Is acupuncture beneficial in depression: a meta-analysis of 8 randomized controlled trials

CRD summary
The authors concluded that low-quality studies showed acupuncture could reduce the severity of depression, but that further research was required. This was overall a well-conducted review. Evidence appeared to support the authors’ conclusions, but the significant heterogeneity found for all analyses should be borne in mind when assessing their reliability.

Authors' objectives
To evaluate the effects of acupuncture in patients with depression.

Searching
MEDLINE, EMBASE, BIOSIS Previews, Cochrane Central Register of Controlled Trials (CENTRAL) and the Chinese Medical Literature Database were searched in March 2007. Search terms were reported. Reference lists of identified studies, reviews, commentaries and proceedings from meetings were handsearched. No restrictions were applied to language, year or publication status.

Study selection
Randomised controlled trials (RCTs) that compared any type of acupuncture with sham acupuncture in patients with major depression or depressive neurosis (diagnosed using defined criteria) were eligible for inclusion. The primary review outcome was improvement in depression measured as the mean difference in the change in depression measures between treatment groups. Secondary outcomes were response rate (generally defined as a 50% decrease in depression scores) and remission rate.

In all but one study patients had major depression. Most studies diagnosed depression using Diagnostic and Statistical Manual of mental Disorders (DSM-III or DSM-IV criteria); others used the International Classification of Diseases (ICD) or the Chinese Classification of Mental Disorders. Only limited information was provided about participants. All but one study assessed outcomes using the Hamilton Depression Rating Scale (HAMD). All but one study evaluated manual acupuncture with or without electric acupuncture. Studies used different active and sham acupuncture points. The duration of interventions ranged from two weeks to more than 16 weeks (most lasted six to 12 weeks). The number of acupuncture sessions ranged from 10 to 30.

Two reviewers independently selected studies and resolved disagreements by discussion.

Assessment of study quality
Validity was assessed using the Jadad criteria (randomisation, double-blinding and reporting of withdrawals) and the following individual quality items: allocation concealment; assessor blinding; intention-to-treat analysis; drop-outs; and sample size. The maximum possible Jadad score was 5 points.

The authors did not state how many reviewers assessed validity.

Data extraction
For each study, post-treatment standardised mean differences were calculated for continuous outcomes; relative risks were used for dichotomous data.

Two reviewers independently extracted data and resolved disagreements through discussion.

Methods of synthesis
Pooled weighted mean differences and relative risks with 95% confidence intervals were calculated. Heterogeneity
was assessed using the Q and the $I^2$ statistics. Random-effects models were used where there was significant heterogeneity. The influence of diagnosis (major depression or neurosis) and the influence of each study were explored. Differences between studies were discussed. Publication bias was assessed using a funnel plot and Egger’s test.

**Results of the review**

Eight RCTs were included (n=477).

Three studies scored 5 out of 5 on the Jadad scale; the other studies scored 3. Five studies reported randomisation methods, seven were double-blinded, five reported reasons for withdrawals and four used intention-to-treat analysis. Drop-out rates ranged from 6% to 33%.

Acupuncture was associated with a statistically significant reduction in depression scores compared to sham acupuncture (standardised mean difference -0.65, 95% CI: -1.18 to -0.11, p=0.02; seven studies). Significant heterogeneity was found (p<0.00001, $I^2=84.1\%$). Depression scores were also significantly reduced in patients with major depression (six studies) and depressive disorder (one study). Results were similar and significant heterogeneity remained after excluding each study in turn. There was no evidence of publication bias from the funnel plot or Egger’s test (p=0.84).

There was no statistically significant difference between active and sham acupuncture in response rates (six studies) or remission rates (four studies). Significant heterogeneity was found for both analyses (p=0.006, $I^2=69.7\%$ and p=0.03 and $I^2=67.9\%$).

**Authors’ conclusions**

Evidence from low-quality studies showed that acupuncture could reduce the severity of depression, but further research was required.

**CRD commentary**

The review question was clearly stated and inclusion criteria were appropriately defined. Several relevant sources were searched and attempts were made to minimise publication and language biases. Methods were used to minimise reviewer errors and bias in the selection of studies and data extraction, but it was unclear whether similar steps were taken in the assessment of validity. Only RCTs were included, validity was assessed and results were reported in full. Studies were combined using meta-analysis, attempts were made to identify sources of heterogeneity and differences between studies were discussed. Despite the authors' opinion, the included studies appeared to be of reasonable quality. This was overall a well-conducted review. Evidence appeared to support the authors’ conclusions, but the significant heterogeneity found for all analyses should be borne in mind when assessing their reliability.

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

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

**Research:** The authors stated that more full-scale RCTs were required to evaluate the clinical and long-term effectiveness of acupuncture for depression. Studies should directly compare acupuncture with placebo and pharmacotherapy. There was also a need to study methods to match traditional Chinese medicine to Western medicine systems.

**Funding**

National Natural Science Foundation of China (no. 30672442). The Shanghai Municipal Commission of Education Foundation (no. 05BZ14). Co-operative Program of Rhone-Alps Region and Shanghai.

**Bibliographic details**

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.