

For both groups the next category was RC6 (primiparous breech). In 2007 1/77 (1%) were RC6 and in 2012 6/86 (7%) were RC6 (p = N/S)

**Conclusions** In Tayside the main indication for CS is previous CS. Promoting vaginal birth after caesarean (VBAC) might halt the rise in CS. We have introduced an information leaflet that promotes VBAC. There are a significant number of primiparous women having CS prior to the onset of labour or following induction of labour. Effective counselling and decision making will ensure that these women are managed appropriately.

#### REFERENCE

Robson's classification of Caesarean Section.

#### PL.84 SHORT-TERM CULTURE OF HUMAN ECTO-CERVICAL EPITHELIAL CELLS FOR GENOMIC, PROTEOMIC AND FUNCTIONAL STUDIES

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**Background** Understanding cell physiology is limited by reliance on tumour-derived immortalised cell lines. Primary cell culture models may offer more relevant mechanistic insight into cell physiology but are often difficult to establish and maintain.

**Aims** We sought to develop an optimal method for the isolation and short-term culture of Human primary Ecto-Cervical Epithelial Cells (HECECs).

**Methods and Material** Fresh ecto-cervical tissues were obtained at hysterectomy and epithelia isolated and cultured (using MEM D-Valine media to prevent fibroblast proliferation) using three explants methods: i) tiny fragments of epithelium; ii) dissociated cells cultured after digestion using Collagenase IV and trypsin; and iii) digested tissue clumps. The epithelial phenotype of cultured cells was verified by double immunofluorescence sequential staining to detect cytokeratin, specific antigen for epithelial cells. The expression of oestrogen (ER $\alpha$ , ER $\beta$ ) and progesterone receptors (mPR $\alpha$ , mPR $\beta$ , PR $\gamma$  and nPRA&B) genes were investigated by RT-PCR. Flow cytometry was employed to detect TLR2 and TLR4, receptor targets for our proposed of pattern recognition in the cervix.

**Results** Cultures were successfully established using all three methods but cell growth was best from digested tissue clumps, which was employed for subsequent experiments. Primary cells were sub-cultured at least twice. Exclusion of fibroblasts from cultures was confirmed by absence of staining to CD90. We confirmed the expression of all ER and PR genes, as well as TLR2, TLR4 in HECECs.

**Conclusion** HECECs cultured from explants of digested tissue clumps, employing our protocol, yield pure epithelial cell populations, uncontaminated by stromal fibroblasts, suitable for molecular investigations.

#### PL.85 UMBILICAL VEIN INJECTION IN THE MANAGEMENT OF RETAINED PLACENTA-CLOSING THE AUDIT LOOP

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**Background** NICE intrapartum guidelines introduced in 2007 recommended use of umbilical vein Oxytocin injection for management of retained placenta and discredited the use of intravenous Oxytocin infusion (with the exception of its association with postpartum haemorrhage). A local audit in 2009 assessing practise of management of retained placenta revealed high rates of intravenous Oxytocin use and lower rates of intra-umbilical Oxytocin injection. This led to the introduction of local guidelines unified with NICE in 2012. We present the finding of re-audit to assess adherence to local guidelines in particular to the use of Oxytocin in the management of retained placenta.

**Method** The retrospective audit was carried out between 1 May 2012 and 31 August 2012 with 33 cases identified. Data was collected on patient demographics, rates of intravenous and umbilical vein Oxytocin injection use, amongst other parameters.

**Results** There was a reduction in use of intravenous Oxytocin infusion from 57% to 15% suggesting improved adherence to NICE guidance, but interestingly also showed a reduction in use of umbilical vein injection Oxytocin from 28% to 18%.

**Conclusion** This reduction in use of umbilical vein injection can be postulated to be due to the lack of robust evidence supporting this intervention. This is consistent with recent Cochrane review in 2011 that showed a non-statistically significant rate reduction of MROP with umbilical vein injection of Oxytocin. Additionally, newer WHO guidelines introduced in 2012 no longer advocate use of umbilical vein Oxytocin injection as first-line intervention for retained placenta.

