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Induction of labour in women with normal pregnancies at or beyond 37 weeks

Authors: Middleton P, Shepherd E, Morris J, Crowther CA, Gomersall JC

Does a policy of inducing labour at or beyond 37 weeks' gestation reduce risks for babies and their mothers when compared with a policy of waiting until a later gestational age, or until there is an indication for induction of labour?

This review was originally published in 2006 and subsequently updated in 2012 and 2018.

What is the issue?

The average pregnancy lasts 40 weeks from the start of the woman's last menstrual period. Pregnancies continuing beyond 42 weeks are described as 'post-term' or 'postdate' and a woman and her clinician may decide to bring the birth on by induction. Factors associated with post-term birth include obesity, first baby and the mother being more than 30 years old.

Why is this important?

Prolonged gestation may increase risks for babies, including a greater risk of death (before or shortly after birth). However, inducing labour may also have risks for mothers and their babies, especially if the women’s

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cervix is not ready to go into labour. Current tests cannot predict the risks for babies or their mother, as such, and many hospitals have policies for how long pregnancies should be allowed to continue.

What evidence did we find?

We searched for evidence (17 July 2019) and identified 34 randomised controlled trials based in 16 different countries and involving > 21,500 women (mostly with low risk of complications). The trials compared a policy of inducing labour usually after 41 completed weeks of gestation (> 287 days) with a policy of waiting (expectant management).

A policy of labour induction was associated with fewer perinatal deaths (22 trials, 18,795 infants). Four perinatal deaths occurred in the labour induction policy group compared with 25 perinatal deaths in the expectant management group. Fewer stillbirths occurred in the induction group (22 trials, 18,795 infants), with two in the induction policy group and 16 in the expectant management group.

Women in the induction arms of the trials were probably less likely to have a caesarean section compared with expectant management (31 trials, 21,030 women) and there was probably little or no difference in assisted vaginal births (22 trials, 18,584 women).

Fewer babies went into the neonatal intensive care unit (NICU) in the policy of labour induction group (17 trials, 17,826 infants; high-certainty evidence). A simple test of the baby's health (Apgar score) at five minutes was probably more favourable in the induction groups compared with expectant management (20 trials, 18,345 infants).

A policy of induction may make little or no difference to the women experiencing perineal trauma and probably makes little or no difference to the number of women having a postpartum haemorrhage, or breastfeeding at discharge. We are uncertain about the effect of induction or expectant management on the length of maternal hospital stay due to very low-certainty evidence.

For newborn babies, the number with trauma or encephalopathy were similar in the induction and expectant management groups (moderate and low-certainty evidence respectively). Neurodevelopment at childhood follow-up and postnatal depression were not reported in any of the trials. Only three trials reported some measure of maternal satisfaction.

What does this mean?

A policy of labour induction compared with expectant management is associated with fewer deaths of babies and probably fewer caesarean sections; with probably little or no difference in assisted vaginal births. The best timing of when to offer induction of labour to women at or beyond 37 weeks' gestation warrants further investigation, as does further exploration of risk profiles of women and their values and preferences. Discussing

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the risks of labour induction, including benefits and harms, may help women make an informed choice between induction of labour for pregnancies, particularly those continuing beyond 41 weeks, or waiting for labour to start and/or waiting before inducing labour. Women's understanding of induction, the procedures, their risks and benefits, is important in influencing their choices and satisfaction.

Aspirin (single dose) for relief of perineal pain after childbirth

Authors: Shepherd E, Grivell RM

What is the issue?

Can aspirin be given to women who experience perineal pain following childbirth to relieve the pain, without causing side effects for either the women or their babies?

Why is this important?

Many women experience pain in the perineum (the area between the vagina and anus) following childbirth. The perineum may be bruised or torn during childbirth, or have a cut made to help the baby to be born (an episiotomy). After childbirth, perineal pain can interfere with women's ability to care for their newborns and establish breastfeeding. If perineal pain is not relieved effectively, longer-term problems for women may include painful sexual intercourse, pelvic floor problems resulting in incontinence, prolapse, or chronic perineal pain. Aspirin may be given to women who have perineal pain after childbirth, but its effectiveness and safety had not been assessed in a systematic review. This is an update of a review last published in 2017. This is part of a series of reviews looking at drugs to help relieve perineal pain in first few weeks after childbirth.

