

**PF.35 THE MISSING LINK: COMBINING FETAL MEDICINE AND NEONATOLOGY DATASETS TO IMPROVE SERVICE EVALUATION**

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**Introduction** As obstetricians, we are in danger of losing touch with our patients as they transition out of our care. The Fetal Medicine Unit (FMU) at University Hospitals Coventry and Warwickshire manage many at-risk pregnancies each year, and effective communication with the neonatology department ensures best care at delivery. However, there has been no system in place for regular review of patient outcomes. We proposed to develop a database, available to both departments, providing key information regarding events pre- and post-delivery, in order to improve quality of care through enablement of efficient audit and service evaluation.

**Methods** As a pilot, we collected data on pregnancies managed by the FMU between January and September 2012. Pregnancies were categorised according to reason for initial FMU referral. Obstetric data was collected from the Viewpoint database; neonatal from medical notes. We worked with the IT department to create a shared work space on the hospital intranet, which was then accessed for audit.

**Results** We identified 92 relevant pregnancies. The majority of FMU referrals were for increased Combined Risk Ratios (14%) or Gastrointestinal Tract abnormalities (14%). Two service evaluations have already been completed using data from the database, and we have received positive feedback from both departments.

**Conclusions** The database successfully provides a platform from which regular audits and service evaluations can be made between the FMU and neonatology department. We plan to maintain this database, allowing us to provide parents with updated local neonatal outcomes, and to better enable clinicians to review and reflect.

**PF.36 AUDIT OF CONGENITAL CENTRAL NERVOUS SYSTEM (CNS) ANOMALIES: PATTERNS OF REFERRALS AND SERVICE IMPLICATIONS AFTER THE INTRODUCTION OF FIRST TRIMESTER SCREENING AND SECOND TRIMESTER ANOMALY ULTRASOUND IN SOUTH EAST SCOTLAND**

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67 cases of fetal CNS anomalies from January 2010 – December 2011 were retrospectively reviewed. 80.6% from within the tertiary unit, and 19.4% referred from district general hospitals.

**Abstract PF.36 Table**

Most common reasons for referral	Suspected neural tube defect 17.9% Increased AFP 16.4% Isolated ventriculomegaly 13.4% Anencephaly 11.9% Increased nuchal translucency 6%
Mean gestation at referral	17 + 6 weeks
First FM appointment	2 days after referral
Average number of FM scans	2.8 scans For terminations = 1.5 scans For continuing pregnancies = 5.9 scans
Additional system anomalies	13 cases

Further investigations included chromosomal diagnosis; 1 CVS (normal), 7 amniocentesis (5 abnormal), 7 declined. Serology showed 3 positive for cytomegalovirus IgM. Fetal MRI was performed in 19 cases (28.4%) at average gestation 25+3. A second MRI in 2 cases (2.9%) at average gestation of 31+6. MRI was declined in 4 cases (5.9%). MRI confirmed the diagnosis or added additional information in 84.2%.

Pregnancy outcomes were 23 livebirths, 43 terminations (5 fetocide) and 2 neonatal deaths. Post-mortem was performed in 55.2% of cases (86.1% of terminations). The findings added information in 40% of cases, including 4 further chromosomal abnormalities. Of the livebirths, 43.4% of babies were admitted to the Neonatal ICU with an average hospital admission of 21 days. Postnatal USS was performed in 82.6% and MRI in 52.2%. 82.6% had outpatient follow-up: 21.7% had a normal outcome, 21.7% showed global or isolated motor delay, and 13.1% were deceased. All were too early for a formal Baileys 2 year outcome.

The management of congenital CNS anomalies requires significant multidisciplinary care, sequential USS and often additional MRI. This audit had added information which can inform the care pathway.

**PF.37 MIDDLE CEREBRAL ARTERY DOPPLERS IN A LOW-RISK POPULATION**

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**Objective** To construct reference intervals for middle cerebral artery Doppler indices in a low-risk population.

**Study design** This was a prospective, cross-sectional study involving low-risk women attending Cork University Maternity Hospital conducted concurrently with a primary study to construct normograms for fetal biometry. Women were recruited from their first trimester dating scan and randomly allocated to a single scan between 14–40 weeks gestation. Scans were performed by a sole researcher. Gestation was calculated using the estimated due date assigned by dating scan. Recruits were Irish Caucasian women with a singleton pregnancy. Women with conditions affecting placental function including hypertension, pre-eclampsia, renal disease, autoimmune disorders and diabetes mellitus were excluded. Fetuses at risk of anaemia were excluded as were fetuses with congenital anomalies. Middle cerebral artery Dopplers were sampled using the Voluson E8 ultrasound by GE Healthcare.

**Results** Nine-hundred-and-fifteen women were recruited. Seven-hundred-and-ninety-three women met the inclusion criteria and were scanned as per protocol. Median maternal age was 32 (range 17–44). Median BMI was 24.7 (range 17.1–48.6). Nulliparous women constituted 46.5% (369/793) of recruits, 32.6% (261/793) were expecting their second child, 18.3% (145/793) were expecting their third or fourth child, while only 2.3% (18/793) were grand multiparous. Reference intervals for middle cerebral artery peak systolic velocity (PSV) and pulsatility index (PI) were generated for this population.

**Conclusion** We have constructed reference interval for middle cerebral artery Doppler indices from 16 to 40 weeks in a low-risk population using up-to-date ultrasound equipment.

**PF.38 UPTAKE OF FREE FETAL DNA FOR ANEUPLOIDY SCREENING IN WOMEN OF ADVANCED MATERNAL AGE**

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