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New and updated Cochrane summaries for Midwifery

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Intramuscular and intravenous opioid pain relieving drugs in labour

Authors: Smith LA, Burns E, Cuthbert A

What is the issue?

We set out to determine the effectiveness, side effects and acceptability to women of different opioids (pain killers), the doses used and how they are given during labour. We were also concerned about the effects of the opioids on the baby in terms of its safety, alertness at birth and early feeding.

Uterine contractions cause pain during labour, particularly as they reach their peak. The pain lessens as the contraction goes and the uterus relaxes. As labour progresses the uterine contractions become stronger, more frequent and longer lasting; at the same time they become more painful. The strongest, most frequent, and most intense uterine contractions generally occur at the end of the first stage of labour as the cervix reaches full dilatation. The mother then has the urge to push or bear down, which assists the birth of the baby. The severity of the pain varies considerably from woman to woman, and is influenced by mental and emotional factors. For example, continuous support during labour can help women to cope with the pain and help with their overall satisfaction with the childbirth experience.

Why is this important?

In many maternity units, intramuscular injections of opioid drugs are widely used for pain relief in labour. Options for intravenous administrations, often controlled by the woman, may also be available. Injected opioids can make women drowsy and interfere with their ability to engage in decision making about their care. They may also experience nausea and vomiting. Opioids can increase variations in fetal heart rate during labour and depress breathing. A number of different opioid drugs are available. The increasing use of epidural analgesia in resource-rich countries means that opioids are now less likely to be the drugs of choice in these

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settings. Yet in many parts of the world and in midwifery-led settings epidural analgesia is not available, and injected opioids are still widely used. They are relatively inexpensive. It is not clear how effective these drugs are, which opioid is best, and how adverse effects (such as vomiting or sleepiness) or harm to women or their babies can be avoided. This review is an update of a review first published in 2010.

What evidence did we find?

We searched for trials on 11 May 2017. We included 70 studies though only 61 studies involving more than 8000 women contributed data to the review. All of the trials were conducted in hospital settings, on healthy women with uncomplicated pregnancies at 37 to 42 weeks' gestation. The trials compared an opioid (intramuscular or intravenous) with placebo (dummy treatment), no treatment, another opioid (or in three trials another medication or inhaled nitrous oxide) or transcutaneous electrical nerve stimulation (TENS) in 34 different comparisons. There were few opportunities to pool the findings, and for many outcomes only one trial contributed findings. The quality of the evidence was mainly assessed as low or very low for the outcomes of pain in labour and satisfaction with analgesia. Many of the studies included insufficient numbers of women to detect differences between groups.

What does this mean?

Overall, our findings indicate that opioids provided some pain relief during labour, although substantial proportions of women still reported moderate or severe pain. Opioid drugs were associated with nausea, vomiting and drowsiness, with different types of opioids causing different side effects. We did not have sufficient evidence to assess which opioid drug provided the best pain relief with the least adverse effects. Nor did we find clear evidence of adverse effects of opioids on the newborn. Maternal satisfaction with opioid analgesia appeared moderate although it was often unreported or reported in different ways. We did not have sufficient evidence to assess which opioid drugs women were most satisfied with.

In this review we did not examine the effectiveness and safety of intramuscular or intravenous opioids compared with other methods of pain relief in labour such as epidural analgesia. The review needs to be examined alongside related Cochrane reviews. As injected opioid drugs are so widely used it is important that more research is carried out so that women can make informed choices about pain relief.

Managing the end of childbirth (placenta delivery) with ergot alkaloid medications (e.g. ergometrine)

Authors: Liabsuetrakul T, Choobun T, Peeyananjarassri K, Islam Q

What is the issue?

The third stage of labour is the period from the birth of the baby to the expulsion of the placenta and membranes. As the placenta separates, there is inevitably some blood loss from the placental site until the muscles of the uterus clamp the blood vessels. Fit, healthy women cope with this normal blood loss without

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problems, but where poor nutrition, poor sanitation and limited or no access to clinical care are complications of pregnancy, severe morbidity and death can result from excessive blood loss at birth. This is very common in low- and middle-income countries. Active intervention, called 'active management of third stage', is recommended for the third stage of labour to reduce excess blood loss. Active intervention incorporates: 1) the administration of a uterotonic medication (medicine that stimulates contractions), given just before or just after the baby is born to help the muscles of the uterus contract; 2) cord clamping, performed approximately one to three minutes after birth; and 3) the use of controlled cord traction to deliver the placenta in settings where skilled birth attendants are available. This review of studies looked at the use of one group of uterotonic medications called ergot alkaloids (e.g. ergometrine) as part of this active management.

Why is this important?

A previous systematic review showed that the combination of ergometrine and oxytocin was associated with a significantly lower postpartum haemorrhage (PPH) rate (defined as blood loss of at least 500 mL) but a greater incidence of side-effects compared to the use of oxytocin alone. However, there was no review comparing ergometrine with no uterotonic medications and different routes or timings of administration for the prevention of PPH.

What evidence did we find?

We searched for evidence in September 2017 and included eight trials involving 4009 women receiving ergometrine by mouth (orally), into the muscle (intramuscularly (IM)) or into the vein (intravenously (IV)). Of eight trials, seven included studies were analysed in this updated review.

The evidence from the trials analysed suggests that ergot alkaloids may decrease mean blood loss, increase maternal haemoglobin levels in the blood, and may decrease both blood loss of at least 500 mL (PPH) and the use of therapeutic uterotonics. It is uncertain whether ergot alkaloids have any effect on numbers of women experiencing high blood loss of at least 1000 mL (severe PPH). The evidence also suggested that they may increase adverse effects such as increased blood pressure and pain after birth. They may make little or no difference between groups in terms of other adverse effects (vomiting, nausea, headache or eclamptic fit) and results were inconsistent on the risk of retained or manual removal of placenta. Most of the evidence came from trials that administered ergot alkaloids using the IM or IV route. There was only one small trial that looked at the use of oral ergot alkaloids and results were inconclusive. There were limited numbers of included studies and results between studies were not always consistent or precise. Overall quality of evidence across critical and important outcomes ranged from very low to moderate.

What does this mean?

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The IV or IM route, although it may reduce blood loss and PPH, was associated with the adverse effects of raised blood pressure and pain due to contractions of the uterus. There was not enough evidence on the oral route of administering ergot alkaloids. There are other medications, namely oxytocin, syntometrine and prostaglandins (which are assessed in other Cochrane Reviews), that can be used and may be preferable.

If you have any questions or comments with regard to the above document please feel free to contact me.

Kind regards

Dr Vanessa Jordan PhD

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