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Cochrane Nursing Care Field – Cochrane Review Summary

Prepared for the

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TITLE: Planned early birth versus expectant management for women with preterm prelabour rupture of membranes prior to 37 weeks' gestation for improving pregnancy.

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- ## Background

The premature rupture of membranes, colloquially known as the “waters breaking”, in pregnant women is associated with risks to both the mother and foetus and these risks are complicated by the gestational age of the foetus. The aim of care is to mitigate these risks while maximising the benefits of further foetal maturity. There are two ways of managing these patients and both have associated risks.

Planned early birth is a strategy that as its name suggests plans for the early delivery of the baby as soon as possible after the membranes have ruptured, typically within 24 hours. This can involve a vaginal delivery following induction or a caesarean section. The risks of this method are linked to the risks typically associated with the prematurity. These complications can include respiratory distress, sepsis, necrotising enterocolitis (an injury to the bowel of the newborn), intraventricular haemorrhage, difficulty with thermoregulation and with breastfeeding, and increased hospitalisation. While these risks decrease after 32 weeks gestation, it is important to note that babies born between 34 and 37 weeks are still physiologically immature and as such do have significantly increased morbidity and mortality compared to infants born at term.

The second management strategy is expectant management. Here pregnant women are observed and managed with the aim of delaying delivery for as long as possible to maximise the changes of foetal development and ideally until full term has been reached, barring any complications.

The risks of expectant management are associated with longer exposure to the complications caused by the premature rupture of the membranes and include ascending infection, cord prolapse (through the cervix), intrapartum foetal distress and abruption (premature detachment of the placenta from the uterine wall). Some treatments can be used to reduce the risk of these complications including corticosteroids and antibiotics.

- ## Objective/s:

This review aimed to compare the results of planned early birth and expectant management in women who went into premature labour between 24 and 37 weeks gestation following rupture of their membranes. Planned early birth occurs as soon as possible after rupture of membranes and the methods include induction of labour and caesarean section. The aim of expectant management is to wait for natural delivery and for the foetus to be delivered as close to term as possible.

- ## Intervention/Methods:

The review included randomised controlled trials (RCTs) that compared planned early birth and expectant management for women with preterm prelabour rupture of membranes (PPROM) prior to 37 weeks gestation. Quasi-randomised trials and cluster-randomised trials were excluded.

The main outcomes were neonatal infection/sepsis, respiratory distress syndrome and caesarean section. The review also considered a number of secondary outcomes for the foetus and neonate and mother. These included death of the foetus or neonate and complications such as abnormality on cerebral ultrasound and admission to a neonatal intensive care unit. Outcomes for the mother

included type of delivery, duration of hospitalisation and satisfaction. All studies were assessed for bias.

The main intervention was the effect of planned early birth on maternal and foetal well-being. Other interventions of interest included:

- The use of corticosteroids;
- The use of antibiotics
- Gestational age
- Time to early birth (less than or greater than 24 hours).

• Results:

Twelve studies from 11 countries were included in this review and the participants totalled 3617 women and 3628 babies.

The results for the primary outcomes were:

- No clear differences in neonatal sepsis – evidence graded moderate;
- Early birth increased the incidence of respiratory distress syndrome – evidence graded high. The definition of severe respiratory distress differed between the trials and the numbers were too small to adequately assess this outcome.
- Early birth was associated with an increased rate of caesarean section – evidence rated high. However where the reason for the caesarean section was foetal distress, the difference between the two groups was not apparent.

• Conclusions:

The results for secondary outcomes in this review showed that early birth was associated with increased neonatal mortality and morbidity, specifically an increased need for ventilation (evidence graded high) and that these babies were more likely to be admitted to neonatal intensive care units. For mothers, early birth was associated with an increased risk of induction or caesarean section, as well as decreased risk of chorioamnionitis. These results combined with the risks of early birth identified in the primary outcomes, suggest that the risks of early planned delivery are such that it should not be considered unless the mother or foetus is compromised. The risks associated with early planned delivery are directly linked to the gestational age of the foetus, therefore the best management strategy for these types of patients is expectant management, with close monitoring of mother and baby to ensure that any deterioration is identified and managed accordingly.

• Implications for Practice:

This management of pregnant women with preterm and prelabour rupture of membranes should be individualised. The maturity of the foetus and benefits of additional time in the womb need to be balanced against the risks associated with rupture of membranes. The risks to the foetus identified in this review were associated with prematurity. Therefore expectant management that includes

careful observation should be the priority for all patients unless complications necessitate early delivery through induction or a caesarean section.

- ## References:

Bond DM, Middleton P, Levett KM, van der Ham DP, Crowther CA, Buchanan SL, Morris J. Planned early birth versus expectant management for women with preterm prelabour rupture of membranes prior to 37 weeks' gestation for improving pregnancy outcome, Cochrane Database of Systematic Reviews 2017, Issue 3. Art. No: CD004735. DOI: 10.1002/14651858. CD004735.pib4.