Traditional needle acupuncture treatment for insomnia: a systematic review of randomized controlled trials

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CRD summary
The review found that available evidence did not allow a clear conclusion about the effects of traditional needle acupuncture on insomnia. Although some studies suggested positive outcomes, the generally low quality of data necessitated very cautious interpretation. The review was well conducted in most respects and the authors' cautious conclusions appear reliable.

Authors' objectives
To evaluate the efficacy of traditional needle acupuncture for insomnia.

Searching
MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials (CENTRAL), PsycINFO, DAI, CINAHL, AMED, CSJD, Wangfang, CJN and CPCD were searched from inception to June 2008. Search terms were reported. Several specialised acupuncture journals were handsearched. Reference lists of retrieved articles were checked.

Study selection
RCTs of needle acupuncture compared with placebo, Western medication or no treatment for participants with a chief complaint of insomnia were eligible for inclusion in the review. Studies of other types of acupuncture (such as auricular, acupressure and laser) were excluded.

Participants in the included studies varied widely in clinical characteristics (for example, pregnancy, stroke, spondylosis), duration of insomnia (range four days to 28 years, where reported) and mean age (27 to 71 years, where reported). Methods of diagnosing insomnia varied; Chinese Classification of Mental Disorder criteria were frequently used. Treatment was usually daily, using either a standardised or an individualised regimen. Treatments varied widely in acupoints used, number of main acupoints treated (range four to 16) and duration (range two to 56 days). Stimulation, where used, was manual or electrical (where reported). In most studies the comparator was a benzodiazepine; other control interventions included sleep hygiene counselling and sham acupuncture. Few studies used a standardised outcomes measurement tool. Efficacy outcomes included effectiveness rate (proportion of participants with improved symptoms), sleep quality scores such as insomnia severity index (ISI). The review also reported adverse events. All studies assessed only short-term outcomes. Most studies were set in China.

Two reviewers independently selected the studies. Disagreements were resolved by discussion.

Assessment of study quality
Study quality was evaluated using a modified Jadad scale to assess reported randomisation, blinding and withdrawals or dropouts to a maximum score of 5 points. Standards for Reporting Interventions in Controlled Trials of Acupuncture (STRICTA) were used to appraise reporting standards in each study.

The authors did not state how many reviewers performed the assessment.

Data extraction
Odds ratios (ORs) were extracted or calculated for dichotomous outcomes and standardised mean differences (SMD) for continuous outcomes, with 95% confidence intervals (CIs).

The authors did not state how many reviewers performed data extraction.
Methods of synthesis
Where studies were similar in clinical characteristics and of sufficiently high quality (Jadad score at least 3), it was planned to combine them statistically. Due to poor study quality, studies were not pooled statistically but were combined in a narrative synthesis organised by outcome. For effectiveness rates, publication bias was assessed by means of a funnel plot and subgroup analysis was conducted by type of treatment (standardised or individual).

Results of the review
Twenty RCTs were included in the review (n=1,956, range 30 to 190). Only two studies were of acceptable quality (at least 3 Jadad points). Nine RCTs described their randomisation method, two described withdrawals and dropouts and only one was double blinded; the others were unblinded. Compliance with STRICTA criteria was poor.

Fourteen out of 17 RCTs reported that the effectiveness rate for improving symptoms of insomnia was significantly higher in the traditional needle acupuncture group than the benzodiazepine group at either immediate or one-week follow-up; the other three RCTs found no statistically significant difference between the groups. Results of standardised and individualised treatment were similar (effectiveness rates of 90% for standardised and 93% for individualised). The funnel plot for this outcome suggested possible publication bias.

Four RCTs that reported sleep quality scores all reported a statistically significant benefit from traditional needle acupuncture compared to controls. In two of these RCTs with acceptable quality, traditional needle acupuncture was superior to sleep hygiene counselling (sleep quality score SMD -1.22, 95% CI -2.14 to -0.29) and sham acupuncture (individualised SMD -1.31, 95% CI -2.11 to -0.51).

Adverse events were reported in two RCTs (total n=28); there was one event in each study.

Authors’ conclusions
Available evidence did not allow a clear conclusion about the effects of traditional needle acupuncture on insomnia. Although some studies suggested positive outcomes for traditional needle acupuncture, the general low quality of data necessitated very cautious interpretation.

CRD commentary
The objectives and inclusion criteria of the review were clear and relevant sources were searched for studies. It was unclear whether the search was limited by publication status and whether articles in languages other than English and Chinese were included, so the possibility that some studies may have been missed could not be excluded. Steps were taken to minimise reviewer error and bias by having more than one reviewer independently select studies; it was unclear whether this also applied to validity assessment and data extraction. The decision to combine the studies by narrative synthesis was appropriate given the heterogeneity between them. Better-quality studies were given priority in the interpretation of results. The authors highlighted likely sources of bias in the included studies, such as lack of blinding, imprecise outcomes measures and poor reporting. The review was well conducted in most respects and the authors’ cautious conclusions appear reliable.

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

Research: The authors stated that large placebo-controlled double-blinded trials were required to determine the efficacy and safety of traditional needle acupuncture treatment for insomnia. Further studies could use placebo acupuncture needles and validated subjective and objective measures.

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