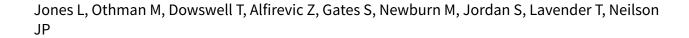


Cochrane Database of Systematic Reviews

Pain management for women in labour: an overview of systematic reviews (Review)



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[Overview of Reviews]

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

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ABSTRACT

Background

The pain that women experience during labour is affected by multiple physiological and psychosocial factors and its intensity can vary greatly. Most women in labour require pain relief. Pain management strategies include non-pharmacological interventions (that aim to help women cope with pain in labour) and pharmacological interventions (that aim to relieve the pain of labour).

Objectives

To summarise the evidence from Cochrane systematic reviews on the efficacy and safety of non-pharmacological and pharmacological interventions to manage pain in labour. We considered findings from non-Cochrane systematic reviews if there was no relevant Cochrane review.

Methods

We searched the Cochrane Database of Systematic Reviews (*The Cochrane Library* 2011, Issue 5), The Cochrane Database of Abstracts of Reviews of Effects (*The Cochrane Library* 2011, Issue 2 of 4), MEDLINE (1966 to 31 May 2011) and EMBASE (1974 to 31 May 2011) to identify all relevant systematic reviews of randomised controlled trials of pain management in labour. Each of the contributing Cochrane reviews (six new, nine updated) followed a generic protocol with 13 common primary efficacy and safety outcomes. Each Cochrane review included comparisons with placebo, standard care or with a different intervention according to a predefined hierarchy of interventions. Two review authors extracted data and assessed methodological quality, and data were checked by a third author. This overview is a narrative summary of the results obtained from individual reviews.

Main results

We identified 15 Cochrane reviews (255 included trials) and three non-Cochrane reviews (55 included trials) for inclusion within this overview. For all interventions, with available data, results are presented as comparisons of: 1. Intervention versus placebo or standard care; 2. Different forms of the same intervention (e.g. one opioid versus another opioid); 3. One type of intervention versus a different type of intervention (e.g. TENS versus opioid). Not all reviews included results for all comparisons. Most reviews compared the intervention with placebo or standard care, but with the exception of opioids and epidural analgesia, there were few direct comparisons between different



forms of the same intervention, and even fewer comparisons between different interventions. Based on these three comparisons, we have categorised interventions into: "What works", "What may work", and "Insufficient evidence to make a judgement".

WHAT WORKS

Evidence suggests that epidural, combined spinal epidural (CSE) and inhaled analgesia effectively manage pain in labour, but may give rise to adverse effects. Epidural, and inhaled analgesia effectively relieve pain when compared with placebo or a different type of intervention (epidural versus opioids). Combined-spinal epidurals relieve pain more quickly than traditional or low dose epidurals. Women receiving inhaled analgesia were more likely to experience vomiting, nausea and dizziness.

When compared with placebo or opioids, women receiving epidural analgesia had more instrumental vaginal births and caesarean sections for fetal distress, although there was no difference in the rates of caesarean section overall. Women receiving epidural analgesia were more likely to experience hypotension, motor blockade, fever or urinary retention. Less urinary retention was observed in women receiving CSE than in women receiving traditional epidurals. More women receiving CSE than low-dose epidural experienced pruritus.

WHAT MAY WORK

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. Evidence was mainly limited to single trials. 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 caesarean sections.

INSUFFICIENT EVIDENCE

There is insufficient evidence to make judgements on whether or not hypnosis, biofeedback, sterile water injection, aromatherapy, TENS, or parenteral opioids are more effective than placebo or other interventions for pain management in labour. In comparison with other opioids more women receiving pethidine experienced adverse effects including drowsiness and nausea.

Authors' conclusions

Most methods of non-pharmacological pain management are non-invasive and appear to be safe for mother and baby, however, their efficacy is unclear, due to limited high quality evidence. In many reviews, only one or two trials provided outcome data for analysis and the overall methodological quality of the trials was low. High quality trials are needed.

There is more evidence to support the efficacy of pharmacological methods, but these have more adverse effects. Thus, epidural analgesia provides effective pain relief but at the cost of increased instrumental vaginal birth.

It remains important to tailor methods used to each woman's wishes, needs and circumstances, such as anticipated duration of labour, the infant's condition, and any augmentation or induction of labour.

A major challenge in compiling this overview, and the individual systematic reviews on which it is based, has been the variation in use of different process and outcome measures in different trials, particularly assessment of pain and its relief, and effects on the neonate after birth. This made it difficult to pool results from otherwise similar studies, and to derive conclusions from the totality of evidence. Other important outcomes have simply not been assessed in trials; thus, despite concerns for 30 years or more about the effects of maternal opioid administration during labour on subsequent neonatal behaviour and its influence on breastfeeding, only two out of 57 trials of opioids reported breastfeeding as an outcome. We therefore strongly recommend that the outcome measures, agreed through wide consultation for this project, are used in all future trials of methods of pain management.

PLAIN LANGUAGE SUMMARY

Pain management for women in labour - an overview

Women's experience of pain during labour varies greatly. Some women feel little pain whilst others find the pain extremely distressing. A woman's position in labour, mobility, and fear and anxiety or, conversely, confidence may influence her experience of pain. Several drug and non-drug interventions are available, and in this overview we have assessed 18 systematic reviews of different interventions used to reduce pain in labour, 15 of these being Cochrane reviews.

Most of the evidence on non-drug interventions was based on just one or two studies and so the findings are not definitive. However, we found that immersion in water, relaxation, acupuncture and massage all gave pain relief and better satisfaction with pain relief. Immersion and relaxation also gave better satisfaction with childbirth. Both relaxation and acupuncture decreased the use of forceps and ventouse, with acupuncture also decreasing the number of caesarean sections. There was insufficient evidence to make a judgement on whether or not hypnosis, biofeedback, sterile water injection, aromatherapy, and TENS are effective for pain relief in labour.



Overall, there were more studies of drug interventions. Inhaled nitrous oxide and oxygen (Entonox®) relieved pain, but some women felt drowsy, nauseous or were sick. Non-opioid drugs (e.g. sedatives) relieved pain and some gave greater satisfaction with pain relief than placebo or no treatment, but satisfaction with pain relief was less than with opioids. Epidurals relieved pain, but increased the numbers of births needing forceps or ventouse, and the risk of low blood pressure, motor blocks (hindering leg movement), fever and urine retention. Combined spinal-epidurals gave faster pain relief but more women had itching than with epidurals alone, although urinary retention was less likely to be a problem. Local anaesthetic nerve blocks gave satisfaction but caused side effects of giddiness, sweating, tingling, and more babies had low heart rates. Parenteral opioids (injections of pethidine and related drugs) are less effective than epidural but there was insufficient evidence to make a judgement on whether or not they are more effective than other interventions for pain relief in labour.

Overall, women should feel free to choose whatever pain management they feel would help them most during labour. Women who choose non-drug pain management should feel free, if needed, to move onto a drug intervention. During pregnancy, women should be told about the benefits and potential adverse effects on themselves and their babies of the different methods of pain control. Individual studies showed considerable variation in how outcomes such as pain intensity were measured and some important outcomes were rarely or never included (for example, sense of control in labour, breastfeeding, mother and baby interaction, costs and infant outcomes). Further research is needed on the non-drug interventions for pain management in labour.