#### PL.86 AUDIT OF PLACENTA ACCRETA AND ITS ANTENATAL IMAGING

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**Introduction** Maternal and fetal morbidity and mortality from placenta accreta are considerable and associated with high demands on health resources. Identifying women at risk antenatally can improve their management and reduce complications of this condition before delivery.

**Aim** To ascertain the usefulness of MRI scan in predicting the risk of placenta accreta.

**Method** An audit of maternity notes of women diagnosed with placenta praevia (PP) between Aug 09 and Aug 12. Women with PP and a previous caesarean were considered to be at greater risk of placenta accreta and were audited against the RCOG Greentop Guidelines for antenatal imaging with MRI.

**Results** Of the 72 cases identified, there were eight cases of anterior PP with a history of caesarean section. A further set of notes was of a woman with multiple caesarean sections and mainly posterior PP but the anterior edge of placenta overlying the anterior lower segment.

Of these nine 'high risk' women, 5 women had an MRI scan performed antenatally. In these cases there were 3 true negative MRI scans and 1 was a false negative, with evidence of placenta accreta at delivery. There was 1 reported false positive with no accreta at delivery.

**Discussion** The use of MRI scanning has not been used in all high risk cases. Where used, the predictive value has been 60%. Detailed analysis of features of abnormal placentation is required to improve the predictive value of MRI scans.

#### PL.87 WATER BIRTHS: A POSSIBLE RISK FACTOR FOR OBSTETRIC ANAL SPHINCTER INJURY

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**Background** Obstetric anal sphincter injury (OASI) has steadily increased worldwide in recent years. There has been controversy over water birth and the midwifery practise of "hands off" technique contributing to the increase of OASI injury. Chesterfield Hospital has a high water birth rate (12%) with a rising incidence of OASI. Hence this audit was carried out to identify the possible causes in this rise including water birth as a risk factor.

**Methods** This retrospective audit was performed over period of 13 months. The standard used was the expected incidence of OASI was 1% of all vaginal deliveries (RCOG green-top guidelines). The

aspects reviewed included mode of delivery, birth weight, parity and if episiotomy was performed.

**Results** The incidence of OASI was 4.5% of all vaginal deliveries. There were 2 missed cases of OASI. Among the OASI cases, 32% laboured in the pool as analgesia or had a water birth. 62% had a normal vaginal delivery, 14% had a water birth and 24% had an instrumental delivery. Majority had a normal fetal weight (82%). 88% has no episiotomy performed. Patients who had a water birth were more likely to sustain an OASI compared to normal vaginal delivery (5.47% water births versus 3.66% normal delivery).

**Conclusion** The increased incidence of OASI in the unit may be due to the increased detection rate by obstetricians. Water birth is a potential risk factor for OASI but this area needs further research.

**PL.88 SYNTOCINON INFUSION: A PROSPECTIVE AUDIT AT ST JOHN'S HOSPITAL (NOV 2010 – APRIL 2011)**

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**Introduction** The use of oxytocin infusion in the induction and augmentation of labour is an essential component of intra-partum care in obstetrics worldwide but can be associated with potentially serious complications. These complications include uterine hyperstimulation leading to abnormalities in the CTG, uterine rupture especially in labouring women with previous uterine scar, fluid overload and postpartum haemorrhage (prolonged usage). In the light of these potentially serious but avoidable complications, it is imperative to use it judiciously in accordance with clinical guidelines.

**The Aim** of this audit was to determine the adherence of the unit to the designated clinical guideline in the use of syntocinon infusion in labour and to ascertain and analyse the underlying reasons for the complete stoppage of infusion and the reduction in the dosage of infusions.

**Results and Discussions** Majority of patients on syntocinon infusion carried on to delivery without having syntocinon stopped (99.08%) or reduced (66.9%). A significant number though still had syntocinon reduced at least on 1 occasion (33.1%).

The commonest reason for reducing rate of infusion was hyperstimulations (42/51), followed by other reasons such as maternal distress, stopping to site epidural and "tissued venflon" representing (12/51) and prolonged and persistent decelerations.

**Conclusions** The use of syntocinon infusion to augment or induce labour at St John's Hospital conforms to the established Pan-lothian guideline.

It is acceptable practise to reduce the rate of infusion when there is uterine hyperstimulation and to stop the infusion completely in the event of prolonged bradycardia and pathological CTG (NICE guideline).

