

**Introduction** Inflammation (with or without infection) has a firm causal link and defined molecular pathophysiology for preterm birth (PTB) with histological chorioamnionitis (CA) being a sensitive and specific marker. The innate immune system uses Toll-like receptors (TLRs) to recognise different microorganisms. This study profiles TLR signalling in fetal membranes from PTBs with and without CA.

**Methods** Fetal membrane explants were collected from 3 groups of women; term spontaneous labour without CA (TSL<sup>CA</sup>) (n = 10), PTB < 34 weeks without CA (PTB<sup>-CA</sup>) (n = 8), PTB < 34 weeks with CA (PTB<sup>+CA</sup>) (n = 13). CA was determined by Redline criteria (maternal inflammatory response  $\geq$  stage 2). Membranes were separated into amnion and chorion and RNA extracted. Profiling arrays were used to determine the expression profile of 84 genes associated with TLR signalling. Individual genes shown to be significantly up or down regulated ( $P < 0.1$ ; fold change  $> 2$ ) were selected for validation by qPCR.

**Results** In the amnion 11 genes were differentially expressed (6 between PTB<sup>+CA</sup> and TSL<sup>CA</sup> and 5 between PTB<sup>+CA</sup> and PTB<sup>-CA</sup>). In the chorion 16 genes were differentially expressed (6 between PTB<sup>+CA</sup> and TSL<sup>CA</sup> and 10 between PTB<sup>+CA</sup> and PTB<sup>-CA</sup>). Validation confirmed increased expression of TLR1 in amnion ( $p = 0.03$ ) and chorion ( $p = 0.001$ ) and increased expression of TLR2 in amnion ( $p = 0.04$ ) and chorion ( $p = 0.0005$ ) in PTB<sup>+CA</sup> compared with TSL<sup>CA</sup> (Figure 1).

**Conclusion** These data show a correlation between the presence of CA and up-regulation of TLR1 and TLR2, but not TLR6. These novel findings have implications for both the identity of the microorganisms and the mechanism(s) contributing to inflammation associated with PTB with CA.

**PL.03 SELF-ADMINISTRATION OF MISOPROSTOL TO PREVENT BLEEDING AFTER HOMEBIRTHS IN UGANDA: A PILOT PLACEBO-CONTROLLED, RANDOMISED TRIAL**

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**Objective** To pilot a study of self-administered misoprostol after home delivery for postpartum haemorrhage (PPH) prevention.

**Design** A pilot placebo-controlled, double-blind randomised trial

**Participants** Pregnant women at least 34 weeks of gestation living in Mbale district Uganda were recruited at four health facilities. High-risk women and women planning to deliver in facilities were included.

**Intervention** Pregnant women attending the clinics over a 2-month period were randomised to receive either misoprostol (600  $\mu$ g) or identical placebo to be self-administered orally only if they did not reach a facility for delivery. Each woman was trained on medication use and the importance of PPH. After delivery, the women were visited at home and outcome and safety data collected.

**Results** 748 women were randomised to either 600  $\mu$ g misoprostol (n = 374) or placebo (n = 374). 93% of women were followed up and 80% of drug packets (both used and unused) were retrieved. 56.7% of women took the study medication. Medication was taken before delivery in 2 women (both in the misoprostol group) and no harm was reported. The primary outcome (fall in Hb  $> 20\%$ ) occurred in 7.3% of recruits. There were no significant differences between the groups in the rate of postnatal anaemia or self-reported blood loss. There was significantly more self-reported fever and shivering in the misoprostol group but acceptability of side effects was high.

**Conclusion** A randomised trial of self-administered misoprostol is feasible, and the pilot did not reveal major safety concerns with advanced distribution of misoprostol for self-administration.

