P6 stimulation for the prevention of nausea and vomiting associated with cesarean delivery under neuraxial anesthesia: a systematic review of randomized controlled trials

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CRD summary
This review found inconsistent evidence for the efficacy of stimulation of the pericardium 6 (P6) Neiguan acupressure point to prevent intra- and post-operative nausea and vomiting in women undergoing a caesarean delivery. The authors’ cautious conclusions seem reliable based on the evidence presented.

Authors' objectives
To determine the efficacy of stimulation of the pericardium 6 (P6) Neiguan acupressure point for the prevention of nausea and vomiting associated with caesarean delivery.

Searching
MEDLINE, the Cochrane Central Register of Controlled Trials, Scopus and CINAHL were searched up to September 2007 without language restrictions. Search terms were reported. Reference lists of retrieved articles were also searched.

Study selection
Randomised controlled trials (RCTs) investigating the use of P6 stimulation for the prevention of intra- and post-operative nausea and vomiting in women undergoing caesarean delivery under neuraxial anaesthesia were eligible for inclusion. All the included trials evaluated P6 stimulation compared to the use of placebo bands. The P6 stimulation was delivered by bilateral acupressure (four trials), unilateral acupressure (one trial) and unilateral transcutaneous acupoint electrical stimulation (one trial). There was some variation in the delivery of the placebo treatment. The interventions in the control and treatment groups commenced between five minutes and 60 minutes before the induction of neuraxial anaesthesia. Treatment continued for up to 48 hours post-operatively.

Both authors reviewed the abstracts of the retrieved articles.

Assessment of study quality
Both reviewers independently read the included studies and assessed methodological quality using the 7-point modified Oxford scale. Discrepancies were resolved by discussion.

Data extraction
Data were collected on intra-operative and post-operative outcome measures including the incidence and severity of nausea and vomiting, the need for rescue antiemetics, and complete response to therapy (no nausea, vomiting or need for rescue antiemetics).

The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
The outcome data extracted were compared qualitatively in a narrative synthesis because of the clinical heterogeneity in the included trials.

Results of the review
Six RCTs (n=649) were included in the review. The minimum Oxford quality scale score was 4 and the maximum score recorded by two trials was 6 (from a possible 7). The studies were heterogeneous with regard to interventions, placebo band treatments and timing of treatment delivery.

Nausea: Of the five trials that reported on the incidence of intra-operative nausea, two reported a significant reduction
with the use of P6 stimulation. The remaining three trials reported no differences between the intervention and control groups. Of the four trials that reported data for post-operative nausea, only one trial reported a reduction in the incidence of post-operative nausea with P6 stimulation (3% compared to 43%, p<0.05).

Vomiting: there were no statistically significant differences in the incidence of intra-operative vomiting with P6 stimulation (five trials). Two trials reported a statistically significant reduction on post-operative vomiting with P6 stimulation.

Use of rescue medication: Of the four trials reporting on the need for rescue antiemetics during and after surgery, one trial reported a significant reduction in antiemetic requirement during surgery with P6 stimulation.

Complete response to therapy: the only study that reported data on the rate of intra-operative and post-operative complete response found no differences between the P6 stimulation and control groups for this outcome.

There were no statistically significant differences between the intervention and control groups for the other outcomes examined.

Authors' conclusions
Although some trials showed beneficial effects of P6 stimulation, this finding was not consistent. Clinical heterogeneity and inconsistent findings across all the included trials precludes drawing any definitive conclusions.

CRD commentary
This review had clearly stated inclusion criteria with respect to study design, participants and treatments. The authors searched relevant databases for published articles and non-English language articles were available for inclusion. There was no apparent attempt to locate unpublished material which means that relevant studies may have been missed. Steps were taken to minimise reviewer bias and errors in study selection and validity assessment but not reported for data extraction. Validity was assessed using an aggregate quality scoring system, but details of individual components were lacking. The authors' decision to synthesise the data narratively appeared justified in view of the clinical heterogeneity of the included trials. The review included a number of small trials which could be at risk of detecting a significant treatment effect by chance. This was generally a well conducted review but publication bias cannot be ruled out. The authors' cautious conclusions seem reliable based on the evidence presented.

Implications of the review for practice and research
Implications for practice: The authors did not state any implications for practice.

Implications for research: The authors stated that further large trials comparing different P6 modalities are needed and recommended investigation into reducing post-operative nausea and vomiting in patients with a previous history. The efficacy of both unilateral versus bilateral P6 stimulation and P6 stimulation in combination with other acupuncture points is yet to be established. In addition, the optimal duration of P6 stimulation is not yet known.

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