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# [Intervention Review]

# Assessment and support during early labour for improving birth outcomes

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# ABSTRACT

# Background

Progress in early labour is usually slow and may include painful uterine contractions. Women may feel distressed and lose their confidence during this phase. Support and assessment interventions have been assessed in two previous Cochrane Reviews. This review updates and replaces these two reviews.

### Objectives

To investigate the effect of assessment and support interventions for women during early labour on the duration of labour, the rate of obstetric interventions, and on other maternal and neonatal outcomes.

#### Search methods

We searched the Cochrane Pregnancy and Childbirth Group's Trials Register, ClinicalTrials.gov, the World Health Organization (WHO) International Clinical Trials Registry Platform (ICTRP) (31 October 2016) and reference lists of retrieved studies.

#### **Selection criteria**

Randomised controlled and cluster randomised trials of any assessment or support intervention in the latent phase of labour.

#### Data collection and analysis

Two review authors independently assessed trials for inclusion and risk of bias, and extracted data. We resolved any disagreement by discussion or by involving a third assessor. The quality of the evidence was assessed using the GRADE approach.

#### **Main results**

We included five trials including 10,421 pregnant women and a cluster randomised trial with 2183 women. Trials were conducted in the UK, Canada and America and compared interventions in early labour versus usual care. We examined four comparisons: early labour assessment versus immediate admission to hospital; home visits by midwives versus usual care (telephone triage); one-to-one structured midwifery care versus usual care and hospital assessment using an algorithm for labour diagnosis versus usual assessment. Trials were at moderate- risk of bias mainly because blinding women and staff to these interventions is not generally feasible. For important outcomes

we assessed evidence using GRADE; we downgraded evidence for study design limitations, imprecision, and where we carried out metaanalysis, for inconsistency.

One trial with 209 women compared early labour assessment with direct admission to hospital. Duration of labour from hospital admission was reduced for women in the assessment group (mean difference (MD) -5.20 hours, 95% confidence interval (CI) -7.06 to -3.34; 209 women, *low-quality evidence*). There were no clear differences between groups for caesarean section or instrumental vaginal birth (risk ratio (RR) 0.72, 95% CI 0.30 to 1.72, *very low quality evidence*; and, RR 0.86, 95% CI 0.58 to 1.26, *very low quality evidence*, respectively). Serious maternal morbidity was not reported. Women in the early assessment group were slightly less likely to have epidural or oxytocin for labour augmentation (RR 0.87, 95% CI 0.78 to 0.98, *low-quality evidence*; RR 0.57, 95% CI 0.37 to 0.86, respectively) and increased satisfaction with their care (MD 16.00, 95% CI 7.53 to 24.47). No babies were born before admission to hospital and only one infant had a low Apgar score at five minutes after the birth (*very low quality evidence*). Admission to neonatal intensive care (NICU) was not reported.

Three studies examined home assessment and midwifery support versus telephone triage. One trial reported the duration of labour; home visits did not have any clear impact compared with usual care (MD 0.29 hours, 95% CI -0.14 to 0.72; 1 trial, 3474 women, *low-quality evidence*). There were no clear differences for the rate of caesarean section (RR 1.05, 95% CI 0.95 to 1.17; 3 trials, 5170 women;  $l^2 = 0\%$ ; *moderate-quality evidence*) or instrumental vaginal birth (average RR 0.95, 95% CI 0.79 to 1.15; 2 trials, 4933 women;  $l^2 = 69\%$ ; *low-quality evidence*). One trial reported birth before arrival at hospital; there was no clear difference between the groups (RR 1.33, 95% CI 0.30 to 5.95; 1 trial, 3474 women). No clear differences were identified for serious maternal morbidity (RR 0.93, 95% CI 0.61 to 1.42; 1 trial, 3474 women; *low-quality evidence*), or use of epidural (average RR 0.95, 95% CI 0.57 to 1.05; 3 trials, 5168 women;  $l^2 = 60\%$ ; *low-quality evidence*). There were no clear differences for NICU admission (average RR 0.84, 95% CI 0.50 to 1.42; 3 trials, 5170 infants;  $l^2 = 71\%$ ; *very low quality evidence*), or for low Apgar score at five minutes (RR 1.19, 95% CI 0.71 to 1.99; 3 trials, 5170 infants;  $l^2 = 0\%$ ; *low-quality evidence*).

One study (5002 women) examined one-to-one structured care in early labour versus usual care. Length of labour was not reported. There were no clear differences between groups for caesarean section (RR 0.93, 95% CI 0.84 to 1.02; 4996 women, *high-quality evidence*) instrumental vaginal birth (RR 0.94, 95% CI 0.82 to 1.08; 4996 women, *high-quality evidence*), or serious maternal morbidity (RR 1.13, 95% CI 0.84 to 1.52; 4996 women, *moderate-quality evidence*). Use of epidural was similar in the two groups (RR 1.00, 95% CI 0.99 to 1.01; 4996 women, *high-quality evidence*). For infant outcomes, there were no clear differences between groups (admission to NICU: RR 0.98, 95% CI 0.80 to 1.21; 4989 infants, *high-quality evidence*; low Apgar score at five minutes: RR 1.07, 95% CI 0.64 to 1.79; 4989 infants, *moderate-quality evidence*).

