CRD summary
The authors concluded that, compared with sham acupuncture or conventional drugs, acupuncture was not associated with a significant reduction in pain for patients with rheumatoid arthritis. The authors' conclusions reflected the evidence presented. However, a degree of caution might be required in interpreting these conclusions, given the small size and limited quality of the included trials.

Authors' objectives
To assess the efficacy of acupuncture in the treatment of rheumatoid arthritis.

Searching
The following databases were searched, with no language restrictions, from inception to April 2008: AMED, CINAHL, British Nursing Index, EMBASE, MEDLINE, PsycINFO and the Cochrane Library. Six Korean medical databases and four Chinese medical databases were also searched up to April 2008. Search terms were reported. Departmental files and relevant journals were manually searched up to March 2008. The reference lists of retrieved publications were also screened.

Study selection
Randomised controlled trials (RCTs) that compared needle acupuncture, with or without electrical stimulation, moxibustion, laser or auricular acupuncture, with controls in patients with rheumatoid arthritis were eligible for inclusion. Trials testing Transcutaneous Electrical Nerve Stimulator (TENS) were excluded. Studies comparing two different forms of acupuncture and those not reporting clinical data were also excluded.

The primary outcomes reported in the review were pain reduction, response rate, and joint swelling index. Additional outcomes were American College of Rheumatology response criteria (ACR20), Health Assessment Questionnaire (HAQ), Disease Assessment Scale (DAS) index, and number of swollen or tender joints.

The control arm of included RCTs was penetrating or non-penetrating sham acupuncture, or conventional drugs (indomethacin, diclofenac and methotrexate). Half of included RCTs permitted additional therapy with analgesics. The time since diagnosis of rheumatoid arthritis for included patients ranged from 45 days to 12 years. The majority of included patients were female.

The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The quality of trials was assessed using the modified version of the Jadad score, a 5 point scale evaluating randomisation, blinding, withdrawal and allocation concealment. The quality of acupuncture was assessed using a visual analogue scale, with assignment of a degree of confidence (0% = complete absence of evidence that acupuncture was appropriate; 100% = total certainty that acupuncture was appropriate).

Two reviewers independently performed the validity assessment, with any disagreement resolved by discussion or a third reviewer.

Data extraction
Data for the outcomes of interest were extracted. Two reviewers independently validated and extracted the data from studies, with any disagreement resolved by discussion or a third reviewer.

Methods of synthesis
The studies were combined in meta-analyses using a random-effects model. Weighted mean differences for continuous
outcomes, with 95% confidence intervals, were calculated. Pooled relative risks for dichotomous data, with 95% confidence intervals, were also estimated. The variance of the change was imputed using a correlation factor of 0.4. Statistical heterogeneity was assessed using \( \chi^2 \), \( \tau^2 \) and \( I^2 \) statistics.

**Results of the review**

Eight randomised controlled trials (RCTs) were included in meta-analyses (n= 614 patients). Methodological quality varied between trials, with a Jadad score ranging from 1 to 5. Blinding and concealment of allocation were inadequate in the majority of trials. The degree of confidence that acupuncture was applied appropriately ranged from 20% to 90%. All RCTs except for one had a short duration of the intervention (less than three months).

Compared with penetrating sham acupuncture, manual or electro-acupuncture was associated with a non-significant reduction in pain on the Visual Analogue Scale (weighted mean difference -0.46, 95% confidence interval (CI): -1.70 to 0.77; three RCTs).

Compared with conventional drugs, acupuncture plus moxibustion was associated with a non-significant difference in the Visual Analogue Scale response rate (relative risk 1.12, 95% CI: 0.99 to 1.28; three RCTs), pain index (weighted mean difference 1.53, 95% CI: -0.57 to 3.63; two RCTs) and joint swelling index (weighted mean difference 0.25, 95% CI: -1.31 to 1.82; two RCTs).

Statistically significant heterogeneity was not observed in the outcomes. Subgroup analyses assessing the effects of manual acupuncture on pain reduction compared with penetrating sham acupuncture were reported.

Additional outcomes for American College of Rheumatology response criteria (ACR20), Health Assessment Questionnaire (HAQ), Disease Assessment Scale (DAS) index and number of swollen/tender joints were also reported.

**Authors' conclusions**

Compared with sham acupuncture or conventional drugs, acupuncture was not associated with a significant reduction in pain for patients with rheumatoid arthritis.

**CRD commentary**

This review's inclusion criteria were clear. Several relevant databases were searched. Efforts were made to find published and unpublished studies without language restriction, minimising the potential for both publication and language biases. Steps were taken to minimise bias by having more than one reviewer undertake the validity assessment and data extraction, but it was unclear whether the process of study selection was performed in duplicate. Relevant criteria were used to examine the trial quality. Statistical heterogeneity was assessed. Appropriate statistical methods were used to pool the results. This review was generally well conducted in most respects and the authors’ conclusions reflected the evidence presented. However, a degree of caution might be required in interpreting these conclusions, given the small size and limited quality of the included trials.

**Implications of the review for practice and research**

Practice: The authors did not state any implications for practice.

Research: The authors stated that further rigorous RCTs are required to overcome the limitations of the current evidence.

**Funding**

Korea Institute of Oriental Medicine, Acupuncture, Moxibustion and Meridian Research Project K08010.

**Bibliographic details**


**PubMedID**
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.