Efficacy of acupuncture as a treatment for tinnitus: a systematic review
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Authors' objectives
To review all randomised controlled trials (RCTs) on the efficacy of acupuncture as a treatment for tinnitus.

Searching
The authors searched MEDLINE from 1969 to 1998, EMBASE from 1988 to 1998, CISCOM (December 1998) and the Cochrane Controlled Trials Register (Issue 4, 1998) using the keywords 'acupuncture' and 'tinnitus'. Additional articles were identified by handsearching the contents pages of all relevant Korean journals, by contacting a Japanese researcher for literature from Japan, and by examining reference lists of retrieved articles. Studies in any language were considered.

Study selection
Study designs of evaluations included in the review
RCTs were included.

Specific interventions included in the review
Manual and electroacupuncture (with or without biofeedback, and cinnarizine) compared with a control intervention such as routine physiotherapy, sham acupuncture (subcutaneous insertion or pricking or using random points), placebo with or without biofeedback, and cinnarizine.

Participants included in the review
Adult patients diagnosed with chronic tinnitus.

Outcomes assessed in the review
Visual analogue scale (VAS) scores for loudness, annoyance and awareness of tinnitus; subjective severity scale scores for tinnitus; or Nottingham Health Profile scores.

How were decisions on the relevance of primary studies made?
Two authors independently performed the study selection, and any disagreements were resolved by discussion among all three authors.

Assessment of study quality
The methodological quality of the included studies was assessed using the Jadad scale (see Other Publications of Related Interest). The authors do not state how the papers were assessed for quality, or how many of the authors performed the quality assessment.

Data extraction
Two authors independently performed the data extraction, and any disagreements were resolved by discussion among all three authors. Data were extracted for the categories of: study identification and year of publication, number of participants, study design, intervention (number of sessions), control, main outcome measures, main results, Jadad score, follow-up, and statistics used in the individual studies.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative review. The authors state that a meta-analysis was not possible due to the inconsistency of outcome measures used and the absence of detail in results.
How were differences between studies investigated?
The authors do not state a method for assessing any differences between the studies.

**Results of the review**
Six RCTs were included in the review with 185 participants, of which 112 received acupuncture. Four of the studies used a crossover design.

Three studies scored at least 3 points on the Jadad scale, out of a possible 5 points.

Two unblinded studies showed a positive result, whereas 4 blinded studies showed no significant effect of acupuncture. All 3 of the better quality studies, i.e. those with a Jadad score greater than or equal to 3, reported negative results.

**Authors’ conclusions**
The authors state that, on the evidence of rigorous RCTs, acupuncture has not been demonstrated to be efficacious as a treatment for tinnitus.

**CRD commentary**
The authors stated a clear research question, and described study design, outcomes and intervention in the inclusion and exclusion criteria. The search strategy appears to be thorough and included foreign language papers that were translated for the review. It is unlikely that any additional relevant studies were missed.

The authors described the process for selecting papers for the review and the process of data extraction. It is not mentioned, however, how many authors performed the quality assessment. A well-known quality scoring system was used for the quality assessment, although this 5-point scale only assessed blinding, randomisation and loss to follow-up.

Statistical pooling was not performed due to a lack of data. The narrative summary of the trials presented good detail of the study and participant characteristics, and reported results by the pre-stated outcome measures. Overall, this is a fair review and the authors’ conclusions appear to follow from their results.

**Implications of the review for practice and research**
Practice: The authors did not state any implications for practice.

Research: The authors state that future research should use clear treatment schedules that are have already been tested and are backed by evidence from case series studies.

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