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Cardiotocography (a form of electronic fetal monitoring) for assessing a baby's well-being in the womb during pregnancy

Authors: Grivell RM, Alfirevic Z, Gyte GML, Devane D

Some pregnancies can be complicated by a medical condition in the mother (e.g. diabetes or high blood pressure) or a condition that might affect the health or development of the baby. If these babies with potential difficulties could be identified, and if there were effective interventions to improve the outcomes, then an accurate test that could be used during pregnancy could be beneficial. Cardiotocography (CTG) is a continuous electronic record of the baby's heart rate obtained via an ultrasound transducer placed on the mother's abdomen. It is sometimes referred to as 'electronic fetal monitoring' (EFM). The review looked to see if

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using CTG during pregnancy might improve outcomes for babies by identifying those with complications. It looked for studies that included women at both increased risk, and at low risk, of complications. The review included six studies with all of the women at increased risk of complications. Four of the studies were undertaken in the 1980s and two in the late 1990s. The included studies were not of high quality. There were no differences in outcomes identified (low/very low quality evidence), although when computerised interpretation of the CTG trace was used, the findings looked promising. However, CTG monitors, associated technologies and the way midwives and obstetricians care for women with different complications in pregnancy have changed over the years. This means that more studies are needed now to see if outcomes for babies at increased risk of complications can be improved with antenatal CTG, particularly computerised CTG.

Interventions for heartburn in pregnancy

Authors: Phupong V, Hanprasertpong T

What is the issue?

This review aims to evaluate the effectiveness of interventions for relieving heartburn in pregnancy. Interventions include advice on diet, lifestyle modification, medications and complementary therapies.

Why is this important?

Heartburn is a sensation of burning in the upper part of the digestive tract including the throat. It is one of the most common gut symptoms in pregnant women and it can occur anytime during pregnancy. It is caused by pregnancy hormones affecting the muscle that keeps food in the stomach, and letting acid in the stomach come back up the throat. The symptoms may be frequent, severe and distressing, but serious complications are rare. Many interventions have been suggested. Lifestyle modifications are suggested for treating mild symptoms. Women are often advised to eat smaller meals, chew gum, not to eat late at night, to elevate the head of the bed and avoid foods and medications that cause heartburn. Abstinence from alcohol and tobacco are encouraged to reduce reflux symptoms and to avoid fetal exposure to these harmful substances. For more troubling reflux symptoms, medications are sometimes used. The common drugs used for the treatment of heartburn in pregnancy include antacids, drugs that stimulate the muscles of the gastrointestinal tract to prevent acids from staying in the stomach too long.

What evidence did we find?

We found four small trials that provided data on 358 women. We estimated that the risk of bias was low for women enrolled in the study and the researchers as far as knowing if they were in the treatment group or the control (or placebo) group. It was unclear if there was a risk of bias for how the decisions were made to for women to be in the treatment or control/placebo groups, for those looking at the results and if all the results were reported.

Two trials looked at medication compared with placebo or no treatment. One study examined the effect of a medication(sucralfate) in comparison to advice on dietary and lifestyle choice. One trial evaluated acupuncture versus no treatment.

Women who received medication reported complete relief from heartburn more often than women receiving no treatment or placebo, or women who received advice on diet and lifestyle choices (*moderate quality of evidence*). We found no difference in partial relief of heartburn nor in side effects between the treatment groups (*very low quality of evidence*). We also found women who received acupuncture reported improved quality of life in terms of improved ability to sleep and eat, and no difference in the rate of side effects compared to women who received no acupuncture,

What does this mean?

From the little evidence there is, medication seems to help relieve heartburn but there is not enough data to say which medication is best. Acupuncture seems to help women to eat and sleep better when troubled with heartburn.

Further research is needed to fully evaluate the effectiveness of interventions for heartburn in pregnancy. Future research should also address other medications such as histamine 2-receptor antagonists, promotility drugs, proton pump inhibitors, and a raft-forming alginate reflux suppressant in treatment of heartburn in pregnancy. More research is needed on acupuncture and other

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complimentary therapies as treatments for heartburn in pregnancy. Future research should also consider any adverse outcomes, maternal satisfaction with treatment and measure pregnant women's quality of life in relation to the intervention.

