PP.03 DOES THE APGAR SCORE MATTER? INVESTIGATING THE RELATIONSHIP BETWEEN A LOW SCORE AND ADVERSE OUTCOMES FROM BIRTH TO CHILDHOOD

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[2]GL Malin, [1]RK Morris, [4]S Ahmad, [1]R Riley, [3]KS Khan. *[1]University of Birmingham, Birmingham, UK; [2]University of Nottingham, Nottingham, UK; [3]The Blizard Institute, Barts and the London School of Medicine, London, UK; [4]The Royal Derby Hospital, Derby, UK*

Background A low Apgar score at birth may occur for a variety of reasons. Existing evidence regarding the long term implications is conflicting.
Methods Systematic review of the literature, with random effects meta-analysis.
Results 87 manuscripts were included, with a total of 3,690,080 neonates. A low Apgar score was strongly associated with neonatal mortality in a population born at term (≥ 37 weeks gestation), or with normal birth weight (≥ 2.5 kg) (10 minute Apgar score ≤ 3: OR 1417.75, 95% CI 915.99 to 2194.36). Raising the Apgar score at a particular time reduced the strength of association. In a pre-term population, the association was smaller (10 minute score ≤ 3: OR 66.49, 95% CI 45.00 to 98.22). For neonatal morbidity, significant association was seen at a number of thresholds. In a term population, there was a significant association between a low Apgar score and cerebral palsy at all thresholds examined, with the largest association seen at a 5 minute Apgar score ≤ 3 (3 studies, OR 46.35, 95% CI 11.21 to 191.59). When the predictive ability of a low Apgar score was considered, the specificity and positive likelihood ratios were generally high, however the corresponding sensitivity and negative likelihood ratios were low.
Conclusion A low Apgar score at birth is strongly associated with neonatal mortality, morbidity and childhood cerebral palsy, particularly in a term or normal birth weight population. Further research is required to identify the threshold at which the Apgar score may best predict adverse outcomes.

PP.04 ANTENATAL CORTICOSTEROIDS, FOR WOMEN WITH DIABETES, UNDERGOING ELECTIVE LOWER UTERINE SEGMENT CAESAREAN SECTION BETWEEN 38 + 0–38 + 6, ARE THEY WORTH IT?

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K Hodson, C Lyon-Dean, S Marshall, M MacDougall. *Royal Victoria Infirmary, Newcastle upon Tyne, UK*

Background The Royal College of Obstetricians and Gynaecologists (RCOG) recently recommended antenatal corticosteroids for all women undergoing elective lower uterine segment caesarean section (El-LSCS) prior to 38^{+6} weeks. National Institute for Health and Clinical Excellence recommend delivery for women with diabetes at 38^{+0} weeks. Corticosteroids can destabilise maternal glycaemic control. The purpose of this study was to assess the outcomes in women with diabetes undergoing El-LSCS between 37^{+6} and 38^{+6} weeks who did not receive antenatal corticosteroids prior to the RCOG guideline.
Methods We performed a retrospective audit of 27,869 consecutive live births in a tertiary referral hospital. We calculated admission rates to Special Care Baby Unit (SCBU) in those undergoing El-LSCS without corticosteroids, identifying presence of diabetes, type of diabetes and gestation at delivery.
Results 32% (n = 985/3016) of El-LSCS were performed prior to 38^{+6} weeks in the general population. In the diabetic population 70% (n = 51/72)of El-LSCS were performed prior to 38^{+6} weeks. 41.6% (n = 30/72)of which were performed between 38^{+0}–38^{+6} weeks.

The admission rate to SCBU in the diabetic population undergoing El-LSCS was 1.38%, lower than both the 4.7% rate in the general population undergoing El-LSCS and the 2.7% overall rate in the diabetic population. No women with diabetes undergoing El.LSCS after 37^{+6} weeks had a baby admitted to SCBU despite not receiving corticosteroids.
Conclusion The admission rates to SCBU observed in babies born to mums with diabetes delivering between 38^{+0}–38^{+6} by El-LSCS without corticosteroid cover, does not support their routine administration in this population, especially given the destabilising effect they have on glycaemic control.

