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## **Moxibustion for correcting breech presentation: a systematic review and meta-analysis**

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### **Abstract.**

**Objectives:** To assess the effectiveness and safety of moxibustion for correcting breech presentation.

**Methods:** We searched 11 databases and 28 major Chinese traditional medicine journals from inception to February 2013. We included RCTs and QRCTs, with no language restrictions that compared moxibustion with other therapy. Cochrane risk-of-bias criteria and Physiotherapy Evidence Database scale were used to assess the methodologic quality of the trials.

**Results:** Twelve of 387 potentially relevant studies met our inclusion criteria. When compared moxibustion with other intervention, a meta-analysis showed a significant difference in favor of moxibustion for correcting breech presentation at delivery (RR 1.29, 95% CI 1.08 to 1.54,  $I^2=0$ ).

The same findings applied to the cephalic presentation after treatment (RR 1.42, 95% CI 1.28 to 1.58,  $I^2=66\%$ ). A post-hoc sensitivity analysis of six studies also showed favorable effects (RR 1.57, 95% CI 1.45 to 1.71,  $I^2=0\%$ ). With respect to safety, moxibustion resulted in decreased use of oxytocin.

Conclusion: Our systematic review and meta-analysis showed encouraging effects of moxibustion for correcting breech presentation. However, most trials, coupled with poor quality and high risk of bias, prevent us from drawing firm conclusions about the effectiveness and safety of moxibustion; therefore, due to several caveats, not conclusive.

**Key words:** Moxibustion; Breech presentation; Meta-analysis.

## **Introduction**

Moxibustion is a traditional Chinese medical intervention that uses the heat generated by burning herbal preparations containing *Artemisia vulgaris* (mug-wort) to stimulate acupuncture points [1]. It is claimed to have benefits for a wide range of conditions, such as stroke rehabilitation[2], pain[3], cancer care[4], ulcerative colitis[5], hypertension[6] osteoarthritis[7], constipation[8], child chronic cough[9] and breech presentation[10]. In China, moxibustion on Zhiyin (BL67) point, located on outer corner of the fifth toenail, has long been used to correct anomalous presentation of the fetus and is widely used to correct breech presentation in obstetrics [11-12]. Possible mechanisms of its effects on breech presentation is proposed to stimulate the production of placental oestrogens, change in prostaglandin levels, and promote the uterine contractility, which leads to a stimulation of fetal movements and a higher probability of version of the fetus [10, 12-14].

Before moxibustion on breech presentation can be recommended for routine clinical use, we require strong evidence from rigorous randomized clinical trials. Unfortunately, most studies are open clinical trials, neither blind to practitioner nor to subjects. In moxibustion trials, sham treatment should be given by adding insulation below the moxa pillar to prevent the transfer of heat from the moxa pillar to the patient [15]. The sham treatment looks similar to the real moxibustion treatment in its appearance and burning procedure; therefore, participants are able to smell the smoke or observe the burning moxa [15].

Four reviews assessing the effects of moxibustion for breech presentation have been published previously [16-19]. However, all four studies failed to include all of the relevant articles published [16-19], and some included intervention other than moxibustion [17]. We performed a systematic review and meta-analysis to critically evaluate the evidence of the clinical efficacy and safety from trials comparing moxibustion therapy with non-moxibustion therapy in patients with breech presentation.

## **Materials and methods**

### **Literature search**

With the help of a professional librarian, we conducted comprehensive literature searches of the following electronic databases: MEDLINE (1950 to February 2013), EMBASE (1980 to February 2013), Cochrane Library (1980 to February 2013), CINAHL (1982 to February 2013), AMED (1985 to February 2013), British Nursing Index (1993 to February 2013), Chinese Biomedical Literature Database (CBM; 1980 to February 2013), China National Knowledge Infrastructure (which includes the database China Academic Journals) (CNKI; 1980 to February 2013), VIP Information (VIP; 1980 to February 2013), Wanfang Data (WAN FANG; 1980 to February 2013), Sciencepaper Online (2006 to February 2013), and 28 major Chinese traditional medicine journals. We used the terms as follows: (moxibustion OR moxa\*) AND (breech presentation or labor presentation or abnormal foetal position or abnormal foetal presentation or podalic presentation or complementary medicine or alternative medicine). We also performed a hand search to identify any other articles. In an attempt to minimize the omission of potentially relevant trials, we also reviewed the reference lists of included articles and relevant reviews for

additional eligible studies. Both published and unpublished studies were considered. No language restrictions were imposed.