**PL.89 FUNCTIONAL EFFECTS OF OESTRADIOL ON CYTOKINE RESPONSES OF HUMAN ECTOCERVICAL EPITHELIAL CELLS TO TOLL-LIKE RECEPTOR 2 AND 4 LIGANDS**

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We have demonstrated that the pattern recognition toll-like receptors (TLR) 2&4 are upregulated during pregnancy in human cervical epithelium. We sought to determine whether oestradiol (E<sub>2</sub>) alters the immunological responses of cultured human ecto-cervical epithelial cells (HECECs) to the ligands of TLR2 (peptidoglycan, PGN) and TLR4 (lipopolysaccharides, LPS).

**Methods and Material** Fresh ectocervical tissues were collected from hysterectomy specimens, epithelia isolated and cultured after collagenase and trypsin digestion, cell purity being validated by immunofluorescence. The expression of TLRs 2&4, and E<sub>2</sub> receptor genes (ERs  $\alpha$ & $\beta$ ) were demonstrated by flow cytometry and RT-PCR respectively. HECECs were co-incubated with varying E<sub>2</sub> concentrations (0.1, 1, 10, 100 nM) and PGN (50  $\mu$ g/ml) or LPS (100 ng/ml) for 10 min, 2 hrs and 18 hrs. Cytokines were assayed in supernatant fluid by Cyto-Bead Array.

**Result** In response to PGN, HECECs co-incubated with E<sub>2</sub> released lower levels of IFN- $\gamma$ , IL-6 and IL-8, whilst after 18 hrs, RANTES expression increased to low E<sub>2</sub> but decreased to high E<sub>2</sub>. In response to LPS, HECECs co-incubated with E<sub>2</sub> demonstrated increased expression levels of IL-10, IL-12p70, RANTES and TNF $\alpha$  at 10 min and 2 hrs. IL-6 and IL-8 levels increased at 2 hrs but were suppressed or unchanged after 18 hrs. Markedly increased levels of RANTES were detected after 18 hrs, an effect obtunded by culturing HECECs in E<sub>2</sub>.

**Discussion** The complex immunomodulatory effects of E<sub>2</sub> on cultured HECECs appear to vary with bacterial ligands and duration of exposure, suggesting direct non-genomic vs. genomic mechanisms. The resulting cytokine profiles may contribute to cervical remodeling during pregnancy.

**PL.90 DOCUMENTATION AND ASSESSMENT OF CONTINUOUS INTRAPARTUM ELECTRONIC FETAL HEART MONITORING**

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**Objectives** To assess the effectiveness of an intrapartum CTG interpretation tool.

**Background** Intrapartum electronic fetal monitoring is used as a method of evaluating fetal well-being in labour. NICE guidance on the classification of intrapartum CTG's includes definitions and descriptions of individual fetal heart rate features and an overall grading system.

To improve documentation and reduce unnecessary interventions, a regional CTG evaluation tool (sticker) was introduced summarising this guidance.

**Method** Retrospective review of 101 intrapartum CTG stickers from 24 patient charts assessing standard of documentation and accuracy of CTG classification.

**Results** All 4 features were assessed and assigned an overall grading in 82/101 (81%) of cases, of which 74/82 (90%) were concordant with independent analysis of overall grading. The CTG was upgraded from normal to suspicious in 3/82 (4%) cases and downgraded from suspicious to normal in 5/82 (6%) cases.

Original FHR documentation was incomplete in 19/101 (19%) cases of which 8/19 (42%) were independently graded as suspicious.

**Conclusions** There was suboptimal completion of CTG stickers as only 81% (82/101) had all 4 features assessed and were assigned an overall grading.

In cases where the CTG stickers were fully completed, 91% (75/82) were independently graded as normal. Whereas, when the features were incomplete, 42% (8/19) were graded as suspicious following independent analysis which seemed to indicate a difficulty with interpretation and categorisation of decelerations and a reluctance of staff to commit to an overall grading if the CTG was not normal.

**PL.91 THE ETHICS DECISION CONCERNING PREMATURE NEWBORN: REFLECTIONS OF DOCTORS AND NURSES**

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