PP.05 WITHDRAWN BY AUTHOR

PP.06 UK OBSTETRIC CRITICAL CARE PROVISION REMAINS UNFIT FOR PURPOSE

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[1]A Saunders, [1]F Jones, [4]A Carlin, [3]H Scholefield, [2,5]MK Whitworth. *[1]University of Manchester, Manchester, UK; [2]St Mary's Hospital CMFT, Manchester, UK; [3]Liverpool Women's Hospital, Liverpool, UK; [4]John Hunter Hospital, Newcastle, Australia; [5]Maternal & Fetal Health Research Centre, University of Manchester, Manchester, UK*

Background Successive confidential enquiries have recommended that obstetric critical care (OCC) patients be cared for in a level 2 setting with adequate facilities and trained staff. In 2007 we conducted the first national survey of UK OCC provision and demonstrated major, potentially life threatening deficiencies. We aim to see if OCC provision in 2012 is fit for purpose.
Method We conducted a validated survey of 227 maternity units in the UK (May-July 2012).
Results 137 questionnaires were returned (response rate-60%). Mean number of deliveries/year was 4076 (200–9867). 57% of units report having designated OCC bed provision (56% in 2007 $p = 0.88$). Median provision is two beds/unit compared with one in 2007. Nursing care is provided solely by midwives in 71% of units (95% in 2007, $p < 0.05$). 76% of these midwives have some formal in-house or external OCC training (33% in 2007, $p < 0.05$). Joint medical care is provided by obstetricians and anaesthetists in 89% of units (72% in 2007, $p < 0.05$). However, of those units claiming to have designated OCC capacity 32% were unable to provide one or more of the elements required for level 2 care e.g. arterial line management. The main issues identified by responding units remain the need for; better facilities and equipment, formal OCC training, improved staffing.
Conclusions Our survey suggests there is a lack of knowledge about OCC and provision remains unfit for purpose. We remain a long way from providing equity of critical care for pregnant women as recommended by the joint RCOG/RCA document of 2011.

PP.07 EARLY FETAL LOSS IN MONOCHORIONIC AND DICHORIONIC TWIN PREGNANCIES: THE STORK MULTIPLE PREGNANCY COHORT

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F D'Antonio, A Khalil, T Dias, A Bhide, B Thilaganathan. *Fetal Medicine Unit, Division of Developmental Sciences, ST. George's Univeristy of London, London, UK*

Objectives The aim of this study is to compare the early perinatal loss rates between MC and dichorionic (DC) twins in an era of invasive treatment for TTTS.
Methods This was a retrospective study of all twin pregnancies of known chorionicity from a large regional cohort of 9 hospitals over a ten year period. Ultrasound data were matched to hospital delivery records and a mandatory national register of pregnancy losses. Prospective risk of pregnancy loss from 14 to 24 weeks' gestation was calculated and the survival trend of MC and DC twins was analysed using Kaplan-Meier survival analysis.

Results The analysis included 3117 twin pregnancies (605 MC and 2512 DC). The total risk of early pregnancy loss (miscarriage and neonatal death) before 24 weeks in MC twins (60.3 per 1000 fetuses) was significantly higher than in DC twins (6.5 per 1000 fetuses), with a hazard ratio (HR) of 9.18 (95% CI, 6.0–13.9). Survival analysis showed a significant difference in overall and early mortality between MC and DC twins (Log-rank test, $p < 0.0001$), while no difference was noted after 24 weeks of gestation (Log-rank test, $p = 0.08$).

Conclusions Early pregnancy loss is significantly more common in MC than in DC twins, but the trend in prospective risk of mortality in MC twins is not evident after 24 weeks' gestation. This rate has almost halved compared to those in the published literature. Early detection and prompt treatment of complications in MC twins is likely to have contributed to this improvement in outcomes.

PP.08 MANCHESTER ADVANCED MATERNAL AGE STUDY (MAMAS) – DOES AN AGEING MATERNAL ENVIRONMENT AND ALTERED PLACENTAL FUNCTION EXPLAIN HIGHER RISK OF POOR PREGNANCY OUT COME IN ADVANCED MATERNAL AGE?

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SC Lean, AL Heazell, TA Mills, J Boscolo-Ryan, L Peacock, RL Jones. *University of Manchester, Manchester, UK*

Background Women of advanced maternal age (AMA; ≥35 years) have increased risk of fetal growth restriction and stillbirth. The aetiology is unknown; however both conditions are linked with placental dysfunction, including reduced nutrient transport and altered placental morphology. Ageing is associated with increased systemic inflammation; whether this contributes to poor pregnancy outcome is unknown. We hypothesise an ageing maternal environment adversely affects placental function, resulting in poor pregnancy outcome.

Methods Women (20–30, 35–39 and ≥40 years) with singleton pregnancies are being recruited to MAMAS. Maternal serum samples are collected at 28 and 36 weeks gestation for measurement of inflammatory markers by ELISA. Placental function is assessed by amino acid uptake by placental villous tissue. Placental morphology was quantified by density of Syncytial Nuclear Aggregates (SNA's), fetal capillaries and quantification of proliferation.

