PL.41 SPECIFIC MICRORNAS ARE DIFFERENTIALLY EXPRESSED IN LABOURING AND NON-LABOURING HUMAN MYOMETRIUM AT TERM

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JR Cook, DA MacIntyre, P Bennett, V Terzidou. *Parturition Research Group, Imperial College, London, UK*

Introduction MicroRNAs (miRNAs) are small non-coding single-stranded RNA molecules which down-regulate gene expression at the post-transcriptional level. Their influence is thought to be vast and it is estimated that approximately 30% of the human genome may be regulated by miRNAs. Recent studies in fetal membranes suggest differential expression of miRNAs with advancing gestation or histological evidence of chorioamnionitis (1), which is one of the primary causes of preterm labour. Further, cyclo-oxygenase (COX-2), which synthesises prostaglandin which in turn modulates uterine contractions has been shown to be regulated at the post-transcriptional level through changes in specific microRNAs (2)
Methods and Results Myometrial biopsies were collected from women undergoing caesarean section before and after the clinical onset of labour (n = 9, each group). Total RNA was extracted using RNA-STAT 60. Samples were further characterised by assessing COX-2 expression using qRT-PCR with GAPDH as an endogenous control; a 'non-labouring' sample with high COX-2 expression was excluded. RNA samples were labelled using the miRCURY™ Hy3/Hy5 power labelling kit and hybridised on the miRCURY™ LNA array. The results of the array were validated with qRT PCR. Principle component analysis of co-variance between samples demonstrated variance contributing to phenotype at the third component level. Orthagonal partial least squares discriminatory analysis identified eight microRNAs whose variance is related to the onset of labour. Six had reduced expression with labour and two were increased.
Conclusion MiRNAs may have a potential role regulating gene expression at the onset of labour.

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PL.42 IN UTERO TRANSFER: 'IT'S SOMETHING YOU HAVE TO PUT UP WITH': A QUALITATIVE EXPLORATION OF ITS IMPACT ON FAMILIES

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[1]L Porcellato, [2]G Masson, [2]F O'Mahony, [2]E Perkins, [3]S Jenkinson, [3]T Vanner, [3]K Cheshire. *[1]Liverpool John Moores University, Liverpool, UK; [2]University Hospital of North Staffordshire NHS Trust, Newcastle Under Lyme, UK; [3]The Royal Wolverhamtpon Hospitals NHS Trust, Wolverhampton, UK*

In utero transfer (IUT) is a necessary facet of contemporary obstetrics, enabling the appropriate level of care for neonates (BAPM 2001). However, quantitative research has demonstrated that IUT can cause stress and anxiety and potentially impedes future pregnancies (Walker 2000). Although the impact of IUT on the families of expectant mothers has been assessed by Jackson *et al,* (2010) in a Scottish-wide audit, the issue has been largely ignored in England. It is important to examine IUTs from the service users' perspective, to ensure services are responsive to need and engender a positive birth experience.

A small scale qualitative study was undertaken, to gain insight into the IUT process as experienced by women and their families, with a view to informing maternal care policy and practise. Semi structured interviews were carried out with 8 family members and 15 women who had been transferred into 2 tertiary obstetric centres in England between Aug 2010 and Dec 2011. Hour long digitally recorded interviews were conducted and thematically analysed using Nvivo 9. Results highlighted that the impact of IUT on families was primarily psychological, physical, social and financial; fathers were perceived to be the most affected by the process. There was resigned acceptance of the need for IUT but issues around lack of information about the transfer hospital, inflexible visiting hours and the inconvenience to visitors had a negative impact on families and need to be addressed, to improve the IUT experience for future service users.

