# Pain management for women in labour: an overview of systematic reviews

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Epidural and spinal analgesic techniques are the gold standards for pain relief during labour and delivery. However, they may be associated with an increased risk of instrumental vaginal delivery and caesarean section. Hence, epidurals for labour pain should be provided only settings that are equipped for instrumental delivery and emergency caesarean section. Non-pharmacological interventions (e.g. immersion in water, relaxation, acupuncture, massage) appears to be safe and may be effective and applied in under-resourced settings and or at first stage of labour.

### RHL Commentary by Amedee Peret FJ

### 1. INTRODUCTION

Childbirth is a painful experience for almost all women. The pain experienced during labour has multiple physiological and psychosocial dimensions and its intensity can vary greatly from one woman to another (1). Labour pain involves complex neurobehavioural responses to allogeneic stimuli and provides a personal and unique experience to individual women. The cause–effect relationship in labour pain does not always correspond to a clinical response; what matters is to understand the pain felt by the pregnant woman and to provide pain relief (2).

In recent years, in Brazil, many pregnant women are increasingly resorting to a scheduled caesarean section in order to avoid labour pain (2). Most women in labour request pain relief and various pharmacological and non-pharmacological interventions are used for this purpose (1). However, no single universal method of managing labour pain exists which fits all circumstances and meets all parturient needs (3). The totality of evidence from randomized controlled trials of interventions for pain management in labour has never been assembled before in a systematic and comprehensive way. This Cochrane review (4) does that as it summarizes the evidence from other Cochrane and non-Cochrane systematic reviews on the efficacy and safety of non-pharmacological and pharmacological interventions to manage pain during labour.

### 2. METHODS OF THE REVIEW

The overview provides a coherent summary of the totality of evidence without the need to access many individual systematic reviews. The search for systematic reviews was comprehensive, assessment of the quality of included trials was adequate, and the results are presented clearly and didactically in three categories (see below). In this overview the authors included all published Cochrane systematic review of randomized controlled trials that had studied the management of pain during labour. The authors searched: the Database of Abstracts of Reviews of Effects (The Cochrane Library 2011, Issue 2 of 4) for Cochrane reviews and MEDLINE (1966 to 31 May 2011) and EMBASE (1980 to 31 May 2011) for non-Cochrane reviews. They included non-Cochrane systematic reviews only if a Cochrane review was unavailable and if the non-Cochrane review met the strict selection criteria (use of a systematic approach, inclusion of randomized controlled trials and assessment of the methodological quality of the included clinical trials). The two review authors independently assessed the overall quality of the evidence presented in the included reviews by examining the methods used for assessing the risk of bias of the individual included studies, using the “assessment of multiple systematic reviews” (AMSTAR) measurement tool.

### 3. RESULTS OF THE REVIEW

A total of 15 Cochrane systematic reviews (involving 257 trials) were identified by the Trials Search Co-ordinator of the Cochrane Pregnancy and Childbirth Group. In addition, the authors included three non-Cochrane reviews involving 55 trials. Overall, only 41% of the included studies had compared the intervention with placebo or no treatment, and 18% of all included studies had compared an intervention with a different type of intervention. The number of trials and participants included in the various contributing reviews varied considerably, from two studies involving 535 women in the aromatherapy review, and four studies involving 201 women in the biofeedback review, through to 57 studies with more than 7000 participants in the parenteral opioids review. Another important issue was the between-trial variations in use of different outcome measures, particularly for the assessment of pain and in its relief as well as some important outcomes not been assessed in the trials, such as neonatal behaviour and its

influence on breast-feeding (only two out of 57 trials of opiates reported breast-feeding as an outcome). The authors categorized the interventions into three categories: (i) " What works"; (ii) "What may work"; and (iii) "Insufficient evidence to make a judgement".

### 3.1 What works

Considerable evidence from large placebo-controlled trials and comparative studies suggests that epidurals (including combined spinal epidurals) and inhaled analgesia (more limited evidence) are effective for managing pain during labour, compared with placebo and other methods. However, these interventions are not without adverse effects, including increased risk of instrumental vaginal birth and caesarean sections for non-reassuring fetal status (epidurals).