A cluster randomised trial with 2183 women examined a labour diagnosis tool used by midwives compared with usual assessment. There were no clear differences between groups for most of the outcomes measured. Interventions in labour (augmentation with oxytocin (RD 0.3, 95% CI -9.2 to 9.8), epidural (RD 2.1, 95% CI -8.0 to 12.2), instrumental or caesarean birth (spontaneous vertex birth RD -3.2, 95% CI -15.1 to 8.7)) were similar between groups after adjustment for baseline differences between maternity units. Women in the intervention group were less likely to be admitted to hospital at first presentation. There were no clear differences between groups for infant outcome.

# **Authors' conclusions**

Assessment and support in early labour does not have a clear impact on rate of caesarean section or instrumental birth, or birth before arrival at hospital. However, some evidence suggested that interventions may have an impact on reducing the use of epidural, and on increasing maternal satisfaction with care. Evidence on the use of oxytocin for labour augmentation was mixed. Evidence about the effectiveness of early labour assessment versus immediate admission was very limited and more research is needed in this area.

# PLAIN LANGUAGE SUMMARY

# Assessment and support during early labour for improving birth outcomes

# What is the issue?

Progress in early labour may be slow. Women identify onset of labour from various signs including painful contractions and blood-stained vaginal loss and may seek advice from health professionals about progress of their labour and for reassurance. Women may be advised to stay at home for as long as possible, or be sent home from hospital because their labour is not established. However, if progress in labour is more rapid than expected, delayed admission may result in an unplanned home birth.

# Why is this important?

Women may feel anxious or distressed in early labour and lose confidence; this may slow progress and women may be less likely to experience a normal birth. In this review we evaluated whether assessment and providing support to women during early labour affected the duration of labour, the need for interventions and other outcomes.

# What evidence did we find?

We searched the medical literature (31 October 2016). We included five randomised controlled trials, involving 10,421 women from Canada, the USA, and the UK and a trial where maternity units were randomised in Scotland UK with 2183 women. The quality of the evidence ranged from very low to high for different outcomes.

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One trial (209 women) compared assessment with direct admission for women arriving at hospital. Women in the assessment group had shorter labours in hospital (*low-quality evidence*). There were no clear differences between groups for caesarean or instrumental vaginal birth (i.e. forceps or ventouse) (*very low quality evidence*). Serious complications were not reported. Women in the assessment group were slightly less likely to have an epidural (*low-quality evidence*), or labour augmentation with oxytocin, and had increased satisfaction with their care. No babies were born before admission to hospital. Admission to neonatal special care was not reported.

Three studies examined home midwifery support versus telephone triage. Home visits did not appear to have any clear impact on the length of labour in one trial (*low-quality evidence*). There was no clear difference between groups for caesarean (three trials, *moderate-quality evidence*) or instrumental vaginal birth (two trials, *low-quality evidence*). One trial reported birth before hospital arrival; there was no clear difference for this outcome or for serious maternal morbidity (*low-quality evidence*), or use of epidural (three trials, *low-quality evidence*). There were no clear differences for neonatal admission to special care (*very low quality evidence*), or for low Apgar score at five minutes after birth (*low-quality evidence*).

One-to-one structured care in early labour versus usual care was examined in one study with 5002 women. Length of labour was not reported. There were no clear differences between groups for the rate of caesarean, instrumental vaginal birth (*high-quality evidence*), or serious maternal morbidity (*moderate-quality evidence*). Use of epidural was similar in the two groups (*high-quality evidence*). For infant outcomes, there were no clear differences between groups for admission to special care (*high-quality evidence*) or low Apgar score (*moderate-quality evidence*).

A trial with 2183 women where maternity units were randomised examined very strict criteria for labour diagnosis compared with usual midwifery assessment. There were no clear differences between women and babies in the two groups for most outcomes. Interventions in labour (augmentation with oxytocin, epidural, instrumental or caesarean birth) were similar once baseline differences between maternity units had been taken into account. Women in the intervention group were less likely to be admitted to hospital in labour at first presentation. There were no clear differences between groups for infant outcomes.

#### What does this mean?

Assessment and support in early labour does not have a clear impact on rate of caesarean or instrumental vaginal birth, or whether babies are born before arrival at hospital. However, some evidence showed that these interventions may have an impact on reducing the use of epidural, the need to augment labour with oxytocin and on increasing maternal satisfaction. Evidence about the effectiveness of early labour assessment versus immediate admission was very limited and more research is needed on this.