Interventions for preventing constipation after giving birth

Authors: Turawa EB, Musekiwa A, Rohwer AC

Constipation is a bowel disorder that is characterised by symptoms such as pain or discomfort, straining, hard lumpy stool and a sense of incomplete bowel evacuation. 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 for women because of undue pressure on the rectal wall, leading to restlessness and painful bowel movements which may affect the quality of life of the mother. The 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. We aimed to find all the trials assessing interventions that could prevent postpartum constipation. We examined the available evidence up to 30 April 2015. We included five randomised controlled trials (involving a total of 1208 women from the first day of giving birth) in this review. Overall, the trials were poorly conducted and reported.

Four trials compared a laxative with a placebo control. The trials did not look at pain or straining on defecation, incidence of constipation, or changes in the quality of life, but did assess the time to first bowel movement. More women in the laxative group had a bowel movement on the day of delivery in one trial. For days one, two and three after the birth, the findings from the trials were not consistent. Combined results of two trials found that more women in the placebo group had their first bowel movement bowel four days after delivery compared to the laxative group. Adverse effects of the intervention were poorly reported in the trials. Two trials reported on abdominal cramps but we were unable to combine the results of the two trials because they were very different (one study found more women had abdominal cramps compared to the women in the placebo control group whereas the other study found no difference between groups). In terms of adverse effects of the intervention for the baby, one trial found that babies whose mothers received laxative were no more likely to experience loose stool or diarrhoea.

One trial compared a laxative with a laxative plus a stool-bulking agent (Ispaghula husk) for women who underwent surgery to repair a tear of the perineum involving the internal or external anal sphincter muscles (third degree) that occurred during vaginal delivery. The trial reported on pain or straining on defecation but did not find a difference in the pain score between groups. In terms of adverse effects of the intervention, the trial reported that women who were given laxative plus a stool-bulking agent were more likely to experience fecal incontinence during the immediate postpartum period. However the number of women having any episode of faecal incontinence during first 10 days postpartum was reported with no clear difference between the laxative and the laxative plus stool-bulking agent group (14/77 (18.2%) versus 23/70 (32.9%), 147 women). This trial reported no data in relation to any adverse effects that the intervention might have on the baby.

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 found some evidence that adding a stool-bulking agent to a laxative for women who underwent surgery to repair a third degree perineal tear is not beneficial. Large, high-quality trials are needed on this topic. In addition, trials looking at non-medical interventions, such as advice on diet and physical activity, are needed.

Vitamin C supplementation in pregnancy

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Authors: Rumbold A, Ota E, Nagata C, Shahrook S, Crowther CA

Taking vitamin C supplements in pregnancy

What is the issue?

Does vitamin C supplementation during pregnancy improve outcomes for mothers and babies, and does it have any adverse effects?

Why is this important?

Having a low intake of vitamin C could be associated with complications in pregnancy such as high blood pressure with swelling of the hands, feet and face (pre-eclampsia), anaemia and having a small baby.

What evidence did we find?

This review included data from 29 trials involving over 24,000 pregnant women from 17 different countries. Four trials did not contribute data to the review. The overall risk of bias of the trials was low to unclear, and the evidence was moderate to high quality. The most common daily dosage of vitamin C was 1000 mg, which was used in 15 studies. The findings indicated that routine supplementation with vitamin C during pregnancy, either alone or in combination with other supplements (mainly vitamin E) did not improve outcomes for women and their babies. There was a 36% relative reduction in the placenta coming away early from the uterine wall (placental abruption) in women given vitamin C supplements (eight studies, over 15,700 women); this was rated as high-quality evidence. However, it was unclear whether this finding was due to vitamin C or another agent, as most trials gave women vitamin C combined with vitamin E. In the studies that gave women vitamin C only, there was a reduction in prelabour rupture of the membranes (PROM) occurring either preterm or at term. However, there was an increased risk of term PROM in the studies that gave women vitamin C and vitamin E. Therefore, further research is required to examine the role of vitamin C in reducing placental abruption and the development of PROM. The review found in one study only an increased risk of abdominal pain with vitamin C indicating there may be harms associated with vitamin C supplements in pregnancy.

What does this mean?

Taking vitamin C supplements during pregnancy does not help to prevent problems in pregnancy including stillbirth, the death of the baby, preterm birth, pre-eclampsia or low birthweight babies.

Treatments for preventing and treating low-back and pelvic pain during pregnancy

Authors: Liddle SD, Pennick V

Review question

We looked for evidence about the effects of any treatment used to prevent or treat low-back pain, pelvic pain or both during pregnancy. We also wanted to know whether treatments decreased disability or sick leave, and whether treatments caused any side effects for pregnant women.