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PL.43 CERVICAL COMPLIANCE AND SMOOTH MUSCLE

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C Mowbray, SC Robson, JN Bulmer, MC Smith. *Institute of Cellular Medicine, Newcastle University, Newcastle Upon Tyne, UK*

Background Cervical weakness is associated with late miscarriage and extreme preterm birth. Early studies reported higher cervical smooth muscle content in women who experienced second trimester loss. Contemporary studies have suggested structural composition is not related to pre-labour cervical remodelling. The aim of the present study was to explore the relationship between human cervical structure and biomechanical characteristics.
Methods Cervical biopsies were taken from 17 non-pregnant women at the time of hysterectomy. Samples were bisected longitudinally and one portion mounted on a myograph (Danish Systems). The stretch-strain characteristics were recorded using Windaq software. The non-stretched portion was fixed and immunohistologically stained with orcein (elastin) and immunostained for smooth muscle actin [SMA]. Smooth muscle and elastin content were then assessed using Photoshop image analysis. 3 biopsies were taken from each of 4 hysterectomy specimens to assess intra-subject variability.
Results The proportion of both smooth muscle and elastin content of cervical biopsies showed a wide variation (5–47% and 9–47%, SMA and elastin, respectively). Furthermore, there was considerable intra-subject variability with as much as a 2.4 fold difference in SMA content. Both SMA and elastin content correlated with biopsy compliance ($R = 0.3$, $p < 0.01$, and $R = 0.4$, $p < 0.01$ respectively).
Conclusion The biomechanical properties of human cervical biopsies are influenced by the smooth muscle and elastin content of the specimen. Histological and biomechanical characteristics of human cervical biopsies cannot be assumed to be reliably representative of the whole specimen. These findings may explain why previous studies have failed to find a relationship between biopsy characteristics and clinical history.

PL.44 REPEAT USE OF DINOPROSTONE PESSARY AFTER FAILED INDUCTION OF LABOUR

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[1]M Umoren, [2]S Relph, [2]A Fakokunde. *[1]St George's Medical School, Grenada, Grenada; [2]North Middlesex University Hospital, London, UK*

Introduction There is no guideline advising on the management of women in whom induction of labour with first dinoprostone pessary has failed. Repeat cervical ripening with a second pessary is a commonly used management option.

Aim To assess the safety and efficacy of a second 10 mg dinoprostone (Prostaglandin E2) pessary inserted 24 hours after initial failure of cervical ripening.
Methods A pilot retrospective study of women at a North London teaching hospital, over a 7 month period. Women who failed initial induction were managed using a repeat pessary of prostaglandin E2. Primary outcomes of interest included establishment of active labour, mode of delivery, Bishop score and any adverse events.
Results 34 women having induction of labour were given a second pessary following failed initial induction. Medical records were available for 19 of these. 12 women (63%) achieved active labour following insertion of the 2nd dinoprostone pessary, and 10 of these (83%) delivered vaginally. Two cases of uterine hyperstimulation resolved on removal of the pessary. There was a significant difference in Bishop score pre-pessary insertion between the women who achieved active labour (83.3% had score ≥3) compared to those who failed to labour (0% had score ≥3), ($p < 0.05$).
Conclusion Successful induction of labour can be achieved safely with second dinoprostone pessary following failed initial induction of labour if the Bishop score prior to insertion is ≥3. A larger study will follow, in order to add power to this data.

PL.45 HIGH-SENSITIVITY C-REACTIVE PROTEIN (HS-CRP) IN AMNIOTIC FLUID OBTAINED AT CAESAREAN SECTION: A FEASIBILITY STUDY

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[1]Z Marchocki, [2]K Collins, [2]P O'Reilly, [1]K O'Donoghue. *[1]Department of Obstetrics and Gynaecology, Cork University Maternity Hospital, University College Cork, Cork, Ireland; [2]Department of Microbiology, University College Cork, Cork, Ireland*