### **Selection of studies**

Two reviewers (Y.J.H, Z.Q.H.) independently screened all titles, and abstracts when available, of potentially relevant studies first, then they examined the full text if the study met the following inclusion criteria: (a) randomized controlled trials or quasi-randomized controlled trials; (b) comparison of moxibustion with other therapy; and (c) no restriction on the race or gestation of participants with a singleton breech presentation. Disagreements between the two reviewers were resolved by discussion with a third author (S.Z.R.) to achieve consensus.

### **Outcome measures**

In this article, we present the results for the cephalic presentation at birth, and after treatment. In addition, use of oxytocin, apgar scores less than 7 at 5 minutes, cesarean section, preterm delivery, premature rupture of membranes, intrauterine fetal death, placental abruption, and cord blood pH less than 7.1 were also recorded.

### **Data extraction**

Two authors (S.Q. and H.C.) independently extracted data from eligible studies using a predesigned extraction sheet and another author (W.D.) verified the extracted data. They settled all any discrepancies through discussion. A third review author (W.D.) was consulted if a consensus could not be reached. The extracted data included demographic data, clinical characteristics of the study groups, quality of trial design, inclusion and exclusion criteria, interventions, results and adverse events. If the required information was not available in the included studies, we contacted the original authors by email.

### **Quality of the studies**

The Cochrane Risk of Bias Tool [20] and the PEDro (Physiotherapy Evidence Database) scale [21] were used to assess methodological quality of the trials. Two of us (Y.J.H. and Z.Q.H.) were independently involved in quality assessment. All discrepancies were resolved by consensus with the other author (L.M).

### **Statistical analysis**

Data were pooled using the random-effects model, and treatment effect was expressed as a relative risk. Heterogeneity was evaluated using Cochrane's Q-test and the  $I^2$  statistic, and it was assumed if the  $p$  value was less than 0.10 in the  $\chi^2$  test and the  $I^2$  value was above 75% [22]. Subgroup analysis was conducted to identify and explain heterogeneity. Where possible, funnel plot was used to assess publication bias. We also performed post hoc sensitivity analysis to test the robustness of the overall effect.

## **Results**

### **Study description**

We identified 387 potentially relevant articles. Twelve studies, involving a total of 2111 participants, met our inclusion criteria (Figure 1). Six trials were RCTs [23-25, 30, 32-33], while the other six studies were QRCTs [26-28, 31, 34]. The characteristics of the 12 trials are summarized in Table 1. Of those, three studies were from western countries and published in English [24, 25, 30], while the other nine trials were from China, one published in English[23] and eight in Chinese[26-29, 31-34].

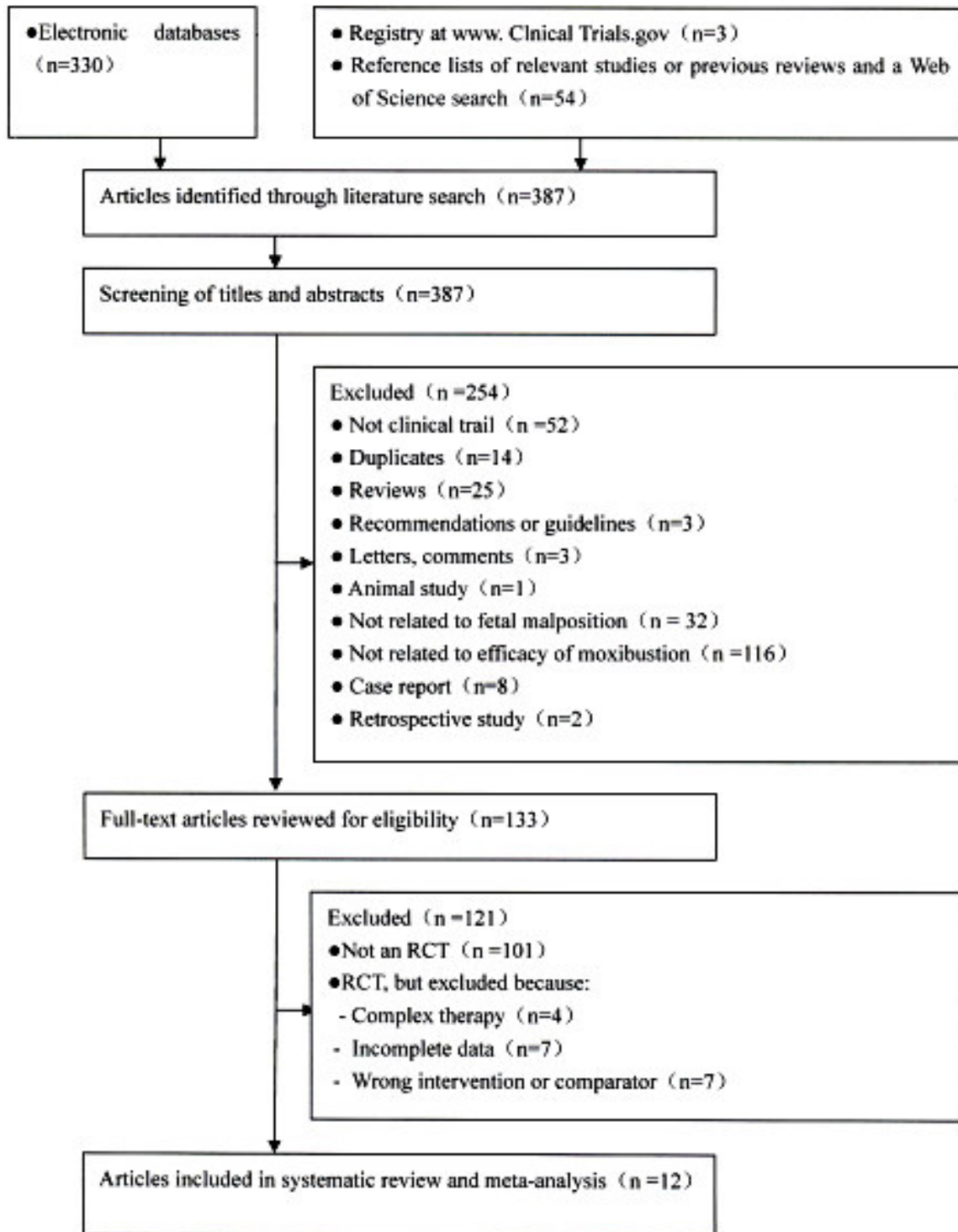
Four trials compared moxibustion therapy with observation[23-24], usual care[25,30]. Four studies compared moxibustion therapy with postural techniques[27-28, 33-34]. The other studies compared moxibustion plus postural technique therapy with postural measures[26, 29, 31-32].

