Systematic review of therapies for osteoarthritis of the hand

Towheed T E

CRD summary
This review assessed therapeutic nonsurgical interventions for osteoarthritis of the hand. The author concluded that there was insufficient evidence to make reliable recommendations about the most appropriate treatment, and that consensus guidelines are required on methods for future research. The well-described methodological limitations of the included studies are reflected in the author's conclusions.

Authors' objectives
To assess therapeutic nonsurgical interventions for osteoarthritis (OA) of the hand.

Searching
MEDLINE (from 1966), PREMEDLINE, EMBASE (from 1980) and the Cochrane CENTRAL Register were searched to August 2004. The search terms were reported and no language restrictions were applied. Non-English language reports were only included if their English abstracts reported sufficient details of the methodology and outcomes. Unpublished studies were excluded, conference proceedings were not searched, and experts were not contacted.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion. The median duration of the included studies was 9.5 weeks (range: 2 hours to 260 weeks).

Specific interventions included in the review
Studies of nonsurgical therapeutic interventions were eligible for inclusion. The included studies used a variety of symptom modifying treatments and structural modifying therapies. The symptom modifying treatments included topical and oral non-steroidal anti-inflammatory drugs, topical acetylsalicylic acid, various types of occupational therapy, capsaicin cream and various unconventional therapies. The structural modifying therapies included glycosaminoglycan polyphosphate, chondroitin sulphate and chondroitin polysulphate. Details of the individual drugs and therapies were reported.

Participants included in the review
Studies of adults with OA of the hand (defined using any method or no definition) were eligible for inclusion. The primary studies included patients with primary and secondary OA, but most did not distinguish between the two types and most did not use a validated hand OA classification system for study entry. In the included studies, the majority of the participants were female (81%), the mean age was 61.5 years (range: 53 to 69), and the mean duration of OA of the hand was 6.2 years (range: 2 to 10).

Outcomes assessed in the review
Studies assessing any outcomes were eligible. The included studies most commonly assessed pain, function and patient global status; details of the other outcomes assessed were reported. A minority of studies assessed outcomes using a standardised validated questionnaire.

How were decisions on the relevance of primary studies made?
The author did not state how the studies were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
Validity was assessed and scored using the Jadad scale, which considers the reporting and handling of randomisation,
blinding and handling of withdrawals. The maximum possible score was 5 points. The studies were also assessed for control for cointerventions, sample size calculations, a definition of the primary outcome, adequacy of data to enable comparisons of baseline characteristics between the treatment groups, and the use of appropriate methods of statistical analysis. The author did not state who performed the validity assessment.

Data extraction
Data were extracted on an intention-to-treat basis where possible, but the author did not state how many reviewers performed the data extraction. Data on the number of patients randomised, the number completing, and results of comparisons between interventions were extracted.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative.

How were differences between studies investigated?
Differences between the studies were discussed in the text, with a focus on quality criteria.

Results of the review
Thirty RCTs involving a total of 31 comparisons were included (n at least 2,648). There were 7 crossover comparisons from crossover RCTs and 24 comparisons from parallel-group RCTs. The sample size, where reported, ranged from 5 to 910 at enrolment.

Study quality was generally low (median Jadad score 3, range: 0 to 5). Methodological limitations included the use of inappropriate statistical analysis (16 RCTs) and lack of the following: patient blinding (11 RCTs), investigator blinding (13 RCTs), control for cointerventions (20 RCTs), sample size calculations (26 RCTs), description of randomisation method (25 RCTs), description of method of blinding (22 RCTs), definition of primary outcome (22 RCTs), data to allow comparison of baseline characteristics between treatment groups (20 RCTs), and description of adequate method of allocation concealment. Other problems included inconsistent definitions of OA of the hand, a lack of standardised methods to assess outcomes, and insufficient reporting of the number and location of joints at study entry and at follow-up.

There was some evidence of efficacy from an RCT for the following therapies: trolamine salicylate, glycosaminoglycan polyphosphate, fiorinal and FIPA, splints for first carpal metacarpal OA, occupational therapy, dextrose prolotherapy, oral non-steroidal anti-inflammatories, stinging nettle leaf, topical capsaicin, vitamin B12 with folate, yoga and spa therapy.

There was also some evidence from an RCT for structural efficacy of glycosaminoglycan polyphosphate, chondroitin sulphate and chondroitin polysulphate.

Authors' conclusions
There was insufficient evidence to make reliable recommendations about the most appropriate treatment for patients with OA of the hand. Consensus guidelines are required on methods for future research.

CRD commentary
The review addressed a clear question that was defined in terms of the participants, intervention and study design. Three relevant databases were searched, but no attempts were made to locate unpublished studies, thus raising the possibility of publication bias. The requirement for English language abstracts also raised the possibility of language bias; the author acknowledged the potential for both types of bias. The methods used to select studies, assess validity and extract the data were not described, so it is not known whether any efforts were made to reduce errors and bias. Validity was adequately assessed using established criteria and the results were reported. The narrative synthesis was
appropriate given the lack of comparability among generally poor-quality studies. The well-described methodological limitations of the included studies are reflected in the author's conclusions and support the need for consensus guidelines and further research. However, the review is weakened by the lack of reporting of the review methods.

Implications of the review for practice and research
Practice: The author stated that clinicians will need to use their own judgment to select treatment for patients with symptomatic OA of the hand.

Research: The author stated that there is a need for consensus guidelines on methods to be used in future RCTs of hand OA, and a need for high-quality RCTs that follow these consensus guidelines.

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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.