### 3.2 What may work

In this case, the evidence was limited to single trials. There is some evidence to suggest that immersion in water, relaxation, acupuncture, massage and local anaesthetic nerve blocks or non-opioid drugs may improve management of labour pain, with few adverse effects. These interventions relieved pain and improved satisfaction with pain relief (immersion, relaxation, acupuncture, local anaesthetic nerve blocks, non-opioids) and childbirth experience (immersion, relaxation, non-opioids) when compared with placebo or standard care. Relaxation was associated with fewer assisted vaginal births and acupuncture was associated with fewer assisted vaginal births and caesarean sections.

### 3.3 Insufficient evidence

There was insufficient evidence to make judgements on whether hypnosis, biofeedback, sterile water injection, aromatherapy, TENS, or parenteral opioids are more effective than placebo or other interventions for pain management in labour.

## 4. DISCUSSION

### 4.1 Applicability of the results

Neuraxial analgesic techniques are the gold standards for pain relief during labour and delivery. However, the available evidence suggests that neuraxial analgesia during labour may be associated with an increased rate of instrumental vaginal delivery and caesarean section. Therefore, epidurals for labour pain should be provided only settings that are equipped for instrumental delivery and emergency caesarean section.

In this overview non-pharmacological interventions appears to be safe and may be effective and applied in under-resourced settings and or at first stage of labour. Whether non-pharmacological interventions reduce or increase the need for neuroaxial analgesia remains to be elucidated in randomized trials (1).

### 4.2 Implementation of the intervention

Pain relief during labour is desired by many women in labour and contributes immensely to their satisfaction with the experience of childbirth. Some studies have shown that when women are offered analgesia during labour, they report greater satisfaction with their overall birth experience (3). Conversely, the awareness and attitudes towards labour pain and labour pain relief in antenatal women are not clearly known, particularly in developing countries. A survey with 100 parturients in Chennai, India, found that only half of the participants were in favour of labour pain being relieved, but even fewer (18/51, 35.29%) could state the benefits of relieving pain and stress. Hence, only 23/100 (23%) women reported any plans to use analgesia during labour (5).

In another survey of maternal health-care providers in Nigeria, the respondents showed a positive attitude to pain relief during labour, despite the fact that most women in the country go through labour without the benefit of analgesia. There exists a gap between provider attitudes to pain relief during labour and provision of pain relief during labour, with many providers having no genuine reason for not offering pain relief during labour (3). Even in developed countries the use of epidural during labour does not exceed 60% of singleton term deliveries (6). So we have two key strategies: (i) antenatal childbirth education; and (ii) evidence-based education for health-care providers on pain relief during labour. This overview provides clear and concise evidence-based information on this topic. However, there remain gaps in the research evidence and some of the evidence presented in this overview has limitations, except for epidurals.

Non-pharmacological interventions can be applied in under-resourced settings, despite the lack of high-quality evidence because they appear to be safe for both the mother and the baby and are associated with a high level of maternal satisfaction with childbirth. Implementation of the interventions must be done together with improvements in antenatal childbirth education and health-care provider training. Widespread use of neuroaxial analgesia (epidural, combined analgesia) is costly and must be provided by personnel trained in such methods and in assisted vaginal delivery and emergency caesarean section.

### 4.3 Implication for research

Further trials are needed, particularly on non-pharmacological methods of pain management. Although popular, there is a lack of robust evidence on efficacy and safety of the some of the non-pharmacological methods. All further trials should also evaluate neonatal behaviour and its influence on breast-feeding, caesarean section and assisted vaginal delivery rates and maternal satisfaction with the childbirth xperience. In order to minimize the chance of bias in interpreting the data, it`s also necessary to evaluate these methods in subgroups such as spontaneous labour versus induced labour, primiparous versus multiparous, term versus preterm birth, continuous support in labour versus no continuous support (5).

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