Amnioinfusion for third trimester preterm premature rupture of membranes

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Key Findings

This review was to assess the effects of transabdominal or transcervical amnioinfusion for PPROM compared to no amnioinfusion on perinatal and maternal morbidity and mortality.

- Transabdominal amnioinfusion reduced neonatal death, neonatal infection and pulmonary hypoplasia
- Transabdominal amnioinfusion reduces puerperal sepsis and the likelihood to deliver within seven days of membrane rupture
- Transabdominal amnioinfusion had no influence on birth weight, gestational age at delivery, admission to neonatal intensive care and neurological complications
- Transcervical amnioinfusion reduced persistent variable decelerations during labour and improved fetal umbilical artery pH at delivery
- Transcervical amnioinfusion did not influence the rates of caesarean section, low Apgar scores, neonatal death or infectious morbidity

Evidence included in this review

Five studies were included in this review, but four contributed data to the analysis, involving 241 women with PROM between 24 and 36 weeks of gestation. Three studies compared transcervical amnioinfusion with no amnioinfusion while the other two studies compared transabdominal amnioinfusion with no amnioinfusion

Quality assessment

Grade approach for the included studies was moderate for neonatal death, neonatal sepsis and maternal puerperal sepsis. The quality of evidence for neonatal pulmonary hypoplasia was low. All the studies were randomized controlled trials.

Clinical implications

Although the positive findings of this review most of the data came mainly from one trial. The small number of trials and participants limit conclusions to guide clinical practice on applying amnioinfusion for PPROM.
Further research

This review was limited by the inclusion of studies of small sample sizes. Bigger trials are needed to ascertain the effects seen in the review. In addition, neurological sequelae and development of neonates requires an evaluation in long-term follow-up studies. Future trials may wish to investigate gestational age-specific amnioinfusion intervention.

Cochrane review


Abstract

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.

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

We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (2 December 2013). Randomised trials of amnioinfusion compared with no amnioinfusion in women with PPROM.

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

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.

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.

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