Immediate versus deferred delivery of the preterm baby with suspected fetal compromise for improving outcomes

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RHL summary

Findings of the review: One randomized controlled trial (548 women and 588 babies) of high quality performed in thirteen countries was included. The trial had a wide range of inclusion criteria: the recruited women had different Doppler findings, different obstetric complications and different gestational ages (less than 36 weeks) with fetal compromise. In all cases, the attending clinicians were unsure whether delivery was necessary. There was no difference in intrauterine death and death during the first 28 days of life, composite outcome of death and disability at or after two years, cord pH less than 7.00, Apgar score less than seven at five minutes, and severe neonatal morbidity in immediate versus deferred delivery groups. More babies in the immediate delivery group were ventilated for more than 24 hours and had cerebral palsy at or after two years of age. However, there were no differences in neurodevelopmental impairment at or after two years or death or disability in childhood. More women in the immediate delivery group had caesarean section.

Implementation: There is insufficient evidence at the present time to recommend immediate instead of deferred delivery of the preterm baby for suspected fetal compromise. Adequately powered high-quality trials are needed on this issue.

Cochrane review

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Abstract

Immediate delivery of the preterm fetus with suspected compromise may decrease the risk of damage due to intrauterine hypoxia. However, it may also increase the risks of prematurity.

To assess the effects of immediate versus deferred delivery of preterm babies with suspected fetal compromise on neonatal, maternal and long-term outcomes.
We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (27 February 2012).

Randomised trials comparing a policy of immediate delivery with deferred delivery or expectant management in preterm fetuses with suspected in utero compromise. Quasi-randomised trials and trials employing a cluster-randomised design were eligible for inclusion but none were identified.

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

We included one trial of 548 women (588 babies) in the review. There was no difference in the primary outcomes of extended perinatal mortality (risk ratio (RR) 1.17, 95% confidence interval (CI) 0.67 to 2.04) or the composite outcome of death or disability at or after two years (RR 1.22, 95% CI 0.85 to 1.75) with immediate delivery compared to deferred delivery. More babies in the immediate delivery group were ventilated for more than 24 hours (RR 1.54, 95% CI 1.20 to 1.97). There were no differences between the immediate delivery and deferred delivery groups in any other individual neonatal morbidity or markers of neonatal morbidity (cord pH less than 7.00, Apgar less than seven at five minutes, convulsions, intraventricular haemorrhage or germinal matrix haemorrhage, necrotising enterocolitis and periventricular leucomalacia or ventriculomegaly).

More children in the immediate delivery group had cerebral palsy at or after two years of age (RR 5.88, 95% CI 1.33 to 26.02). There were, however, no differences in neurodevelopment impairment at or after two years (RR 1.72, 95% CI 0.86 to 3.41) or death or disability in childhood (six to 13 years of age) (RR 0.82, 95% CI 0.48 to 1.40). More women in the immediate delivery group had caesarean delivery than in the deferred delivery group (RR 1.15, 95% CI 1.07 to 1.24). Data were not available on any other maternal outcomes.

Currently there is insufficient evidence on the benefits and harms of immediate delivery compared with deferred delivery in cases of suspected fetal compromise at preterm gestations to make firm recommendations to guide clinical practice. Where there is uncertainty whether or not to deliver a preterm fetus with suspected fetal compromise, there seems to be no benefit to immediate delivery. Deferring delivery until test results worsen or increasing gestation favours delivery may improve the outcomes for mother and baby. More research is needed to guide clinical practice.

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