Results Preliminary ELISA analysis of 40 samples revealed lower anti-inflammatory cytokine interleukin-10 (IL-10) in maternal serum of women ≥35 ($p = 0.016$, Kruskal-Wallis test). Other cytokines were unchanged. Preliminary data suggests higher placental uptake of taurine in women ≥35, but system A activity appears unaltered. SNA's were increased, but vascularity and proliferation were unchanged in placentas from women ≥35 ($p < 0.05$ Kruskal-Wallis test).

Conclusion MAMAS is the only prospective observational study investigating AMA and placental function. Preliminary data indicate accelerated placental ageing with increased SNA and an altered maternal environment with reduced anti-inflammatory cytokines. Understanding the mechanisms underlying AMA and pregnancy complications may help improve outcome for these women. Measuring circulating biomarkers of ageing prenatally may enable detection of high risk pregnancies.

PP.09 FOLIC ACID SUPPLEMENTATION AND RISK OF INTRAUTERINE GROWTH RESTRICTION (IUGR)

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[1]RK Morris, [2]M Southam, [2]J Gardosi, [1]K Ismail. *[1]University of Birmingham, Birmingham, UK; [2]West Midlands Perinatal Institute, Birmingham, UK*

Objective To determine whether there is a reduction in the risk of IUGR with folic acid supplementation.

Design A retrospective cohort study using the West Midlands Perinatal Institute population based database.

Setting West Midlands, UK.

Participants Births to West Midlands residents (July 2009-June 2012). Multiple pregnancies and congenital anomalies were excluded.

Main Outcome Measures Prevalence and relative risk of IUGR, defined as birth weight <10th customised centile with 95% confidence intervals.

Results There were n = 117260 births with data for folic acid supplementation antenatally, of which 85% of women reported taking folic acid. Nullips constituted 42.6% of the cohort overall and 44% of those that took folic acid antenatally. For those women where the dose of folic acid was recorded (n = 42537), 95% took a dose of 400 mcg, 4% at 5 mg and 1% at other dose. For timing of folic acid supplementation, 26% commenced pre-conception, 34% at <5 weeks, 35% at 5–10 weeks and 5% at a later gestation. There were n = 60077 cases with complete pregnancy and demographic data allowing a logistic regression analysis adjusted for maternal age, smoking, hypertension, deprivation, ethnicity, employment status, diabetes (including gestational), BMI, single/partner, drug use, father blood relation, time of booking and parity. The risk of IUGR for women with no folic acid supplementation was prevalence13%, RR 1.09 (1.03–1.16), $p < 0.01$. For women that took folic acid, only the 400 mcg dose taken pre-conception showed a significant reduction, prevalence 9.7%, RR 0.90 (0.83–0.98) $p = 0.01$.

Conclusion Folic acid supplementation pre-conception significantly reduces the risk of IUGR.

PP.10 CRL DISCORDANCE AND ADVERSE PERINATAL OUTCOME IN TWINS THE STORK MULTIPLE PREGNANCY COHORT

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F D'Antonio, A Khalil, T Dias, A Bhide, B Thilaganathan. *Fetal Medicine Unit, Division of Developmental Sciences, ST. George's Univeristy of London, London, UK*

Background The role of first trimester ultrasound in predicting the outcome in twin pregnancies is conflicting. The aim of this study is to determine the association between crown-rump length (CRL) discordance and adverse perinatal outcome in twin pregnancies.

Methodology CRL discordance was related to early fetal loss <20, <24 weeks, perinatal mortality, birth weight (BW) and ultrasound estimated fetal weight (USS EFW) discordance ≥25%, intrauterine growth restriction (IUGR) and preterm birth <34 weeks of gestation. ROC and logistic regression analysis was performed to evaluate the importance CRL discordance in determining adverse perinatal outcome.

Results A total of 2,155 twin pregnancies [420 monochorionic (MC) and 1,735 dichorionic (DC)] were included in the study. CRL discordance had very poor prediction for fetal loss <20 (AUC of 0.61), < 24 weeks (AUC: 0.54), perinatal mortality (AUC of 0.52), BW discordance (AUC of 0.61), BW < 5th centile (AUC of 0.56), USS EFW discordance (AUC of 0.55) and preterm birth (AUC of 0.50). Overall mortality was significantly higher ($p = 0.016$) in MC (21/420) compared to DC (45/1735) twins. Logistic regression analysis demonstrated that chorionicity ($p = 0.033$ OR: 2.09, 95% C.I. from 1.06 to 4.010) independently contribute in determining mortality while CRL discordance ($p = 0.201$) did not. After adjusting for chorionicity, CRL discrepancy did not improve the detection of adverse outcome in either MC or DC twin pregnancies.