Acupuncture as a treatment for temporomandibular joint dysfunction: a systematic review of randomized trials

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Authors' objectives
To summarise the data from randomised controlled trials of acupuncture for temporomandibular joint dysfunction (TMJD).

Searching
MEDLINE, the Cochrane library, EMBASE, and CISCOM from when each database started until 1997. Search terms used were: acupuncture, dental pain, and temporomandibular joint. The authors own databases on acupuncture were searched and other experts in the field were asked to submit further references. The bibliographies of all identified studies were searched for further references. Studies in all languages were included in the review.

Study selection
Study designs of evaluations included in the review Randomised clinical trials (RCTs).

Specific interventions included in the review Acupuncture as the active treatment compared to sham acupuncture, standard treatment or no treatment.

Participants included in the review Human subjects with TMJD.

Outcomes assessed in the review Both subjective (symptom score and tenderness threshold of masseter muscle) and objective (a dysfunction index) end points were used in all studies.

How were decisions on the relevance of primary studies made? All articles were read in full by two reviewers disagreements were resolved through discussion.

Assessment of study quality
This was not clearly stated but a narrative description commented on the following: randomisation, blinding of subjects and clinicians, withdrawals and drop-outs and reporting of adverse effects. The authors do not state how the papers were assessed for validity, or how many of the authors performed the validity assessment.

Data extraction
Data were extracted in a standardised, predefined fashion. data were extracted on: indication, main exclusion criteria, design, sample size, interventions, main end points, follow-up and main results.

Methods of synthesis
How were the studies combined? A qualitative analysis was presented.

How were differences between studies investigated? The authors do not state how differences between the studies were investigated.
Results of the review
Six reports pertaining to 3 trials were identified. One trial was reported twice, the second report presented further analysis of the same outcome measures and was excluded. Another trial was reported three times, each report concerning a different end point or measurement point. Since different groups were analysed the 3 reports were presented separately but the results were considered as one study. The included studies included a total of 205 participants.

Details of randomisation were insufficient to determine whether an appropriate method was used and whether allocation was concealed at the time of determining a subject’s inclusion in the study. No study was subject blind and clinicians assessing the dysfunction index were not reported to be blinded to the subjects treatment. Withdrawals and drop-outs were reported in one study, and in one study individual patient details were provided indicating that there were no drop-outs. No study commented on adverse effects.

One study compared acupuncture with standard stomatognathic treatment, including any combination of counselling, occlusal adjustment, muscle exercises and occlusal splints. The 2 treatments had a similar effect on the dysfunction index: stomatognathic treatment was significantly better at the 5% level one week after treatment (p=0.04), but not at 3 months follow-up (p=0.12). There was no difference in the subjective patient estimates of the two treatments. Two studies compared acupuncture to occlusal splints and a control group receiving no treatment. In one study both the subjective symptom scores and objective clinical examination scores were significantly better for both treatment groups compared to the untreated controls, there was no significant difference between the two active groups. The other study found that acupuncture was significantly superior (p>0.05) to occlusal therapy and control (being on a waiting list) in anamnestic index, subjective evaluation, reduction in pain frequency, and activities of daily living.

Acupuncture and occlusal therapy were significantly superior to control in pain visual analogue scale (p<0.01) and clinical dysfunction index (p<0.05).

Authors’ conclusions
Even though all studies are in accordance with the notion that acupuncture is effective for temporomandibular joint dysfunction, this hypothesis requires confirmation through more rigorous investigations.

CRD commentary
A through literature search was undertaken with inclusion criteria clearly stated and applied systematically. No formal validity assessment was conducted, however, methodological factors of the primary studies were discussed in the results section. Details of the primary studies included in the review were presented and an appropriate qualitative analysis was conducted.

Implications of the review for practice and research
The author notes that none of the included trials were blinded, details of randomisation were not given, and all three studies came from Scandinavia. Further confirmatory studies from other areas are therefore needed to increase the reliability of the results reported in this review. Whether acupuncture has any specific effects or acts through non-specific effects should be investigated with rigorously sham-controlled and blinded trials.

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