Background

Pain in the lower-back, pelvis, or both, is a common complaint during pregnancy and often gets worse as pregnancy progresses. This pain can disrupt daily activities, work and sleep for pregnant women. We wanted to find out whether any treatment, or combination of treatments, was better than usual prenatal care for pregnant women with these complaints.

Study characteristics

The evidence is current to 19 January 2015. We included 34 randomised studies in this updated review, with 5121 pregnant women, aged 16 to 45 years. Women were from 12 to 38 weeks' pregnant. Studies looked at different treatments for pregnant women with low-back pain, pelvic pain or both types of pain. All treatments were added to usual prenatal care, and were compared with usual prenatal care alone in 23 studies. Studies measured women's symptoms in different ways, ranging from self-reported pain and sick leave to the results of specific tests.

Key results

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Low-back pain

When we combined the results from seven studies (645 women) that compared any land-based exercise with usual prenatal care, exercise interventions (lasting from five to 20 weeks) improved women's levels of low-back pain and disability.

Pelvic pain

There is less evidence available on treatments for pelvic pain. Two studies found that women who participated in group exercise and received information about managing their pain reported no difference in their pelvic pain than women who received usual prenatal care.

Low-back and pelvic pain

The results of four studies combined (1176 women) showed that an eight- to 12-week exercise program reduced the number of women who reported low-back and pelvic pain. Land-based exercise, in a variety of formats, also reduced low-back and pelvic pain-related sick leave in two studies (1062 women).

However, two other studies (374 women) found that group exercise plus information was no better at preventing either pelvic or low-back pain than usual prenatal care.

There were a number of single studies that tested a variety of treatments. Findings suggested that craniosacral therapy, osteomanipulative therapy or a multi-modal intervention (manual therapy, exercise and education) may be of benefit.

When reported, there were no lasting side effects in any of the studies.

Quality of the evidence and conclusions

There is low-quality evidence suggesting that exercise improves pain and disability for women with low-back pain, and moderate-quality evidence that exercise results in less sick leave and fewer women reporting pain in those with both low-back and pelvic pain together. The quality of evidence is due to problems with the design of studies, small numbers of women and varied results. As a result, we believe that future studies are very likely to change our conclusions. There is simply not enough good quality evidence to make confident decisions about treatments for these complaints.

Pushing methods for the second stage of labour

Authors: Lemos A, Amorim MMR, Dornelas de Andrade A, de Souza AI, Cabral Filho J, Correia JB

Concerns about maternal types of pushing: spontaneous versus directed pushing and timing of pushing: delayed versus immediate pushing during the second stage of labour remain. A common technique is to encourage women to take a deep breath at the beginning of a contraction then hold it and bear down throughout the contraction. In spontaneous pushing, women are free to follow their own instincts and generally push three to five times per contraction. With epidural anaesthesia, the desire to push is weakened. Delayed pushing involves instructing women to avoid pushing until there is an irresistible urge to push or when the presenting part of the baby has descended to the perineum.

This review of randomised controlled trials included seven trials (815 women) comparing the types of pushing: spontaneous pushing versus directed pushing with or without epidural analgesia and 13 trials (2879 women) comparing timing of pushing: delayed pushing versus immediate pushing with epidural analgesia. The included studies were of mixed methodological quality.

For types of pushing (spontaneous pushing versus directed pushing) - there was no clear difference in the duration of the second stage, perineal laceration and episiotomy between the spontaneous pushing and the directed pushing groups. Primary outcomes for the baby (such as five-minute Apgar score less than seven, admission to neonatal intensive care) were no different and there were no data available in relation to hypoxic ischaemic encephalopathy. For the secondary maternal outcome, duration of pushing, it seems that spontaneous pushing decreases it, but this evidence comes from one trial (involving 100 women) and it only shows a five-minute reduction. There was no difference in the mode of birth (spontaneous vaginal delivery, instrumental delivery or caesarean section) between the spontaneous pushing or directed pushing groups.

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For the timing of pushing: delayed pushing versus immediate pushing (all women with epidural) - delayed pushing was associated with an increase in the duration of the second stage by about 54 minutes. There were no differences between the two groups in terms of perineal laceration and episiotomy. There were no differences between the delayed and immediate pushing groups in terms of important neonatal outcomes: Apgar score less than seven at five minutes, admission to neonatal intensive care. No data were available in relation to hypoxic ischaemic encephalopathy. For the secondary maternal outcomes, delayed pushing reduced the duration of pushing by about 20 minutes and slightly increased the spontaneous vaginal delivery, both secondary maternal outcomes. Futhermore, delayed pushing was associated with an increased incidence of low umbilical cord pH and increased the cost of intrapartum care by CDN$ 68.22.

