Correction of nonvertex presentation with moxibustion: a systematic review and metaanalysis


CRD summary
The authors concluded that moxibustion may be more effective than observation or postural methods alone for correcting non-vertex presentation and did not appear to increase complications. The authors suggested the findings should be interpreted cautiously due to heterogeneity between studies. In view of suboptimal study quality and small sample sizes (especially for safety outcomes) such caution is well advised.

Authors' objectives
To assess the effectiveness and safety of moxibustion for correcting non-vertex foetal presentation.

Searching
MEDLINE, CINAHL, Cochrane Database of Systematic Reviews, Excerpta Medica, AMED, Chinese Biomedical Database, Chinese Medical Current Contents, Chinese National Knowledge Infrastructure, VIP Information and Wanfang were searched to June 2007 without language restrictions. Search start dates varied across sources and spanned 1980 to 1992. Search terms were reported. Conference proceedings were excluded.

Study selection
Randomised or semi-randomised controlled studies of the effects of moxibustion among women pregnant with a single fetus in non-vertex presentation were eligible for inclusion. Moxibustion could be delivered in combination another intervention. Studies were required to report foetal position after treatment or at birth. The review reported safety outcomes.

The gestational age of the foetus varied widely in the included studies. In all cases moxibustion was applied at acupuncture point BL67, either at home or in hospital. It was usually applied bilaterally once or twice for 20 to 30 minutes at varying frequencies (ranged from once or twice daily to once or twice weekly) for one to two weeks (where reported). In most studies moxibustion (with or without acupuncture and/or postural measures) was compared with no treatment or postural measures (such as knee-to-chest position). The main outcome measure in the review was the rate of versions to cephalic presentation, measured (where reported) at the conclusion of treatment. Safety outcomes included caesarean section, premature birth, low Apgar score and oxytocin use. All studies were set in either China or in Italy.

Studies were selected by two reviewers working independently. Disagreements were resolved by a third reviewer.

Assessment of study quality
Studies were graded A (adequate), B (unclear) or C (inadequate) for the following components of study validity: randomisation, allocation concealment, blinding, management of missing data and baseline comparability. Study quality was denoted as high (all items scored A), moderate (all items A or B) or low (one or more C items).

Studies were assessed by two reviewers working independently. Disagreements were resolved by a third reviewer.

Data extraction
Relative risks (RRs) and 95% confidence intervals (CIs) were calculated from event rates in the two groups of each study.

Data were extracted by two reviewers who worked independently. Disagreements were resolved by consensus.
Methods of synthesis
Studies were grouped by comparator (either no treatment/postural measures only or acupuncture). Data were combined using a random-effects model to calculate pooled relative risks and 95% CIs. Numbers needed to treat (NNT) were calculated. Statistical heterogeneity was assessed using the $X^2$ test and the $I^2$ statistic. Publication bias was assessed with a funnel plot. Subgroup analyses were conducted to examine the effects of gestational age (at least 32 weeks versus less than 32 weeks), setting (Asia versus Europe) and study quality.

Results of the review
Seven randomised controlled trials were included (n=1,127, range 26 to 260). Five studies were of moderate quality and two were low quality.

Moxibustion (with or without acupuncture and/or postural measures) was significantly more likely to result in cephalic presentation at the end of the treatment period than observation or postural measures alone (RR 1.36, 95% CI 1.17 to 1.58, NNT=5, 95% CI 4 to 7; six RCTs, n=1,087). There was significant heterogeneity for this finding ($X^2=0.02, I^2=64\%$). Moxibustion was also significantly more likely than acupuncture to result in cephalic presentation (RR 4.0, 95% CI 1.13 to 14.17; one RCT n=26).

Use of oxytocin for vaginal deliveries was significantly lower in the moxibustion group than the observation group (RR 0.26, 95% CI: 0.13 to 0.60; one RCT, n=161). No statistically significant differences were found between the groups for other safety outcomes.

No evidence of publication bias was found.

In subgroup analyses, among women with a gestational age of 32 weeks or more there was a significantly higher rate of cephalic presentation in the moxibustion group, without significant heterogeneity (RR 1.31, 95% CI 1.03 to 1.66, NNT=6, 95% CI 4 to 12; four RCTs, n=635). Other subgroup analyses reported significantly higher effects associated with the intervention among studies set in Asia and low-quality studies; these studies had significant statistical heterogeneity.

Authors' conclusions
Moxibustion may be more effective than observation or postural methods alone for correcting non-vertex presentation and did not appear to increase complications. These findings should be regarded cautiously due to heterogeneity between the studies.

CRD commentary
The objectives and inclusion criteria of the review were clear and relevant sources were searched for studies without language restriction. The exclusion of conference abstracts meant that the review was prone to publication bias, although a funnel plot showed no indication of this. Steps were taken to minimise the risk of reviewer bias and error by having more than one reviewer independently select studies, assess validity and extract data. Appropriate methods were used to combine the studies and assess statistical heterogeneity. Differences between studies were explored by subgroup analyses. As the authors noted, there was marked statistical heterogeneity. The comparison of the effectiveness of moxibustion versus acupuncture had very small sample numbers, as did all the safety analyses. No studies were designated high quality. The clinical relevance of review findings was uncertain as none of the available evidence clearly applied to foetal presentation at birth (as opposed to post-treatment). The authors suggested that their conclusions should be regarded cautiously due to heterogeneity between the studies. In view of suboptimal study quality and small sample sizes (especially for safety outcomes) such caution is well advised.

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

Research: The authors stated that future studies should aim to standardise the frequency and duration of moxibustion for non-vertex presentation and should control for relevant risk factors and for variables related to safety outcomes. Use of placebo controls should be considered.
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