What evidence did we find?

We searched for evidence in October 2019, and included 17 randomised controlled studies, involving 1132 women, published between 1967 and 1997. All women had perineal pain following an episiotomy (usually within 48 hours after birth), and were not breastfeeding. The women received either aspirin (doses ranging from 300 mg to 1200 mg) or fake pills (placebo), by mouth. The methodological quality of the studies was often unclear. Two studies did not contribute any data for analyses.

Aspirin compared with placebo may increase adequate pain relief for mothers four to eight hours after administration (low-certainty evidence). It is uncertain whether aspirin compared with placebo has an effect on the need for additional pain relief, or on adverse effects for mothers, in the four to eight hours after administration (both very low-certainty evidence).

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The effects of administering 300 mg versus 600 mg aspirin (1 study), 600 mg versus 1200 mg aspirin (2 studies), or 300 mg versus 1200 mg aspirin (1 study) are uncertain for adequate pain relief, the need for additional pain relief, or adverse effects for the mother.

No studies reported on adverse effects of aspirin for the baby, or other outcomes we planned to assess: prolonged hospital stay, or readmission to hospital due to perineal pain; perineal pain six weeks after childbirth, women's views, or postpartum depression.

What does this mean?

A single dose of aspirin may help with perineal pain following episiotomy for women who are not breastfeeding, when measured four to eight hours after administration.

We found no information to assess the effects of aspirin for women who are breastfeeding.

Interventions for treating intrahepatic cholestasis of pregnancy (ICP)

Authors: Walker KF, Chappell LC, Hague WM, Middleton P, Thornton JG

What is the issue?

A liver disorder arising during pregnancy, most often in the last three months, commonly causes itching (pruritus), which can be extremely distressing to the pregnant woman. Bile acids accumulate within the liver and the blood concentration of bile acids is raised, although not always apparent with the symptoms. The signs and symptoms often resolve spontaneously within the first few days after birth, and usually within four to six weeks. Although the condition is poorly understood, there is an association with preterm birth and stillbirth among women with the severest forms of the disease. Many treatments have been suggested. This review is an update of a review first published in 2001 and last updated in 2013.

Why is this important?

The itching can be disabling. Stillbirth and preterm birth are serious adverse outcomes which are important to prevent.

What evidence did we find?

We searched for evidence in December 2019, and identified 26 trials involving 2007 women. The trials assessed nine different interventions, but for most of them the trials were small and had a high risk of bias; we were therefore unable to draw firm conclusions. However, the most widely-used treatment, ursodeoxycholic acid (UDCA), for which we identified seven trials (1008 women), included two trials at low risk of bias (755 women). There is now evidence that UDCA probably reduces itching (moderate-certainty evidence). However, the size of the effect is small and for many pregnant women may not be worthwhile. The evidence for an effect of UCDA on

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stillbirth or fetal distress is unclear, mainly due to limitations in study design and imprecise results (very low-certainty evidence).

What does this mean?

Although UDCA has not been shown to prevent the adverse outcomes of intrahepatic cholestasis of pregnancy, there is no other effective treatment for this condition, and there is a small reduction in maternal itch.

More high-quality trials of other treatments are needed in order to identify what is effective for maternal itching and to prevent adverse outcomes. It would also be helpful to identify those women who are mostly likely to respond to UDCA (for example, whether bile acid concentrations affect how women with ICP respond to treatment with UDCA).

Do different settings and techniques for measuring blood pressure during pregnancy help to improve outcomes for women and babies?

Authors: Ashworth DC, Maule SP, Stewart F, Nathan HL, Shennan AH, Chappell LC

What is the issue?

Regular blood pressure (BP) measurements are crucial during pregnancy for the diagnosis and management of high BP. BP can be measured in various settings (e.g. self-measurement at home versus in clinic) and using different techniques (e.g. measurement based on different blood flow sounds). They may have different effects on diagnosing and monitoring high BP, and reducing the risk of serious illness or death in both woman and baby.

Why is this important?

If high BP in pregnancy is not detected and managed in a timely fashion, serious complications can develop. This review is needed to establish the benefits and risks of these settings and techniques for women and their babies.

What evidence did we find?