**PL.04 REDUCING CAESAREAN SECTION RATES THROUGH CHOICE AND COLLABORATION**

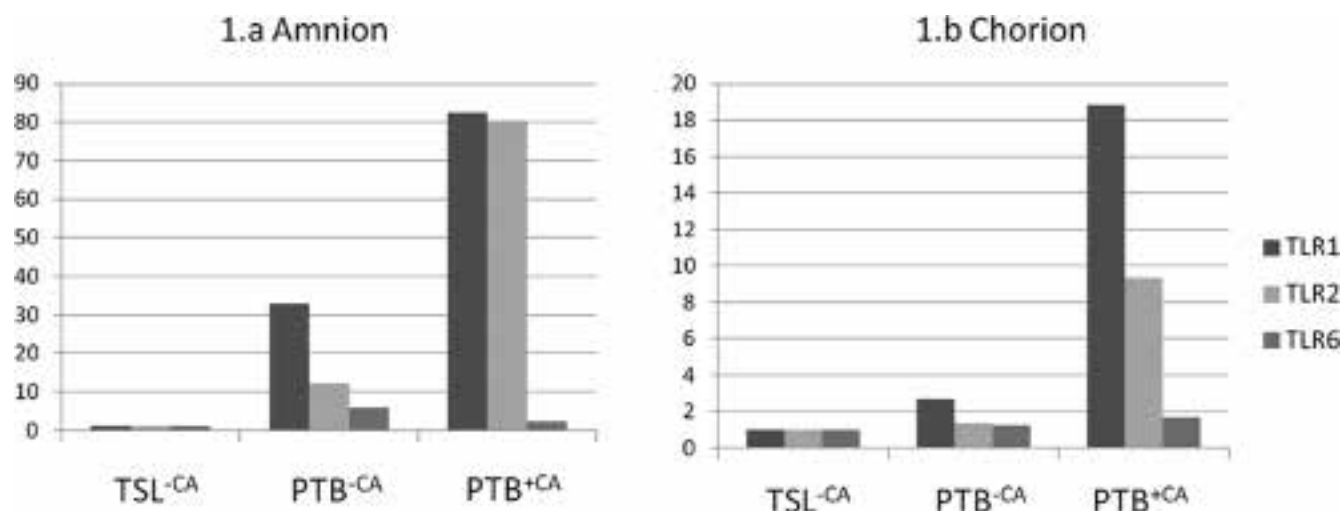
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East Lancashire Maternity services underwent a major service reconfiguration in November 2010, moving from two Consultant led units to one consultant unit and 3 midwifery led birth centres. This service now has nearly 7000 births per year, nearly a third of which are born in the birth centres.

This transformational development was achieved through a shared ethos and philosophy about childbirth and through close collaboration between obstetricians, anaesthetists, midwives and neonatologists on clinical guidelines, operational policies and clinical care. The reconfiguration has also led to a doubling of consultant presence time on our labour ward.

Our Caesarean section rates pre and post reconfiguration:



**Abstract PL.02 Figure 1** Chorioamnionitis: Changes in gene expression

## Abstract PL.04 Table

Jan	Feb	Mar	Apr	May	Jun	Total C/S rate for first 6 months of 2010
25.8%	26.9%	24.4%	27.4%	26.0%	26.3%	26.1%
Jan	Feb	Mar	Apr	May	Jun	Total C/S rate for first 6 months of 2012
22.2%	22.2%	20.0%	23.0%	21.0%	21.0%	21.5%

Robson Group analysis of these rates demonstrate the greatest reductions in caesarean sections for term nullip women in spontaneous labour, for nulli- and multiparous women in induced labour, and for women with multiple pregnancies.

As confirmed by the Birthplace study<sup>1</sup>, the introduction of birth centres has led to a reduction in caesarean section for low risk women. Furthermore, we postulate that the increased Consultant presence on labour ward has increased confidence in vaginal operative delivery and CTG interpretation, reducing the need for caesarean section.

# PL.05 USE OF QUANTITATIVE FETAL FIBRONECTIN FOR PREDICTION OF SPONTANEOUS PRETERM BIRTH IN HIGH RISK ASYMPTOMATIC WOMEN

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**Introduction** Prediction of spontaneous preterm birth (sPTB) remains a challenge in obstetrics. Fetal fibronectin (fFN) is a strong negative predictor of sPTB (Berghella *et al*, 2008). Quantitative measurements of fFN may provide additional discriminatory information, improve positive prediction and be more clinically useful in predicting risk and outcome. The aim of this study was to determine if risk of sPTB correlated with concentration of fFN.

**Study design** A prospective blinded study of cervico-vaginal fFN concentration (ng/mL) in asymptomatic women considered at high risk of spontaneous preterm birth ( $n = 744$ ; 22–27<sup>+</sup>6 weeks) using a 10Q analyser (Hologic®). Clinicians were blinded to the result until post-delivery but the qualitative TL<sub>IQ</sub> (Hologic®) fFN result was made available.

