Effectiveness of acupuncture in the treatment of temporomandibular disorders of muscular origin: a systematic review of the last decade

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CRD summary
This review concluded that there was short-term benefit for acupuncture for temporomandibular disorder pain of muscular origin; local acupuncture achieved the greatest pain reduction. The authors’ conclusions reflected the limited evidence base, but given the small number and small size of studies and uncertainty over parts of the review process they should be interpreted with caution.

Authors' objectives
To evaluate the effectiveness of acupuncture treatment for temporomandibular disorders of muscular origin.

Searching
MEDLINE, EMBASE, CINAHL and CISCOM were searched for published studies without language restrictions from 1997 to 2008; search terms were reported.

Study selection
Randomised controlled trials (RCTs) that used acupuncture treatment on temporomandibular disorder patients with orofacial pain of muscular origin were eligible for inclusion. Studies that assessed multiple interventions were excluded.

In the included studies acupuncture was compared with either sham acupuncture or sham laser; the verum (real) acupuncture points chosen for treatment varied widely between studies. Where stated, the depth of needle insertion varied from 6mm to 30mm and treatment duration lasted from 15 to 30 minutes. Outcomes assessed pain reduction and all studies reported outcomes that used visual analogue scales (VAS); additional measurements were reported. Average age ranged from 34.5 to 43.1 years. Nearly all participants were female.

The authors did not state how many reviewers performed the study selection.

Assessment of study quality
Two reviewers independently assessed methodological quality using a Delphi List, a 10-item checklist that assessed: randomisation; treatment allocation; specified eligibility criteria; blinding of assessor, care provider and caregiver; description of primary outcome measures as point estimates and variability measures; use of intention-to-treat analyses; and drop-out rate. Studies were assigned a summary score based on the number of items fulfilled (maximum score 10). High-quality studies were defined as those that scored at least 6.

Disagreements were resolved by including the criteria of a third reviewer to reach consensus.

Data extraction
Significant changes in pain outcomes were extracted.

The authors did not state how many reviewers performed data extraction.

Methods of synthesis
The studies were combined in a narrative synthesis.

Results of the review
Four RCTs were included in the review (n=83, range 15 to 27). Study quality scores ranged from 7 to 9; there was
inadequate allocation concealment in three studies, no blinding of the outcome assessor in one study, no blinding of the carer in four studies and more than 20% dropout in one study.

All four studies reported temporomandibular disorder pain reduction for both verum and sham acupuncture; compared to sham acupuncture, verum acupuncture yielded a statistically significant pain reduction based on VAS scores (three studies). There was limited evidence that stimulation of LI-4 alone reduced temporomandibular disorder pain (three studies). Two studies used specific local acupoints (ST-6 and ST-7) of which ST-7 produced statistically significant reductions of temporomandibular disorder pain (one study).

Authors’ conclusions
There was short-term benefit for acupuncture for temporomandibular disorder pain of muscular origin; local acupuncture achieved the greatest pain reduction.

CRD commentary
The objectives and inclusion criteria of the review were clear; no specific inclusion criteria for outcomes were reported. A number of relevant databases were searched. Published studies without language restrictions were included; this minimised potential for language biases, but given the type of intervention it seemed possible that publication bias was present. Methodological assessment appeared to be used as a tool for selecting studies for inclusion. Steps were taken to minimise reviewer error and bias during assessment of methodological quality; no such steps were reported for study selection and data extraction. A narrative synthesis was appropriate in view of the heterogeneity of the included studies.

The studies all reported short-term outcomes and so generalisability to long-term effects of acupuncture for treatment of temporomandibular disorder pain was uncertain. The authors’ conclusions reflected the limited evidence base, but given the small number and small size of studies and uncertainty over parts of the review process they should be interpreted with caution.

Implications of the review for practice and research
Practice: The authors stated that ST-6, ST-7 and LI-4 acupoints should be used for the treatment of temporomandibular disorder pain of muscular origin.

Research: The authors stated that larger studies that assessed long-term effects, including the duration of analgesia, of acupuncture in the treatment of temporomandibular disorders were required. Studies that used distal points alone were required to determine whether pain improvements were clinically important, as was research on which points and/or combination of points to use and duration of efficacy of acupuncture.

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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.