We searched for evidence from randomised controlled trials in April 2020, and identified three studies (involving 536,607 women). Overall, the studies were conducted in such a way that we are not certain of the findings, mainly due to the small size of two of the studies and the design of the other.

One study (154 women) compared BP settings in the UK: self-monitoring at home versus usual measurement in clinic. The other two studies compared BP techniques: one (220 women) compared two different blood flow sounds to determine diastolic BP (the bottom number) in Australia, and the other (536,233 deliveries)

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investigated the introduction of a semi-automated BP monitor and an education package (CRADLE intervention) compared with usual care across Africa, India and Haiti.

None of the studies measured high BP, the number of women admitted to hospital before birth, how long babies stayed in the neonatal unit, or what extra help babies received for their breathing.

Self-measurement of BP at home compared with usual BP measurement in clinic

Self-monitoring BP may lead to more women being diagnosed with pre-eclampsia compared with usual care but the evidence is uncertain.

We are uncertain if self-monitoring BP increases the likelihood of stillbirth, baby deaths (after birth), women giving birth early, or women admitted to the intensive care unit.

Self-monitoring BP may have little to no effect on the likelihood of women having their labour induced compared with usual care.

Self-monitoring BP may lead to slightly more newborns being admitted to a neonatal unit compared with usual care.

This trial had no maternal deaths, and did not report the number of baby deaths, before or shortly after birth.

Measuring BP using different blood flow sounds - Korotkoff phase IV (K4, softer, muffled sound) compared with Korotkoff phase V (K5, when the sound disappears) to measure diastolic BP

There may be little to no difference between using K4 or K5 to diagnose pre-eclampsia; the evidence is uncertain.

We are uncertain if there is an effect on baby deaths, before or shortly after birth.

This trial had no maternal deaths, and did not report the number of women admitted to intensive care, women who needed their labour induced, women giving birth early, stillbirths, baby deaths (after birth), or babies admitted to the neonatal unit.

CRADLE intervention (semi-automated BP monitor and an education package) compared with usual care

The CRADLE BP monitor may make little or no difference to the risk of maternal death.

The trial did not report the number of women with pre-eclampsia, women who needed their labour induced, women giving birth early, baby deaths (before and after birth), or the number of babies admitted to the neonatal unit. The number of women admitted to intensive care, stillbirths, and baby deaths (after birth) were only reported for a subgroup of women in this trial, so we did not include these results.

What does this mean?

More evidence is needed on whether self-monitoring BP in pregnant women with high BP is beneficial, because the study exploring this was small.

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Current practice of using K5 (no blood flow sound) to measure diastolic BP is supported in pregnant women with high BP.

The trial using the CRADLE device to monitor BP in pregnancy had limitations in its design, and we are uncertain about its benefit.

Interventions for preventing constipation after giving birth

Authors: Turawa EB, Musekiwa A, Rohwer AC

What is the issue?

Constipation during the postpartum period is a bowel disorder, characterised by symptoms, such as pain or discomfort, straining, hard lumpy stool, and a sense of incomplete bowel evacuation. Administration of enemas before labour, the ability of women to eat during active labour, and irregular and altered eating habits during the first few days after delivery can each have an influence on bowel movements in the days after giving birth. This is an update of a review first published in 2015.

Why is this important?

Pain and discomfort during defecation can be a source of concern to the new mother, who is recuperating from the stress of delivery, particularly if she has had perineal tears repaired, or has developed haemorrhoids. Postpartum constipation can be stressful because of undue pressure on the rectal wall, leading to restlessness and painful defecation, which may affect the quality of life of the mother and the newborn.

What evidence did we find?

We searched for trials to 7 October 2019. We found no new trials that met our inclusion criteria, thus, we included the initial five trials (involving a total of 1208 women) in this update. Overall, the trials were poorly reported, and four out of five trials were published more than 40 years ago. Four trials compared a laxative with a placebo.

Two trials assessed the effects of laxatives that we now find might be harmful for breastfeeding mothers. One drug, Danthron, has been shown to cause cancer in animals, and the other, Bisoxatin acetate, is no longer recommended when breastfeeding. Therefore, we did not include the results of these trials in our main findings.

