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Risk-scoring systems for the prevention of preterm birth
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Ethanol (alcohol) for preventing preterm birth
Specialised antenatal clinics for women with a multiple pregnancy for improving maternal and infant outcomes
Duration of treatment for asymptomatic bacteriuria during pregnancy

Risk-scoring systems for the prevention of preterm birth

Authors: Davey M, Watson L, Rayner J, Rowlands S

Identification of women whose pregnancies are at higher than average risk of preterm birth would allow the possibility of providing the women with higher level antenatal care with the aim of preventing the preterm birth. Preterm birth (before 37 completed weeks' gestation) is a major public health problem worldwide, and occurs in 6% to 10% of births in high-income countries. The proportion of pregnancies which end prematurely, between 20 and 36 weeks, has not fallen in recent years. Perinatal interventions, both before birth (transfer of women to tertiary care, antenatal steroids), and after birth (intensive care, surfactant) have markedly improved perinatal outcomes. A number of scoring systems of risk factors associated with preterm birth have been used. Systematic, objective measures can include age, marital status, socio-economic factors, smoking, threatened miscarriage, previous low birthweight baby, previous stillbirth, maternal weight and height. Their ability to identify women at increased risk of preterm birth, and subsequently to prevent preterm birth, has not been evaluated by randomised controlled trials. The literature search for this review revealed no trials of the use of risk-scoring systems to prevent preterm birth. There are a number of ethical issues involved in the decision to implement risk scoring that have not been evaluated; for example, an intervention with potential morbidity and may be used, or used more frequently with no evidence of more favourable outcomes, or the woman may prefer not to disclose some sensitive information included in

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the measures. There is a need for prospective studies that evaluate the use of risk-scoring systems to prevent preterm birth, including an assessment of their impact on women's well-being. If these prove promising, they should be followed by an adequately powered, well-designed randomised controlled trial.

Vitamin A supplementation during pregnancy for maternal and newborn health outcomes

Authors: McCauley ME, van den Broek N, Dou L, Othman M

What is the issue?

Vitamin A is a fat-soluble vitamin found in liver, kidney, eggs, and dairy produce. Low dietary fat intake or intestinal infections may interfere with the absorption of vitamin A. Natural retinoids are required for a wide range of biological processes including vision, immune function, bone metabolism and blood production. In pregnancy, extra vitamin A may be required. Currently, the World Health Organization (WHO) and other international agencies recommend routine vitamin A supplementation during pregnancy or at any time during lactation in areas with endemic vitamin A deficiency (where night blindness occurs).

Why is this important?

It has been suggested that a low intake of vitamin A may be associated with complications in pregnancy such as death of the mother or baby, increased infections for the mother or baby, low iron level for the mother or baby or having a baby with any of the following complications: early delivery, low birthweight or a congential abnormality.

What evidence did we find?

This review included 19 studies involving over 310,000 women. Seven trials were conducted in Africa, six in Indonesia, two in Bangladesh, and one each in Nepal, China, India, UK and USA. Most of the trials were conducted in populations considered to be vitamin A deficient (except USA and UK). The overall risk of bias was low to unclear in most of the trials, and the body of evidence was moderate to high quality. The findings indicate that routine supplementation with vitamin A (either alone or in combination with other supplements) during pregnancy did not reduce mother or newborn baby deaths. There is good evidence that antenatal vitamin A supplementation does reduce maternal anaemia in women who live in areas where vitamin A deficiency is common or who are HIV-positive. The trials published so far did not report any side effects or adverse events. The available evidence suggests a reduction in maternal infection but these data are not of a high quality and further trials would be needed to confirm or refute this.

What does this mean?

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Taking vitamin A supplements during pregnancy does not help to prevent maternal deaths (related to pregnancy) or perinatal or newborn baby deaths. Taking vitamin A supplements during pregnancy does not help to prevent other problems that can occur such as stillbirth, preterm birth, low birthweight of babies or newborn babies with anaemia. However, the risk of maternal anaemia, maternal infection and maternal night blindness is reduced.

Ethanol (alcohol) for preventing preterm birth

Authors: Haas DM, Morgan AM, Deans SJ, Schubert FP

Preterm birth is when a baby is born at less than 37 weeks' gestation. These babies are generally more ill and are less likely to survive than babies born at term. Preterm babies are also more likely to have some disability, and the earlier the baby is born the more likely they are to have problems. Even short-term postponement of preterm birth can improve outcomes for babies, as this gives time for the mother to be given a steroid injection to help develop the baby's lungs prior to birth. Short-term postponement of preterm birth may also give the chance to transfer the mother, if required, to somewhere where there is more expert care for the baby available.

