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[Intervention Review]

Amnioinfusion for third trimester preterm premature rupture of membranes

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ABSTRACT

Background

Preterm premature rupture of membranes (PPROM) is a leading cause of perinatal morbidity and mortality. Amnioinfusion aims to restore amniotic fluid volume by infusing a solution into the uterine cavity.

Objectives

The objective of this review was to assess the effects of amnioinfusion for PPROM on perinatal and maternal morbidity and mortality.

Search methods

We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (2 December 2013).

Selection criteria

Randomised trials of amnioinfusion compared with no amnioinfusion in women with PPROM.

Data collection and analysis

Three review authors independently assessed trials for inclusion. Two review authors independently assessed trial quality and extracted data. Data were checked for accuracy.

Main results

We included five trials, of moderate quality, but we only analysed data from four studies (with a total of 241 participants). One trial did not contribute any data to the review.

Transcervical amnioinfusion improved fetal umbilical artery pH at delivery (mean difference 0.11; 95% confidence interval (CI) 0.08 to 0.14; one trial, 61 participants) and reduced persistent variable decelerations during labour (risk ratio (RR) 0.52; 95% CI 0.30 to 0.91; one trial, 86 participants).

Transabdominal amnioinfusion was associated with a reduction in neonatal death (RR 0.30; 95% CI 0.14 to 0.66; two trials, 94 participants), neonatal sepsis (RR 0.26; 95% CI 0.11 to 0.61; one trial, 60 participants), pulmonary hypoplasia (RR 0.22; 95% CI 0.06 to 0.88; one trial, 34 participants) and puerperal sepsis (RR 0.20; 95% CI 0.05 to 0.84; one trial, 60 participants). Women in the amnioinfusion group were also



less likely to deliver within seven days of membrane rupture (RR 0.18; 95% CI 0.05 to 0.70; one trial, 34 participants). These results should be treated with circumspection as the positive findings were mainly due to one trial with unclear allocation concealment.

Authors' conclusions

These results are encouraging but are limited by the sparse data and unclear methodological robustness, therefore further evidence is required before amnioinfusion for PPROM can be recommended for routine clinical practice.

PLAIN LANGUAGE SUMMARY

Amnioinfusion for preterm premature rupture of membranes

There is some evidence to show that restoring amniotic fluid volume with saline or a similar fluid (amnioinfusion) following preterm premature rupture of the membranes (PPROM) may be beneficial for preterm babies (by preventing infection, lung damage and death) and mothers (by preventing infection of the womb after childbirth). However, current evidence is insufficient to recommend amnioinfusion for routine use in PPROM.

Preterm premature rupture of membranes is the single most identifiable cause of preterm labour. The sac (membranes) surrounding the baby and fluid in the womb (uterus) usually breaks (ruptures) during labour. If the membranes rupture before labour and preterm (before 37 weeks) the baby has an increased risk of infection. Reduced fluid around the baby also increases the chance of the umbilical cord being compressed, which can reduce the baby's supply of nutrients and oxygen. In addition, insufficient fluid in the womb may interfere with normal lung development in very small babies and can cause fetal distress, with changes in heart rate. Extra liquid can be injected through the woman's vagina (transcervical amnioinfusion) or abdomen (transabdominal amnioinfusion) into the womb, providing more liquid to surround the baby. The review of five randomised controlled trials (with data from a total of 241 participants analysed) found some evidence to show that amnioinfusion with a saline solution may improve health outcomes and be beneficial for babies and mothers following PPROM. However, the evidence is currently insufficient to recommend its routine use because of the limited number of trials and low numbers of women in the trials.