

Methods Five hundred and eleven women with uncomplicated, term, singleton pregnancies, underwent a pre-labour ultrasound assessment. This included measurement of fetal biometry, Umbilical artery, Middle cerebral artery, and Umbilical venous resistance indices. Clinicians managing the labour were blinded to the ultrasound results. Following delivery, case notes were reviewed and intra-partum outcomes correlated with ultrasound findings.

Results Infants born by Caesarean section for presumed fetal compromise had the highest Umbilical artery pulsatility index ($p = 0.002$), the lowest Middle cerebral artery pulsatility index ($p < 0.001$), the lowest cerebro-umbilical ratio ($p < 0.001$), the lowest Umbilical venous flow rates ($p = 0.003$), and the highest cerebral blood flow of any mode of delivery group ($p = 0.007$). A cerebro-umbilical ratio $< 10^{\text{th}}$ centile has a positive predictive value of 36% for Caesarean section for presumed fetal compromise. This can be improved to 61.5% by inclusion of the other Doppler parameters. A cerebro-umbilical ratio $> 90^{\text{th}}$ centile has a 100% negative predictive value.

Conclusion Pre labour fetal Doppler assessment can identify fetuses at both high and low risk of subsequent compromise in labour. Current intra-partum monitoring has a high false positive rate, which could be improved by better risk stratification prior to labour. This technique is easily translatable into clinical practise and would allow risk stratification of normal pregnancies prior to labour, enabling a more targeted approach to intra-partum care.

3.2 WHAT ARE THE INTRAPARTUM RISKS ASSOCIATED WITH OBESITY IN HEALTHY WOMEN WITHOUT ADDITIONAL RISK FACTORS? EVIDENCE FROM THE BIRTHPLACE IN ENGLAND NATIONAL PROSPECTIVE COHORT STUDY

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Maternal obesity is a risk factor for intrapartum complications but some risks may be attributable to the higher prevalence of co-morbidities. This study evaluated the impact of maternal obesity on outcomes requiring obstetric or neonatal care in otherwise low risk births.

Methods We analysed 17,230 women without additional risk factors planning obstetric unit birth in the Birthplace cohort. We adjusted for maternal characteristics using Poisson regression. We evaluated two composite outcomes capturing need for obstetric or neonatal care.

Results The risk of requiring obstetric care (augmentation, instrumental/emergency caesarean delivery, blood transfusion, 3rd/4th degree tear, high dependency care) tended to increase with BMI, but nulliparous women of normal weight had higher absolute risks and were more likely to require obstetric care than multiparous women of BMI $> 35 \text{ kg/m}^2$.

Abstract 3.2 Table Percentage receiving obstetric care and adjusted relative risks

BMI (kg/m ²)	Nulliparous (n = 8795)			Multiparous (n = 7857)		
	%	RR	(95%CI)	%	RR	(95%CI)
<18.5	45.6	0.94	(0.82–1.09)	14.6	0.87	(0.57–1.31)
18.5–24.9	52.9	1	-	17.7	1	-
25–29.9	55.7	1.04	(0.99–1.08)	20.2	1.16	(1.02–1.32)
30–35	60.2	1.12	(1.05–1.18)	21.3	1.22	(1.05–1.42)
35+	57.1	1.08	(0.99–1.18)	21.0	1.24	(0.97–1.59)

The perinatal composite (intrapartum stillbirth, early neonatal death or neonatal unit admission) exhibited a similar pattern: absolute perinatal risks were higher in nulliparous women of normal weight vs. multiparous women with BMI $> 35 \text{ kg/m}^2$ (3.7% vs. 2.9%).

Conclusions Otherwise healthy obese multiparous women have lower intrapartum risks than nulliparous women of normal weight. Planned birth in Alongside Midwifery Units may be safe for some multiparous women with BMI $> 35 \text{ kg/m}^2$.

3.3 A CLUSTER RANDOMISED TRIAL TO ENHANCE ASSESSMENT AND REPAIR OF BIRTH ASSOCIATED PERINEAL TRAUMA: THE PEARLS STUDY

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Background Birth associated perineal trauma affects millions of women worldwide. The aim of the Perineal Assessment and Repair Longitudinal Study (PEARLS) was to evaluate if an enhanced, cascaded training programme improved implementation of evidence-based practise in perineal assessment and repair and reduced subsequent maternal morbidity.

Methods PEARLS was a pragmatic matched pair cluster randomised controlled trial with 22 participating UK maternity units. Within each of the 11 matched pairs one unit was randomised to receive the intervention early (cluster A) and the other late (cluster B). Women sustaining a second-degree tear or episiotomy were eligible. Outcomes included pain on activity at 10–12 days postnatal, clinically reported outcomes by women and implementation of evidence-based surgical repair. Analysis was based on summary statistics at cluster level, using paired t-tests.

Results 1470 and 2211 women were recruited in groups A and B respectively. No significant difference in mean primary outcome was noted between clusters that had received the intervention and those who had not (0.7% 95% CI (-10.1%, 11.4%), $p = 0.89$), with the overall percentage of women being 77% and 74% respectively. Improvement was seen in implementation of evidence-based perineal management. A significant reduction was noted in mean percentages of women reporting wound infections and needing suture removal in the early intervention clusters.

Conclusion PEARLS is the first RCT to assess the impact of a 'hands-on' training package on implementation of evidence-based perineal trauma management and clinical outcomes for women. Findings will support improvements in clinical practise and women's longer-term health.

4.1 AMIPROM: A PILOT RCT ON SERIAL TRANSABDOMINAL AMNIOINFUSION VERSUS EXPECTANT MANAGEMENT IN VERY EARLY PROM (ISRCTN 8192589)

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Objective a randomised controlled multicentre pilot study to assess:

- the feasibility of recruitment and the retention through to long term follow up of participants with very early rupture of membranes.
- short- and long-term outcomes and data to inform a larger, definitive clinical trial.

Participants Women with singleton pregnancies and confirmed preterm prelabour rupture of membranes between 16⁺⁰ and 24⁺⁰ weeks gestation.