A meta-analysis of upright positions in the second stage to reduce instrumental deliveries in women with epidural analgesia

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CRD summary
This review assessed whether maintaining an upright position during the second stage of labour reduced instrumental deliveries amongst women receiving epidural anaesthesia. The authors concluded that there were insufficient data to assess the effectiveness and safety of the upright position and that further research is needed. The authors’ conclusions are appropriately cautious given the limited evidence available.

Authors' objectives
To assess whether maintaining an upright position during the second stage of labour reduces instrumental deliveries amongst women receiving epidural anaesthesia.

Searching
MEDLINE, EMBASE, CINAHL and the Cochrane CENTRAL Register were searched up to July 2003; the search terms were reported. The reference lists of published studies were also checked.

Study selection

Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion.

Specific interventions included in the review
Trials comparing upright with recumbent positions were eligible. An upright position was defined as standing, walking, kneeling, squatting, or sitting more than 60 degrees from the horizontal. In one included study, standing or walking for more than 30 minutes per hour was compared with being recumbent in bed or sitting in a chair. In the second study, walking, sitting in a chair or reclining in a semi-supine position was compared with being restricted in bed in supine, semi-supine or a lateral position.

Participants included in the review
Trials of women in the second stage of labour who had received epidural anaesthesia were eligible for inclusion. One study was of first-time pregnancies and the second was mixed parity.

Outcomes assessed in the review
The primary outcome of interest was instrumental delivery. The secondary maternal outcomes of interest were Caesarean section, length of the second stage, foetal malposition, perineal trauma, postpartum haemorrhage, adequacy of pain relief, satisfaction with care, and long-term outcomes such as urinary or faecal incontinence and dyspareunia. Infant outcomes were also of interest. Outcomes where more than 20% of participants were lost to follow-up were not considered.

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

Assessment of study quality
The studies were assessed for method of randomisation, adequacy of allocation concealment and the proportion of participants lost to follow-up.

Two investigators independently assessed study quality and any differences were resolved through discussion.
Data extraction
Two investigators independently extracted the data. The authors of the included studies were contacted for clarification, when necessary. Relative risks (RRs) and 95% confidence intervals (CIs) were calculated from intention-to-treat data for each outcome in the individual studies.

Methods of synthesis
How were the studies combined?
The studies were pooled in a fixed-effect meta-analysis.

How were differences between studies investigated?
Heterogeneity was investigated using the chi-squared test. Differences between the studies were described.

Results of the review
Two RCTs (n=291) were included.

In both studies, allocation concealment was through the use of envelopes and 10% or less of participants were lost to follow-up.

There was a reduction in the risk of instrumental delivery (RR 0.77, 95% CI: 0.46, 1.28) and Caesarean section (RR 0.57, 95% CI: 0.28, 1.16) for women in upright positions compared with recumbent positions, though neither of these were statistically significant. The test for statistical heterogeneity was not significant. The other outcomes were available for individual studies only or not at all. Both studies reported a statistically significant reduction in labour duration associated with upright positions.

Authors’ conclusions
There were insufficient data to show a significant benefit from, or to assess the safety of, upright positions in the second stage of labour for women receiving epidural analgesia, though the sizes of the reductions in instrumental and Caesarean delivery warrant further research.

CRD commentary
There was a clearly stated review question and several appropriate databases were searched. However, only published studies were sought and it was unclear whether language restrictions were applied, therefore relevant studies might have been missed. Appropriate methods were used to reduce error and bias in the quality assessment and data extraction, though it was unclear how the study selection process was conducted. Despite there being some variation between the two studies in the population and how upright position was defined, the decision to pool the studies seems reasonable. The authors’ conclusions are appropriately cautious given the limited evidence available.

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

Research: The authors stated that a high-quality RCT is required to assess the impact, on maternal and infant outcomes, of upright positioning during the second stage of labour amongst women receiving epidural anaesthesia.

Bibliographic details
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.