Pregnancy Outcome Prediction Study

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Background:
Major advances have been made in antenatal care in recent years with improvement in the identification of fetal abnormality, however the policy for screening low risk women for fetal growth restriction (FGR), pre-eclampsia or still birth has remained largely unchanged.

Aim:
For 5 years from January 2008 the Pregnancy Outcome Prediction Study, led by Professor G Smith, took place in the Cambridge CRF. The aim of this study was to develop biomarkers and evaluate these alongside serial ultrasound in predicting risk for adverse pregnancy outcome such as FGR, pre-eclampsia and stillbirth.

Methodology:
The methodology was a prospective cohort study aiming to recruit 4000 unselected primiparous women. The study involved a questionnaire, maternal blood samples, ultrasound (US) (blinded results), sampling of the placenta and membranes following birth and retrieval of outcome data. 4,512 women were recruited with 6.9% withdrawing or delivering elsewhere leaving a cohort of 4,200 women.

Results:
- The initial results from the study show a dramatic difference in the identification of FGR. The current policy has a sensitivity of approximately 32% for FGR. This study (when unblinded) showed a sensitivity of 77%.
- External funding has been secured, in excess of £2 million and collaboration with Roche agreed to enable future phenographic studies and the measurement of 5 biomarkers on all stored samples.
- As a direct result of positive patient experience feedback a midwife sonographer is undertaking an MPhil to explore patient experience & closer links with the Stillbirth & Neonatal Death charity (SANDS) have been established.

Conclusions:
The impact of these initial results cannot be underestimated as they have the potential to change NICE guidelines on the policy of ultrasound use in pregnancy the UK, and have directly led to further research being planned.

The study has added new information surrounding FGR and without the input of the Cambridge CRF this study could not have taken place and valuable obstetric knowledge would have not been obtained.

References:

Contribution of the NIHR CRF:
Without the contribution of the Cambridge CRF this study would not have taken place. The Cambridge CRF provided two dedicated rooms (for the midwives to use), a phlebotomy room and nurses to facilitate this study. 4,200 women attended for four visits, midwives performed the visit, including U/Ss and the Cambridge CRF nurses the phlebotomy service and processing of samples.

The ability of the Cambridge CRF to provide dedicated space and nursing support was invaluable to the study being able to take place as the obstetric service could not accommodate the large volume of extra visits and phlebotomy required. Alongside this it provided a facility which was described as being the most positive experience that the mothers had during their pregnancy, throughout all their visits to the hospital.