Introduction The most important risk factor for post-partum maternal infection is caesarean section (CS). High-sensitivity C-reactive protein (HS-CRP) accurately detects low concentrations of CRP as a predictor of inflammation in blood. This study evaluated the feasibility of measuring HS-CRP in amniotic fluid (AF) and maternal serum at CS.
Methods This was a prospective observational study of women undergoing elective and emergency CS. AF was obtained at CS by direct needle aspiration from intact amnion. Samples were processed for HS-CRP, bacterial count and culture. Maternal serum CRP was measured before and 3 days after CS.
Results Seventy-nine women undergoing CS participated. In 5 (6%), AF could not be analysed; it was either not obtained or could not be processed due to thick meconium. Of the remainder, 47% (35/74) women underwent elective and 53% (39/74) emergency CS. There was a significant difference in AF HS-CRP levels from elective versus emergency CS (median 68.6 ng.ml *vs* 192.3 ng.ml; $p = 0.009$). There was no difference in serum HS-CRP levels between elective and emergency CS. Almost 60% (44/74) of AF samples showed bacterial colonisation. There was no difference in AF or serum HS-CRP levels between patients with sterile amniotic fluid compared to those with bacterial colonisation. However serum HS-CRP levels were higher where AF samples at emergency CS showed bacterial growth ($p = 0.03$).
Conclusion This study proves the feasibility of measuring HS-CRP in <1 ml amniotic fluid in both elective and emergency settings. AF HS-CRP levels were significantly higher in emergency compared to elective CS. However, analysis of HS-CRP was limited by AF consistency.

PL.46 A RETROSPECTIVE REVIEW COMPARING THE EFFICIENCY AND OUTCOMES OF PROPESS AND PROSTIN GEL AS A METHOD OF INDUCING LABOUR

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SRM Murray, KCD Dundas, JBL Byrne-Leitch, WYP Poon, AD Dick. *Simpson Centre for reproductive Health, Edinburgh, UK*

Introduction Induction of labour is a common procedure affecting 1 in 5 pregnancies in the UK. The induction of labour process in Lothian was changed in August 2010 from prostin gel to propess pessary. This study aims to compare the efficiency and outcomes of propess and prostin for induction of labour.
Method A retrospective case note review was carried out with 278 randomly selected patients who received induction of labour with propess since August 2010 compared with 278 randomly selected patients from the same timeframe the year previously who received induction of labour with prostin. The groups were split into prim and parous and the outcomes were statistically compared between the groups using mann-whitney and t-tests.
Results Both propess and prostin had a similar failed induction rate. Propess had a significantly longer average length of stay in hospital, a higher chance of requiring second round prostin and a significantly longer time from induction to delivery compared with the prostin group. However the number of patients requiring oxytocin in labour was significantly less in the propess group. There was no difference in the mode of delivery between groups.
Conclusion Further research is needed to determine where the time delay is in the length of stay in hospital and the study needs to be re-audited once the 24 hour rest period is re-introduced in the propess group. Should we go back to prostin?

PL.47 WITHDRAWN BY AUTHOR

PL.48 DO WE PERFORM MEDIOLATERAL EPISIOTOMY AT THE OPTIMUM ANGLE?

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W Maina, J Tinsey, C Jones, J Mansfield, M Cameron. *Norfolk and Norwich University Hospital, Norwich, UK*

Introduction Dr Foster reported obstetric anal sphincter injuries (OASIS) incidence in Norwich as 3.72% for spontaneous vaginal deliveries and 10.76% for instrumental deliveries against expected incidence of 3.6% and 7.6% respectively. The Norfolk and Norwich Improving Patient Safety (NNIPS) programme supported an OASIS reduction project. One factor thought important in OASIS is the angle of mediolateral episiotomy; larger angles are associated with a lower incidence (Eogan *et al,* 2005).
Study Aim To measure episiotomy angles to confirm optimal episiotomy angle of > 45° from midline.
Setting A large UK university teaching hospital delivering 6000 babies annually.
Cohort Women with episiotomy delivered in June to July 2011.
Methods Two independent measurements were taken before discharge from the postnatal ward using acetate paper placed over the perineum and the angle traced on the paper measured from anus (6 O'clock) to the episiotomy – mean angle was calculated for each patient.
Results Twenty nine women agreed to measurement - 14 were delivered by forceps, 4 by ventouse and 11 had spontaneous vaginal deliveries. 21/29 (72%) had episiotomy angles < 45° compared with 8/21 (28%) who had angles > 45°. We found no OASIS in this cohort.
Conclusion We were not performing episiotomies at the optimum angle. We implemented:

An education campaign for maternity health professionals, using the slogan "Straight at 8" meaning cut towards 8 O'clock.

Sharpening of episiotomy scissors as bluntness was identified by staff as an important issue.