A systematic review of the clinical effectiveness of acupuncture for allergic rhinitis

Roberts J, Huissoon A, Dretzke J, Wang D, Hyde C

CRD summary
The authors concluded that there was insufficient evidence to support or refute the use of acupuncture for patients with allergic rhinitis. These cautious conclusions are likely to be reliable.

Authors' objectives
To evaluate the effectiveness of acupuncture for the treatment of allergic rhinitis.

Searching
The following databases were searched from inception to August 2007: MEDLINE, EMBASE, the Cochrane Library, AMED, NRR, Acubriefs, and CNKI. Search terms were reported and the bibliographies of included studies were searched for additional references. No language restrictions were applied.

Study selection
Randomised controlled trials (RCTs) of acupuncture versus placebo with or without standard care, for patients with persistent allergic rhinitis with or without other allergies, were included. Acupuncture treatment was defined as any treatment which stimulated acupoints. The outcomes of interest were broadly defined as any measurement relating to the impact of treatment and could include quality of life, days off work or school, symptom scores, medication use, and adverse effects.

Included RCTs evaluated a range of acupuncture treatments such as needle-based and laser acupuncture compared with sham acupuncture (needling on other points, superficial needling, or sham laser). The intervention was delivered either pre-seasonally or when patients were symptomatic. Frequency of sessions ranged from one to five per week, with a total of between two and 16 sessions. The most commonly reported outcome measures were symptom severity, evaluated using a visual analogue scale, and medication usage. These trials took place across Europe, Hong Kong, and Australia and only one trial included paediatric patients, while in the others the ages ranged from 18 to 70 years.

It appears that three reviewers selected trials for inclusion in the review.

Assessment of study quality
A modified version of the Jadad scale was used to assess methodological quality. Items evaluated baseline characteristics, blinding, allocation concealment, and drop-out rates. The maximum possible score was eight.

Quality assessment was performed independently by two reviewers for English-language papers, and by one reviewer for non-English-language papers. Discrepancies were resolved by discussion.

Data extraction
A standardised extraction form was used to record mean differences between treatment groups for each trial. These were presented as the weighted mean difference (WMD) and 95% confidence interval (CI).

Data extraction was performed independently by two reviewers for English-language trials, and by one reviewer for non-English-language trials. Discrepancies were resolved by discussion.

Methods of synthesis
Mean differences were summarised as the WMD and 95% CI where similar scales were used, where different scales were used to measure the same attribute, results were given as the standardised mean difference (SMD) and 95% CI. Fixed-effect models were used unless significant statistical heterogeneity was noted. Statistical heterogeneity was assessed using the χ² and I² tests. The authors planned to investigate publication bias using a funnel plot if sufficient
Results of the review

Seven RCTs were included (n=459 patients), and five were suitable for meta-analysis (n=348). The quality was rated as generally very poor with only three trials scoring better than 50% on the quality scale.

**Symptom severity:** Random-effects analysis of the five RCTs found no significant benefit of acupuncture for symptom severity in allergic rhinitis, SMD -1.09 (95% CI -2.33 to 0.10) although significant heterogeneity was noted ($I^2=96.2\%$). When the poorest quality study was excluded from the analysis, the heterogeneity reduced slightly ($I^2=76.1\%$) and the effect size reduced and remained not statistically significant, SMD -0.43 (95% CI -0.89 to 0.02).

**Serum immunoglobulin E:** Pooled fixed-effect analysis for two trials found no significant benefit in favour of acupuncture, SMD -0.19 (95% CI -0.56 to 0.18). No significant heterogeneity was present.

**Medication use change:** Three trials reported medication use changes; one reported a significant reduction in the acupuncture group, while the other two found no significant differences.

**Adverse effects:** No trials reported any severe adverse effects associated with the use of acupuncture.

Authors' conclusions

There was insufficient evidence to support or refute the use of acupuncture in patients with allergic rhinitis.

CRD commentary

This review used clear inclusion criteria to explore a well-defined question. A range of databases were searched, without language or date restrictions. The review processes were generally well reported and the use of more than one reviewer to perform data extraction and quality assessment is likely to have reduced error and bias, although this was only done for the English-language papers. Study quality was considered within the review, and the analysis appears to have been appropriate.

There was some clinical heterogeneity between the included studies in terms of both the population and intervention characteristics. The authors commented on this, and their cautious conclusions seem justified given the small-sample poor-quality primary trials.

Implications of the review for practice and research

**Practice:** The authors stated that it is not possible to recommend acupuncture on the basis of the published evidence.

**Research:** The authors stated that a large well conducted RCT which overcomes the methodological problems described in this paper is required to provide a clearer answer as to whether acupuncture is a useful intervention for allergic rhinitis.

Funding

Department of Public Health and Epidemiology, University of Birmingham.

Bibliographic details


PubMedID

18430229

DOI

10.1186/1472-6882-8-13
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.