**Results** The rate of sPTB (<34 weeks) was lowest (2%) for women with concentrations 0–9 ng/mL, and highest for those with concentrations  $\geq 200$  ng/mL (31%). Compared to <10 ng/mL fFN, the relative risk of delivery was: (10–49 ng/mL) 4.3 (95% CI 0.03 to 0.13), (50–199 ng/mL) 4.3 (95% CI 0.005 to 0.15), ( $\geq 200$  ng/mL) 13 (95% CI 0.16 to 0.42). The positive predictive value for sPTB (<34 weeks) increased from 15, 19, 31% with increasing thresholds (10, 50, 200 ng/mL respectively), yet negative prediction remained >95%.

**Conclusion** Risk of sPTB is increased for concentrations above 10 ng/mL. Quantitative fFN provides additional thresholds (10 and 200 ng/mL) over the qualitative method (50 ng/mL) to discriminate risk of sPTB in high risk asymptomatic women.

# PL.06 TREATMENT FOR PRIMARY POSTPARTUM HAEMORRHAGE – A COCHRANE SYSTEMATIC REVIEW

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<sup>1</sup>Perinatal and maternal outcomes by planned place of birth for healthy women with low risk pregnancies: the Birthplace in England national prospective cohort study BMJ 2011; 343:d7400

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**Aim** To assess the effectiveness and safety of interventions used for the treatment of primary postpartum haemorrhage (PPH).

**Methods** We searched the Cochrane Pregnancy and Childbirth Group's Trials Register for randomised and quasi-randomised controlled trials for the treatment of primary PPH.

**Results** Twelve randomised clinical trials (RCT) with a total of 4060 participants fulfilled our inclusion criteria and were included in this review. Four RCTs (1483 participants) compared misoprostol with placebo given in addition to conventional uterotonics. Adjunct use of misoprostol to additional uterotonics had no impact on our primary outcomes including maternal mortality (risk ratio (RR) 6.16; 95% confidence interval (CI) 0.75 to 50.85), serious maternal morbidity (RR 0.34; 95% CI 0.01 to 8.31); admission to intensive care (RR 0.79; 95% CI 0.30 to 2.11), or hysterectomy (RR 0.93; 95% CI 0.16 to 5.41).

Two RCTs (1851 participants) compared 800 mcg sublingual misoprostol to oxytocin infusion as primary PPH treatment. Primary outcomes did not differ between the two groups. Five trials examined the effectiveness of oestrogen, tranexamic acid, lower segment compression and aortic compression devices, but were too small to assess impact on primary outcomes.

**Conclusion** Compared with misoprostol, oxytocin infusion is more effective and causes fewer side effects when used as the first-line therapy for the treatment of primary PPH. There is no evidence to suggest that misoprostol is effective as an adjunct to uterotonic treatment for primary PPH. Misoprostol should be considered as first-line uterotonic in settings where injectable oxytocics are not available.

# PL.07 MORBIDITY OF INTENDED BIRTH MODE AFTER PREVIOUS CAESAREAN SECTION

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**Aim** To compare clinical outcomes of two approaches to birth after primary caesarean; i) planning elective repeat caesarean section (ERCS) ii) planning to attempt vaginal birth after previous caesarean (VBAC), with outcomes of second and third pregnancies evaluated.

**Methods** The population of this retrospective cohort study was identified from the Aberdeen Maternity and Neonatal Databank. Those included were women and offspring of pregnancies following primary caesarean delivery between 1993 and 2007. Planned mode of delivery was ascertained using four recorded variables; gestation at delivery, induction of labour, actual mode of delivery and indication for emergency caesarean section.

**Main Outcomes** Mode of delivery, pre-eclampsia, antepartum haemorrhage, postpartum haemorrhage, bladder injury, scar rupture and hysterectomy in the women. Neonatal unit admission, hypoxic ischaemic encephalopathy and cerebral palsy in the offspring.

**Results** Of 2350 women identified, 1211 planned ERCS and 1139 planned to attempt VBAC. One in four women planning ERCS delivered by emergency caesarean section before their planned delivery date. Of those planning VBAC, 796 delivered vaginally. Women planning ERCS were less likely to experience pre-eclampsia {adjusted odds ratio (OR) 0.7 (95% confidence interval (CI) 0.6–0.9)}, antepartum haemorrhage {adjusted OR 0.7 (95% CI 0.5–0.9)} or postpartum haemorrhage {adjusted OR 0.5 (95% CI 0.4–0.7)} than those attempting VBAC. Neonatal unit admission was more likely if ERCS was planned {adjusted OR 1.3 (95% CI 1.1–1.6)}, but this was gestation-related.

**Conclusion** Delivery by repeat caesarean appears safer for women as the benefits of a slightly shorter duration of pregnancy include less morbidity associated with late pregnancy.