### **Study quality**

The mean PEDro score was 4.5 (standard deviation [SD] 3), with a range of two to nine points (Table 2). The Cochrane risk of bias was presented in Figure (2A, 2B). Six RCTs reported appropriate sequence generation [23-25, 30, 32, 33]. Of those, five trials reported details about allocation concealment [23-24, 30, 33]. All participants applied moxibustion therapy themselves at home[23-25] or by practitioners in hospital[26, 30, 33, 34] in seven trials, while the remaining five

studies did not state who applied the techniques [27-29, 31, 32], so it was not feasible to blind the participant or the therapist. The review authors deem that the outcomes and their measurements were not likely to be influenced by lack of blinding. Thus, all study scored zero with PEDro score of blinding, but had low risk of bias with Cochrane Risk of Bias Tool. The outcome assessor was blinded in only one study [24], and it was not clear whether the analyst was blinded to groups [23-34]. The six QRCTs with a high risk of bias [26-29, 31, 34] got a low PEDro score (mean score 2) compared with the other trials that had a low risk of bias with higher PEDro scores (mean score 7) [23-25, 30, 32-33].

Figure 1 Flow of study selection



## Outcome measures

Twelve included trials assessed the effects of moxibustion (alone or in association with postural techniques) compared with observation alone or postural measures on cephalic presentation at delivery [23, 25, 30], and after treatment [23-24, 26-29, 31-34] (Figure 3). Moreover, four of the twelve studies involved the other outcomes of safety on use of oxytocin[23], apgar scores less than 7 at 5 minutes [23,25,30], cesarean section[23,25,30], preterm delivery[23,25] premature rupture of membranes[23-25], intrauterine fetal death[23], placental abruption[24], and cord blood pH less than 7.1[30] (Figure 4).

Our meta-analysis of three studies[23-25, 30], involving 467 women, yielded encouraging effects in favor of moxibustion on cephalic presentation at delivery (excluding ECV) (RR 1.29, 95% CI 1.08 to 1.54,  $I^2 = 0$ ) (Figure 3). The same findings applied to the cephalic presentation after treatment, when compared moxibustion (alone or in combination with postural techniques) with observation[23-24], postural techniques[27-28, 33-34], postural measures[26, 29, 31-32] (RR 1.42, 95% CI 1.28 to 1.58,  $I^2=66\%$ ) (Figure 3). A subgroup analysis that excluded four studies with a high risk of bias [24, 27-28, 32] showed significant effect of moxibustion (RR 1.57, 95% CI 1.45 to 1.71,  $I^2=0\%$ ) (Figure 3).

