Efficacy of acupuncture for health conditions in children: a review
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CRD summary
This review concluded that acupuncture appeared promising for a variety of childhood conditions and large well-designed trials were needed to enhance the evidence base. Although the conclusion on the promise of acupuncture should be treated with some caution, the authors’ statements on the need for well-designed trials are likely to be valid across the conditions studied.

Authors' objectives
To evaluate current research on acupuncture use in children.

Searching
PubMed, CINAHL and PsycINFO databases and Ovid were searched using keywords detailed in the paper. Search dates were not reported. Studies needed to be in English and be published in peer-reviewed journals from 1990 onwards.

Study selection
The review defined children as those up to and including 20 years of age. Eligible study designs were randomised controlled trials (RCTs), controlled trials, convenience samples or repeated measure designs. Acupuncture was defined as use of needles, bleeding, laser or electrical stimulation and pressure to acupuncture points. Studies that included acupuncture as only part of a treatment were excluded.

The authors stated neither how the papers were selected for the review nor how many reviewers performed the selection.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
The authors stated neither how data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
The authors conducted a narrative synthesis that grouped studies by complaint: pain; postoperative nausea and vomiting; nocturnal enuresis; laryngospasm/stridor; neurological disorders; and miscellaneous.

Results of the review
Twenty nine studies were included in the review (n=1,633): 23 RCTs and six based on convenience samples.

Pain management (one RCT and one convenience sample, n=61): One small RCT found a significant clinical reduction in frequency and intensity of migraines after 10 weekly sessions in the true acupuncture group with no corresponding change in the sham acupuncture group. A second study, based on a convenience sample, found that six weekly sessions of individualised acupuncture with a simultaneous 20 minute hypnosis session led to a significant reduction in pain and improvement in daily functioning following treatment.

Postoperative nausea and vomiting (12 RCTs, n=1,007): Although some studies showed no significant differences between treatment groups, overall it could be concluded that acupuncture could be effective in reducing postoperative nausea and vomiting and may have fewer side effects than current antiemetic medications.

Nocturnal enuresis (three RCTs and two convenience samples, n=155): Overall, acupuncture was found to be beneficial, but samples were small and there was variation between studies in method of acupuncture. None of the
studies reported negative side effects relating to acupuncture.

Laryngospasm/stridor (two RCTs, n=136): Both studies used an acupuncture bloodletting technique with children who underwent post-tracheal extubation. One study found a lower incidence of stridor in the acupuncture group compared to controls and one a higher incidence. The differing results could be explained by differing ages of the children, variation in study methods and/or different anaesthesia.

Neurological disorders (two RCTs and two convenience samples, n=110): One RCT and one convenience sample used tongue acupuncture and showed improvement in drooling in one study and in gross motor function, self care and mobility in a second study of children with cerebral palsy. Both studies mentioned initial crying with fear and possible pain during the first few sessions. A further study showed mixed effects in a small sample that investigated effects of acupuncture on skin temperature for children with major neurological disorders and cold feet. One RCT found that both acupuncture and osteopathy treatment arms reported more benefits than a waiting list control group.

Miscellaneous studies (three RCTs and one convenience sample, n=164): The findings of this group of studies indicated that acupuncture may be beneficial for a number of childhood problems and that sex differences in response to acupuncture may be worth investigation.

Authors' conclusions
The efficacy of acupuncture for a variety of childhood conditions appeared promising. Well-designed large-scale trials were needed to enhance the evidence base.

CRD commentary
This review had defined inclusion criteria for population, intervention and study design, but eligible outcomes were not prespecified. Searching was based on a small range of databases and only published English-language articles were eligible, which raised the possibility of publication and language biases. Studies may have been missed by running searches from 1990 only. Study quality was not assessed formally, although the authors discussed methodological limitations of the included studies. No details of procedures to minimise bias in study selection and data extraction processes (such as number of reviewers involved) were provided. Studies that included acupuncture as only part of a treatment were to be excluded, but at least one study appeared to include a combination of acupuncture and hypnosis. The conclusions on the promise of acupuncture for a variety of childhood conditions should be treated with some caution. However, the authors' statements on the need for well designed trials are likely to be valid across the conditions studied.

Implications of the review for practice and research
Practice: Not stated

Research: The authors stated that further studies were needed to make definitive statements on the safety of acupuncture. Further research that assessed parent and child acceptance of acupuncture was required. Studies with larger sample sizes were needed to validate the findings of the existing studies. More work on chronic pain was needed. Use of surveys to ascertain why parents took their children to acupuncturists may be used to inform further research topics.

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