Futhermore, adverse effects on pelvic floor still remain unclear. Well-designed randomised trials are needed to establish, with reliability, the possible good and harmful effects of these different techniques .

Fetal movement counting for assessment of fetal wellbeing

Authors: Mangesi L, Hofmeyr G, Smith V, Smyth RMD

Not enough evidence on counting the baby's movements in the womb to check for wellbeing.

Mothers can usually feel their babies moving in their wombs from around 16 to 20 weeks. Babies' activities in the womb can vary considerably, some being very active and some not so active. A decrease in a baby's normal pattern of movements may be a sign that the baby is struggling for some reason and it might be better for the baby to be born early. Hence, it has been suggested that if the mother counts her babies' movements each day, and there are several ways of doing this, she may be able to identify a decrease in her baby's normal movement patterns. It is further suggested that if the mother informs caregivers of this, then the caregivers can do additional tests and some babies can be prevented from dying before birth. However, sometimes fetal movement-counting tests can cause considerable anxiety for women and may not be easy for some women especially when a mother is busy at work or caring for other small children, so it is important to assess if these tests are helpful in identifying babies in difficulty with time then to intervene.

The review of trials found five studies, involving 71,458 women, comparing two fetal movement counting methods, fetal movement counting versus hormonal analysis and routine fetal movement counting compared with standard antenatal care, as defined by trial authors. In studies that compared routine counting of baby's movements in the womb with mixed or undefined counting, there was no difference in stillbirths, caesarean sections, birth weight less than 10th centile and mother-baby attachment; there was reduction in women's anxiety in the group counting the baby's movements. There was a tendency to more antenatal admissions. When counting of baby's movement was compared with hormonal analysis, there were fewer hospital visits among women who were counting and fewer babies in the hormonal analysis group had low Apgar scores, which assess the baby's condition after birth. There was no difference between the groups in terms of caesarean sections done and other outcomes. 'Perinatal death or severe morbidity' was not reported. When different types of fetal movement counting methods (once a day compared to more than once a day) were compared, women were more compliant in using the once a day counting method, citing less interruption with daily activities as one of the reasons; the incidence of caesarean section did not differ and perinatal death or severe illness was not reported. The numbers and the methodological quality of studies were insufficient to assess stillbirths accurately. Further trials are suggested, and it would be very important to assess women's anxiety and views in addition to the ability of the counting to prevent stillbirths.

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Giving women their own case notes to carry during pregnancy

Authors: Brown HC, Smith HJ, Mori R, Noma H

Overall, the quality of the evidence was graded as low to moderate. The updated search identified one cluster-randomised trial, which was included.

Women carrying their own case notes improves their sense of control and the availability of antenatal records, but insufficient evidence of additional effects.

In some healthcare systems women are given their own case notes to look after and bring to each antenatal visit. This review of four trials, involving 1176 women, suggests that there are both potential benefits (increased availability of antenatal records during hospital attendance, and increased maternal control) and harms (more operative deliveries). All the trials reported that more women in the case notes group would prefer to hold their antenatal records in another pregnancy, but there was not enough evidence to determine the effect of women carrying their own case notes on health behaviours such as smoking and breastfeeding, women's satisfaction, and clinical outcomes.

Interventions for varicose veins and leg oedema in pregnancy

Authors: Smyth RMD, Aflaifel N, Bamigboye AA

There is not enough evidence on treatments for varicose veins and leg oedema in pregnancy.

Varicose veins, sometimes called varicosity, occur when a valve in the blood vessel walls weakens and the blood stagnates. This in turn leads to problems with the circulation in the veins and to oedema or swelling. The vein then becomes distended, its walls stretch and sag, allowing the vein to swell into a tiny balloon near the surface of the skin. The veins in the legs are most commonly affected as they are working against gravity, but the vulva (vaginal opening) or rectum, resulting in haemorrhoids (piles), can be affected too. Pregnancy seems to increase the risk of varicose veins and they cause considerable pain, night cramps, numbness, tingling, the legs may feel heavy, achy, and they are rather ugly. Treatments for varicose veins are usually divided into three main groups: pharmacological treatments, non-pharmacological and surgery. The review identified seven trials involving 326 women. Although there was a moderate quality evidence to suggest that the drug rutoside seemed to be effective in reducing symptoms, the study was too small to be able to say this with real confidence. Similarly, with reflexology and water immersion, there were insufficient data to be able to assess benefits and harms, but they looked promising. Compression stockings do not appear to have any advantages. More research is needed.

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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