Four trials examined the safety of moxibustion for correcting breech presentation [23-25, 30] (Figure 4). One study reported significant differences in favor of a reduced use of oxytocin in the treatment group[23](RR 0.28, 95% CI 0.13 to 0.60) (Figure 4). No other statistically significant differences were found in the comparison between moxibustion treatment group and no-moxibustion group on apgar scores less than 7 at 5 minutes, cesarean section, preterm delivery, premature rupture of membranes, intrauterine fetal death, placental abruption, and cord blood pH less than 7.1 (Figure 4).

## Adverse events

Three trials reported the adverse events in the moxibustion group [23-25]: one reported two cases of premature deliveries at 37 weeks and four cases of premature rupture of the membranes after treatment [23], another noted two cases of premature deliveries and one case of bleeding at week 37 after ECV, because of excessive pressure on the rear of the placenta [24], the third trial recorded two cases of premature deliveries and three cases of prelabour rupture of the membranes[25].

## Comment

Twelve studies have tested the effectiveness and safety of moxibustion for correcting breech presentation. Nine (involving three RCTs and six QRCTs) of 12 trials included in our study reported that moxibustion was effective. However, the paucity of these studies with small sample size, poor quality and high risk of bias rendered those studies less reliable.

There are several possible explanations, which might account for these findings. First, the existing studies may have been inadequately designed. For instance, six trials failed to report appropriate sequence generation [26-29, 31, 34]; seven studies did not state details about allocation concealment [26-29, 31-32, 34]; and seven studies did not describe the outcomes of two groups at baseline [26-29, 31, 33-34]. Second, frequency and duration may have been suboptimal with the range from once or twice weekly to once or twice daily. Third, most studies were conducted in China and published in Chinese language, where most papers we found reported positive results, with only a few presenting negative results<sup>35</sup>. Finally, some noncontrolled explicative variables may influence the risk involved in the trials, such as age, parity, week of gestational age in which the intervention is performed.

Previous reviews did not include all relevant trials, and some were not systematic. Vas and colleagues[18], involving 81 relevant studies, found moxibustion to be beneficial in correcting breech presentation, although some considerable heterogeneity was detected. Li and colleagues[16], searching 148 related studies, including both RCTs and controlled clinical trials and found that moxibustion was more effective than no treatment in correcting breech presentation. Liu and colleagues[17], retrieving 145 relevant potential articles, found that acupuncture and moxibustion

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## **Acupuncture induced Nestin expression in the intervention of intracerebral hemorrhage rats**

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### **Abstract**

This study evaluated the effect of acupuncture on the Nestin expression in the basal ganglia hemorrhage in rats, using immunostaining, Western Blot. The positive products of Nestin protein in the acupuncture trial increased greatly more than that of control group. Therefore, acupuncture has important implications in cerebral protection and could promote neural stem cell regeneration in cases of cerebral hemorrhage.

**Keywords:** Nestin,; Cerebral hemorrhage; Acupuncture

### **1. Introduction**

Intracerebral hemorrhage is an important public health problem leading to high rates of death and disability in adults<sup>1</sup> and no clinically proven treatment strategy is available to date<sup>2</sup>. Cerebrovascular diseases seriously affect the patient's quality of life, to become a heavy burden to the society and to their families. Acupuncture, has been applied to the clinical and experimental cerebral hemorrhage<sup>3-5</sup>. Nowadays, this traditional Chinese medical technique has become very popular worldwide as a complementary medicine. For example, using acupuncture therapy neurological diseases, heart disease, neuropathic pains, Cancer, asthma<sup>6-9</sup>. Although Clinical studies have shown that acupuncture can promote the recovery of neurological function in patients with cerebral hemorrhage, reduce muscle tension, improve daily living skills<sup>10</sup>, acupuncture for acute cerebral hemorrhage neural remodeling mechanism is still not clear. Nestin which is a intermediate filament protein specifically expressed in neuroepithelial stem cells; may play a role in neural cell differentiation. we observed the expression of the Nestin protein in rat brain tissue by scalp acupuncture stimulation Baihui (GV20) and Qubin (GB7) of acute cerebral hemorrhage in rats, and explored the mechanism of the head nerve function after brain hemorrhage remodeling.

### **2. Materials and methods**

#### **2.1 Animals**

One hundred seventy-six healthy male Wistar rats, each weighing 300~350g, were used in this study. The animals were provided by the Beijing Vital River Laboratory Animal Technology Co., Ltd. These rats were randomly divided into three groups: Model group, acupuncture group (model + acupuncture group), each groups of 80 rats (50 rats were used for light microscopy and immunohistochemistry, another 30 rats used for Western blot). Each group were randomly divided into five subgroups: 6h, 1d, 2d, 3d, 7d, and each subgroup contains 16 rats.