The use of acupuncture in dentistry: a systematic review

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Authors' objectives
To determine whether clear conclusions can be obtained for the use of acupuncture in dentistry.

Searching
The following databases were searched for papers published between 1966 and 1996: Biological Abstracts, Ciscom, EMBASE, Excerpta Medica, MEDLINE and Science Citation Index. The search words used were: 'acupuncture' or 'electro-acupuncture' and 'randomised controlled trials' and 'dental pain' or 'postoperative dental pain' or 'relieved by acupuncture in dentistry' or 'dental analgesia'. Only papers published in the following languages were included in the review: Danish, English, German, Norwegian and Swedish.

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

Specific interventions included in the review
Acupuncture or electroacupuncture that involved the use of needles. Studies of TENS or laser acupuncture were excluded. Control groups received placebo, non-standard acupuncture or another treatment.

Participants included in the review
Patients requiring dental analgesia, for either post-operative pain (extraction of teeth) or facial muscular pain.

Outcomes assessed in the review
Pain (methods of assessment not described).

How were decisions on the relevance of primary studies made?
The author does not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
Studies were scored according to a list of predefined criteria as suggested by Vickers, 1995 (see Other Publications of Related Interest). The list contained 23 parameters relating to patients, control group, randomisation, blinding, treatment, and results. Each study was scored on each parameter, 4 points for very good, 3 points for good, 2 points for fair, 1 point for not satisfactory, or 0 points for poor, giving a possible total score of 92 points. Studies that met less than 60% of the criteria scores were deemed to have major methodological deficiencies which are likely to influence the outcome. The author does not state how the papers were assessed for validity, or how many of the reviewers performed the validity assessment.

Data extraction
The author does not state how the data were extracted for the review, or how many of the reviewers performed the data extraction.

Methods of synthesis
How were the studies combined?
Studies were combined in a narrative form.
How were differences between studies investigated?
No statistical test for heterogeneity was conducted. The difference between dental pain versus other pain (facial pain and temperomandibular joint (TMJ)) is discussed briefly, as well as the different quality scores of included studies.

Results of the review
Fifteen studies were included in the review, with a total of 834 participants.

Eleven out of the 15 studies demonstrated acupuncture to be more effective than placebo, non-standard (sham) acupuncture, or showed it to be able to produce better or similar results to an accepted treatment procedure. Four studies showed no effect. Only one study fulfilled more than 85% of the methodological quality criteria. Five studies fulfilled between 70% and 84% of the criteria, three met 60% to 69% and six studies met less than 60%.

Seven studies dealt with extraction of teeth, in particular impacted 3rd Molar. Of these papers three scored less than 60% on the methodological quality criteria. Of the remaining 4 studies, three were in favour of acupuncture and one was not.

Four studies investigated the treatment of facial pain and TMJ dysfunction, and all four studies demonstrated a positive effect of acupuncture (quality score range was 77% to 84%).

Authors' conclusions
Eleven out of 15 papers were in favour of standard (traditional) acupuncture, having been shown to be more effective than non-standard (sham) acupuncture or to have a similar effect to conventional treatments. The value as an analgesic for surgery is questioned, but the beneficial effect in treatments TMJ-dysfunction and facial pain seems real, and in this area acupuncture could be a valuable alternative to orthodox treatment. Never the less the number of good quality randomised controlled trials are few and more studies are required.

CRD commentary
The author presented a clearly stated objective, used a specific inclusion/exclusion criteria, and assessed the validity of included studies. The literature search conducted was relatively thorough, however, no attempt was made to search for unpublished studies, which may have resulted in publication bias. In addition, only one reviewer conducted data extraction, made all the decisions on the relevancy of primary studies as well as scoring the methodological quality of included studies. This means that subjective judgement may result in 'selection' or 'reviewer' bias.

The conclusions seem to follow from the results.

Implications of the review for practice and research
The author suggests that further quality RCTs, investigating the use of acupuncture in dentistry, are required.

Bibliographic details

Other publications of related interest

Indexing Status
Subject indexing assigned by CRD

MeSH
Acupuncture Analgesia; Acupuncture Therapy; Anesthesia, Dental /methods; Dental Care /methods; Dental Research
AccessionNumber
11999005168

Date bibliographic record published
31/03/2000

Date abstract record published
31/03/2000

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.