Drugs used to try and stop labor are called tocolytics. These drugs are given to women experiencing preterm labor to try and stop or relax uterine contractions. One of the earliest drugs used to try and stop contractions was ethanol (also known as alcohol), although this is not generally used in current practice due to safety concerns for both the mother and her baby. In this review, we looked at the published studies to see if ethanol was effective in postponing labor and improving outcomes for babies, and also whether ethanol was better than other types of tocolytics used to postpone preterm labor and birth.

We searched for trials evidence on 31 May 2015 and found 12 trials total involving 1586 women, some comparing ethanol with a placebo and others comparing ethanol with other tocolytics (in this instance, all betamimetics). The trials included in this review were considered to be mostly low quality studies.

For our comparison of ethanol versus placebo control (two trials, 77 women). We found that ethanol was no better than placebo (sugar water) for any of the outcomes studied: birth <48 hours after trial entry (one trial, 35 women) or neonatal mortality (one trial, 35 women). Serious maternal adverse events and perinatal mortality was not reported. There was no differences between groups for other outcomes: preterm birth < 37 weeks or < 34 weeks, serious infant outcome, fetal alcohol syndrome/fetal alcohol spectrum disorder, or small-for-gestational age.

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We also compared ethanol with other tocolytic drugs (nine trials involving 1438 women; all trials studied betamimetic drugs). We found that ethanol was worse than other betamimetic drugs at postponing birth until after 34 weeks' gestation and led to a higher rate of low birthweight babies, babies with breathing problems at birth and neonatal death (although there was no clear difference in neonatal deaths when we restricted our analyses to the better quality studies), However, we did find that, compared to betamimetics, ethanol was associated with a trend for fewer maternal side effects that required stopping or changing the drug, though this result is based on three small trials. There were no differences in other secondary outcomes of preterm birth < 37 weeks, number of days delivery was delayed, or overall maternal adverse events.

Overall, we found no evidence that ethanol was better than a placebo at postponing preterm labor and birth. Whilst there was some evidence to suggest that ethanol may be better tolerated than betamimetics, we found that ethanol was not as effective as betamimetics at postponing preterm labor and birth. None of the studies were long-term ones and thus none of them reported on the risk of giving ethanol on the babies developing fetal alcohol syndrome, which can cause mental retardation.

There is no need for new studies to evaluate the use of ethanol for preventing preterm birth. However, it would be useful for long-term follow-up studies on the babies born to mothers from the existing studies in order to assess the risk of long-term neurodevelopmental status.

Specialised antenatal clinics for women with a multiple pregnancy for improving maternal and infant outcomes

Authors: Dodd JM, Dowswell T, Crowther CA

'Specialised' antenatal clinics versus 'standard' antenatal care for women with a multiple pregnancy.

Women carrying more than one baby are at increased risk of complications in pregnancy, which can affect the health of both mother and babies. 'Specialised' antenatal clinics have been suggested for women with a multiple pregnancy as a means of improving health outcomes for women and their infants. The review found one randomised trial involving 162 women with a multiple pregnancy. For most important outcomes the evidence was not available, or was graded very low quality due to imprecise estimates, the small sample size of the single study providing data and low numbers of events for some outcomes. There were no significant differences identified between specialised antenatal care and standard care in the chance of a baby dying in the first month of life. Women receiving specialised antenatal care were significantly more

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likely to give birth by caesarean section. Further information from well-designed trials reporting outcomes for women and their infants are required.

Duration of treatment for asymptomatic bacteriuria during pregnancy

Authors: Widmer M, Lopez I, Gülmezoglu A, Mignini L, Roganti A

Asymptomatic bacteriuria is a urinary tract infection (without symptoms) common in pregnancy. If untreated, it can lead to pyelonephritis (kidney infection). Antibiotic treatment is recommended. This review aimed to identify whether single-dose antibiotic treatments are as effective as longer ones for maternal and newborn outcomes. In general, the risk of bias of trials included in this review was largely unclear. The overall quality of the evidence was assessed using the GRADE approach. The review of 13 studies, involving over 1622 women, found that a seven-day regimen is more effective than a one-day course, especially for the outcome of low birthweight (*high quality evidence*), but this result is based on just one study. There were no clear differences between a single dose and a four- to seven-day short course of antibiotics for other review outcomes, including kidney infection (*very low quality evidence*) and preterm birth (*moderate quality evidence*). Women with a single-dose regimen reported fewer side effects (*low quality evidence*). More trials are needed to confirm which length of treatment is best for women and babies.

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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