The use of acupuncture in dentistry: a review of the scientific validity of published papers

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Authors' objectives
To review the scientific validity of published papers on the efficacy of acupuncture in dentistry based on pre-defined methodological criteria.

Searching
MEDLINE, Biological Abstracts, Excerpta Medica, Science Citation Index, EMBASE and Ciscom were searched using the following keywords: acupuncture and electro-acupuncture; randomised controlled trials; dental pain; postoperative dental pain; pain relieving by acupuncture in dentistry; and dental analgesia. Papers were retrieved in Danish, Swedish, Norwegian, English and French.

Study selection
Study designs of evaluations included in the review
Randomised blinded trials were included. Studies were excluded for the following reasons: abstract indicated study was not a RCT; paper was of a general nature and had no relevance to acupuncture; paper was in French, Italian or Russian.

Specific interventions included in the review
Acupuncture needles including electro-acupuncture were used. Control treatments included non treatment, conventional treatment, placebo acupuncture, splinting, codeine and placebo codeine. TENS and laser acupuncture were excluded.

Participants included in the review
Participants included patients having teeth (including third molars) extracted, patients with facial pain and those with temporomandibular dysfunction.

Outcomes assessed in the review
Results are reported as being favourable or unfavourable to acupuncture. No further details are given.

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
Validity was assessed using the following criteria: participants (comparability of source population, inclusion and exclusion criteria, criteria appropriate, criteria likely to influence outcome, adequacy of sample size, sample size); control group (appropriateness, inactive or active placebo); randomisation (method described and adequate, baseline matching); blinding (subject, therapist, observer, credibility of blinding); treatment (details, details of placebo, qualification of therapist); results (outcome measures appropriate for condition, measures reliable and valid, follow-up time appropriate, withdrawals and non-responders); and statistics (appropriateness). Included studies were scored on the basis of validity criteria and classified as excellent (scoring 85% to 100%) indicating the data must be considered as valid and reliable; good (scoring 70% to 84%) indicating the data must be considered reliable but contains minor methodological errors without importance for the outcome; fair (scoring 60% to 69%) indicating medium methodological errors that were not likely to influence results significantly; and bad (scoring < 60%) indicating major methodological deficiencies which are likely to have influenced the outcome.

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?
The studies were combined in a narrative review.

How were differences between studies investigated?
Results are discussed in relation to validity scores.

Results of the review
Fifteen RCTs (834 patients) were included.

Validity scores: 1 study scored > 85%; 5 studies scored between 70% and 84%; 3 studies scored between 60% and 69%; and 6 studies did not meet the criteria (scored < 60%).

11 out of the 15 studies were in favour of acupuncture. Four studies demonstrated no effect. All studies (6 studies, N = 344 patients) scoring > 70% on validity criteria favoured acupuncture.

Acupuncture used as analgesia in extraction of teeth: total of 7 studies including 4 studies (N = 179 patients) that met validity criteria (> 60%): 3 of the valid studies favoured acupuncture, one did not. No difference in treatment was found between these 4 studies.

Acupuncture in the treatment of facial pain and temporomandibular dysfunction: 4 papers met the criteria with only minor methodological flaws (N = 285 patients). All demonstrated a positive effect of acupuncture.

Authors’ conclusions
The value of acupuncture as an analgesic must be questioned. The effect of acupuncture in treating facial pain and temporomandibular dysfunction seems real and acupuncture could be a valuable alternative to orthodox treatment.

CRD commentary
The aim of the review and inclusion criteria are stated. The literature search included several databases with retrieval of papers in several languages. Reasons are given for the exclusion of some studies. Validity was assessed using pre-defined criteria.

The aim of the review is stated to be a review of the validity of published papers yet the conclusion refers to the efficacy of treatment and not to the validity. No details are given of the methods used to select primary studies, assess validity and extract data. Fuller details of the primary studies would have been welcome such as diagnostic criteria for included patients, characteristics of participants, and methods used to determine outcomes. Results are not stated in terms of effect size or statistical significance. Further discussion of the effect of criteria used to assess validity on results may have been helpful. Studies included were heterogeneous in terms of patients and controls used. The reliability of quality assessment of studies is questionable since only one reviewer was involved and the quality items were often scored subjectively. It is therefore possible that the quality assessment itself was biased.

Without fuller details of primary studies it is not possible to consider the author’s conclusion supported.

Implications of the review for practice and research
Practice: The author questions the practical value of acupuncture as an analgesic in dentistry when modern techniques are cheap, easy to administer, and work reliably within minutes.

Research: The author considers that more studies are required of the use of acupuncture in treating facial pain and temporomandibular joint dysfunction.
Bibliographic details

PubMedID
9680898

Indexing Status
Subject indexing assigned by NLM

MeSH
Acupuncture Analgesia; Acupuncture Therapy; Anesthesia, Dental /methods; Dental Care /methods; Dental Research /standards; Facial Pain /therapy; Outcome Assessment (Health Care); Pain, Postoperative /therapy; Publications /standards; Randomized Controlled Trials as Topic /standards; Reproducibility of Results; Temporomandibular Joint Dysfunction Syndrome /therapy; Toothache /therapy

AccessionNumber
11998003869

Date bibliographic record published
29/02/2000

Date abstract record published
29/02/2000

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.