The trials did not look at pain or straining on defecation, incidence of constipation, or quality of life, but did assess the time to first bowel movement. In one study assessing the effects of senna, compared to the placebo group, more women in the laxative group had a bowel movement on the day of delivery, and fewer women had their first bowel movement on days 2 and 3, while the results were inconclusive between groups on days 1 and

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4 after delivery. More women had abdominal cramps compared to the women in the placebo group, and babies whose mothers received the laxative were no more likely to experience loose stool or diarrhoea. The evidence for all these outcomes is largely uncertain, as we have very serious concerns about risk of bias, and the results are all based on one small study that was conducted at a single institution in South Africa.

One trial compared a laxative plus a stool-bulking agent (Ispaghula husk) to a laxative only for women who underwent surgery to repair a third degree tear of the perineum (involving the internal or external anal sphincter muscles) that occurred during vaginal delivery. The trial reported on pain or straining on defecation, but did not find a clear difference in the pain score between groups. The trial reported that women who were given laxative plus a stool-bulking agent were more likely to experience fecal incontinence in the immediate postpartum period. However, the evidence is very uncertain. The trial did not report on any adverse effects on the baby.

What does this mean?

There is not enough evidence from randomised controlled trials on the effectiveness and safety of laxatives during the early postpartum period to make general conclusions about their use to prevent constipation.

We did not identify any trials assessing educational or behavioural interventions, such as a high-fibre diet and exercise. We need large, high-quality trials on this topic, specifically on non-medical interventions to prevent postpartum constipation, such as advice on diet and physical activity.

Home versus inpatient induction of labour

Authors: Alfirevic Z, Gyte GML, Nogueira Pileggi V, Plachcinski R, Osoti AO, Finucane EM

What is the issue?

We wanted to find out from randomised controlled trials, (RCTs) whether, after induction of labour in a hospital or healthcare facility, women preferred to go home or stay in the facility to await the start of labour. Also, to know if there was any impact on clinical outcomes for either the women or their babies.

Why is this important?

Induction of labour towards the end of pregnancy involves artificially bringing on contractions to start labour. There are risks for mother and baby from induction, but sometimes these are outweighed by the risks of continuing the pregnancy.

However, induction can be a challenging experience for women as they may feel uncomfortable, unsupported and a lack of control. The use of home induction of labour may improve women's experiences, reduce the length of stay in hospital and lower overall costs. The safety of both the mother and baby are critical factors for

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consideration. Only certain forms of induction are considered suitable for home induction, for example, vaginal prostaglandins or balloon/Foley catheters.

What evidence did we find?

We searched for evidence on 31 January 2020 and found seven RCTs, six of which provided data on 1610 women and their babies. These studies were all undertaken in income-rich countries. The certainty of the evidence was mostly very low, mainly because of the limited number of studies, some of which were small, and there was lack of clarity in the study design.

The women all received the induction with initial monitoring in hospital. Women in the home induction group were then able to go home to wait for the start of active labour, or for a set period of time. Women in the inpatient group stayed in hospital.

With vaginal prostaglandin (PGE2) for induction, we found two studies with 1022 women and their babies. There may be little or no difference in women's satisfaction between waiting for labour to become active at home or in hospital, although women tended to be more satisfied with going home to wait. For women, there may be no clear differences in the number who had a spontaneous vaginal birth, overstimulation of the uterus or a caesarean birth. For the babies, there may be a similar incidence of infection and admission to neonatal intensive care unit (NICU). The costs may possibly be less in home settings.

For induction with controlled release prostaglandin (PGE2) into the vagina, we found just one study of 299 women and their babies but the findings indicate probably little or no difference.

Using a balloon or Foley catheter for induction, we found three studies providing data on 289 women and their babies. Two studies reported on women’s satisfaction, and showed a tendency to favour home settings, but the way data were collected was unclear. There may be little or no difference in the number of spontaneous vaginal births, overstimulation of uterine contractions and babies admitted to NICU. Home induction may possibly reduce the number of caesarean births but more data are needed.

What does this mean?

The studies did not include sufficient numbers of women and babies to show clear differences in outcomes between home and inpatient induction of labour, and the certainty of the evidence was generally very low. More studies are needed, and further studies are already underway. We need more data on women's experiences and views on their care, as well as on safety and cost.

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

Kind regards

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