinical criteria, crystals, hyperuricaemia, previous history, and American College of Rheumatology criteria. Patients had gout affecting various joints (details were reported where possible).

Outcomes assessed in the review
The inclusion criteria were not defined in terms of outcomes. For studies of acute gout treatment, the primary outcome was pain at 24 and 48 hours (or time closest to this); the secondary outcomes included any other patient-focused outcomes and adverse events. For studies of gout prevention, the primary outcome was the incidence of recurrent gout; the secondary outcomes were the difference in serum urate between intervention and control groups and adverse events. The included studies used various scales and measures to assess pain.

How were decisions on the relevance of primary studies made?
Two reviewers independently selected the studies. Any disagreements were resolved with the aid of a third reviewer.

Assessment of study quality
The authors did not state how the validity assessment was performed. Validity was assessed and scored using the Jadad scale. The maximum possible score was 5 points.

**Data extraction**
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. The results data for each study were tabulated.

**Methods of synthesis**

How were the studies combined?  
The studies were grouped by type of treatment and combined in a narrative.

How were differences between studies investigated?  
Differences between the studies were apparent from the text and tables.

**Results of the review**

Thirteen RCTs (n=726) were included for the treatment of gout and one (n=14) for the prevention of gout.

The studies were generally of a poor quality with only 4 of the 13 RCTs on the treatment of gout scoring 4 or 5 on the Jadad scale. The studies were poorly reported. The study of the prevention of gout was very small and only reported as an abstract.

**Treatment for acute gout.**

**NSAIDs.**

One RCT (n=30) reported that significantly more patients allocated to tenoxicam had a 50% or more reduction in pain after 24 hours compared with patients allocated to placebo (67% versus 26%, p<0.005), but there was no significant difference between treatments after 4 days. Nine studies compared different NSAIDs. Two high-quality studies (n=150 and n=189) compared the equivalence of etoricoxib and indometacin. Both studies reported that the two drugs had an equivalent effect on pain over 2 to 5 days. Both studies reported fewer drug-related adverse events in the etoricoxib group, with no difference between treatments in overall adverse events. The other 7 studies were of a poor quality, reported no clinically relevant differences between the treatments, and were mostly too small to detect a treatment difference.

**Colchicine.**

One RCT (n=43) reported no significant difference between colchicine and placebo in the proportion of patients with 50% or more reduction in pain at 24 hours (41% versus 9%); after 48 hours there were significantly more patients with 50% or more pain reduction in the colchicine group (73% versus 36%, p<0.05). All patients receiving colchicine developed toxicity; all developed diarrhoea and/or vomiting.

**ACTH.**

One poor-quality study (n=31) compared ACTH with intramuscular triamcinolone but did not report pain outcomes.

**Ice.**

One small poor-quality study (n=19) reported that steroids plus local ice were associated with a significant reduction in pain after 1 week compared with steroids alone (p=0.021).

**Treatment for prevention of gout.** One small study (n=14) reported a lower serum urate level in patients allocated to colchicine plus sulphipyrazone compared with colchicine alone (0.35 versus 0.58 mmol/L). The number of attacks of gout appeared similar for both treatment groups (29 attacks over 170 months versus 32 attacks over 173 months). No
statistical tests were applied.

**Authors' conclusions**
There is a lack of robust data and a need to re-evaluate treatments for gout.

**CRD commentary**
The review addressed a clear question that was defined in terms of the participants, intervention and study design. Although inclusion criteria were not defined for the outcomes, the primary review outcomes were clearly stated. Several relevant sources were searched and no language restrictions were applied. Some limited attempts were made to locate unpublished studies, thus minimising the possibility of publication bias. Methods were used to minimise reviewer error and bias in the selection of the studies, but it is not clear whether similar steps were taken in the assessment of validity and the extraction of data. Validity was assessed using established criteria and the results of the assessment were reported. In view of the diversity of the studies, a narrative synthesis that took account of study quality was appropriate. The review methods were incompletely reported but overall, the authors' conclusions about the lack of adequate evidence appear to reflect the limited data identified.

**Implications of the review for practice and research**
Practice: The authors stated that there is a need to reconsider the risks and benefits of drugs used for acute gout and a need to reconsider the use of allopurinol, sulphinpyrazole and lifestyle factors for gout prevention.

Research: The authors stated that there is a need to re-evaluate treatment for acute gout and gout prevention.

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**Record Status**
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract
contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.