Results 105 positive blood cultures were returned for the time period. 6 did not have an FBC result performed close to the time of culture (N=99). These were compared to a control group of 269 negative blood cultures. Infants were matched for year of birth, birth weight and gestation.

The mean WCC in the culture-positive group was 14.2 (CI 5.76 – 18.45), and 18.63 in the negative group (CI 17.7 – 19.56).

ROC analysis revealed an Area Under Curve of 0.802 ($p < 0.0001$). A WCC cut-off value of 9 had a PPV of 0.8 (CI 0.5–1.3) and Specificity of 93.02% (CI 88.8–96.0) in predicting culture-positive EOS, a NPV of 100% (CI 99.9–100) and Sensitivity of 54.55% (CI 44.2–64.6).

Analysis of the mortality rate amongst positive cultures revealed that a WCC value of less than 4 gave an Odds Ratio (OR) for death of 3.66 (CI 1.14–11.8; $p < 0.03$) and relative risk for death of 2.92 (CI 1.17–7.5; $p < 0.03$) amongst infants with positive cultures.

Conclusions Our research has demonstrated a subgroup of WCC and neutrophil values which can help to identify infants who are likely to have EOS. This may aid neonatal staff in cohorting infants for admission and observation, or for earlier LP and high dose antibiotics.

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GP250 NEONATAL JAUNDICE SURVEILLANCE- ARE WE WINNING?

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Objectives To determine the incidence of babies presenting with Serum bilirubin (SBR) >400 micromol/litre in last five years (2013–2017)

To review the factors leading to admission of neonates with SBR >400 micromol/litre in last 2 years (2016–2017)

Method A multicentre retrospective review of the yearly data of neonates <28 days treated for very high SBR >400 micromol/litre across GGC between years 2013–2017 was collected from the Laboratory database. Detailed retrospective review of all the neonates treated for SBR >400 micromol/litre in three NNU in 2016 & 2017 was done by case notes, midwifery record notes and online patient database

Variables including gestational age, age at presentation, gender, family history, type of feeding, serial bilirubin levels (transcutaneous bilirubinometer (TcB), blood) before and at the time of start of treatment were reviewed to determine the causes of presentation with high bilirubin levels in spite of having a Jaundice surveillance system in place.

Results The number of babies needing treatment due to high SBR (>400 micromol/l) has significantly declined from year 2013 to 2017 across GGC (p value=0.002).

Total 18 patients with SBR >400 micromol/l were admitted in 2016 (n=10) and 2017 (n=8). Majority of the babies were male (n=10, 55%), commonest gestational age group was between 37–40 w (n=14, 78%), presenting between 5–10d of life (n=13, 72%) and referred by the community midwives (n=17, 94%). TcB was most commonly used to assess SBR before referral to hospital (n= 11, 61%), majority of the babies received treatment for the first time (n=16, 89%) and most of the babies were breast fed (n=8, 44%). Predisposing factors for jaundice included breast feeding (n=10), cephalhematoma/bruising (n=3), Hereditary Spherocytosis (n=1) and G6PD deficiency (n=1). Other factors included lack of close monitoring for jaundice in community (n=8), discrepancy of correlation between TcB and SBR values (n=6), inappropriate plotting on bilirubin charts (n=2).

Conclusion Incidence of babies presenting with SBR >400 micromol/l has significantly reduced in last five years. This could be secondary to introduction of TcB in community and improvement in jaundice surveillance system. However there is still margin for improvement as new cases are still presenting either due to inappropriate monitoring in community or discrepancy in co-relation of levels between TcB and SBR.

GP251 IS HEART RATE VARIABILITY (HRV) A PREDICTOR OF INTRAVENTRICULAR HAEMORRHAGE (IVH) IN PRETERM INFANTS?

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Introduction Intraventricular haemorrhage (IVH) occurs in up to 15–20% of babies born before 32 weeks, and up to 30% in babies less than 28 weeks gestation.

Injury can cause detrimental short and long-term health outcomes.

Heart rate variability (HRV) is a measure of autonomic function controlled by cardiorespiratory reflexes.

Depressions and decelerations in HRV are sometimes witnessed clinically with acute central nervous system injury, such as haemorrhage.

Aim This study aims to describe HRV as a prognostic tool in diagnosing IVH.

Method This project analysed ECG data from 28 preterm infants (<32 weeks gestation) who have been enrolled in a prospective randomised trial of umbilical cord management in CUMH.

The HRV was computed from the ECG. This was achieved by

1. Extracting a 15 minute epoch of ECG free from major artefacts from the long-duration recordings. Two time points were chosen, 6 and 12 hours.
2. Identifying the ECG R-peaks by visual inspection using HRV Analysis (a UCC software package designed specifically for this task)
3. Extracting quantitative HRV features from the R–R interval.

The 7 HRV features were defined in 1996 by the Task Force of the European Society of Cardiology and the North American

Society of Pacing and Electrophysiology, adapted for preterm infants. These features were mean NN (ms), SDNN (ms), mean VLF (ms²), mean LF (ms²), mean HF (ms²), LF/HF ratio and TINN (ms).

These HRV features were then individually tested for group differences among the outcome groups using the appropriate Mann-Whitney U test.

Results Nine of the twenty-eight babies developed IVH.

4 infants had Grade 1 and 5 infants had Grade 2 IVH.

None of the infants had a severe IVH (grade 3/4).

Overall there was no difference in all features between the two individual time points for the group overall.

There were no statistically significant differences in the features between infants with and without low grades of IVH.

Conclusions We found no association between HRV characteristics at 6 and 12 hours of age and low grades of IVH in preterm infants less than 32 weeks. Future work is needed to explore the relationship between HRV and severe IVH (grade 3/4).

GP252

THE EFFECT OF MUSIC THERAPY ON THE ELECTROENCEPHALOGRAM (EEG) AND HEART RATE VARIABILITY (HRV) OF PREMATURE INFANTS DURING ROUTINE PAINFUL PROCEDURES

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Background Music therapy may be beneficial for relieving pain associated with Neonatal Intensive Care Unit procedures. The aim of this study was to assess the effect of music on the EEG and HRV of premature infants during painful procedures.

Methods This was a randomised crossover study in newborns delivered before 32weeks gestational age (GA). Infants were randomised to receive initially either sucrose or sucrose and music therapy (Brahms' lullaby) during routine venepuncture. Infants had multichannel EEG recorded during the procedure, with ECG part of the EEG montage. Three 2-minute artefact free EEG and ECG epochs (before venepuncture, 4 minutes and 18 minutes after venepuncture) were selected for analysis. Matlab was used to perform quantitative EEG and HRV analysis.

Results

Twenty-one preterm infants were recruited 8 males (38%) and 13 females (62%), mean birth weight 932 g. The EEG analysis showed no clinically significant difference between the two groups. The HRV analysis showed an increase of the mean NN interval and LF-HF ratio at 18 minutes post-procedure in intervention arm.

Conclusion EEG features were not significantly altered by painful procedures in our study, and music therapy did not change this response. The changes in HRV indicate improved autonomic stability and a decrease stress during painful procedures with music therapy.

GP253

MATERNAL AWARENESS, ACCEPTABILITY AND WILLINGNESS TOWARDS RESPIRATORY SYNCYTIAL VIRUS (RSV) VACCINATION DURING PREGNANCY

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Background RSV is the leading cause of viral lower respiratory tract infections and hospital admissions among infants. There were over 3,100 cases of RSV reported in Ireland in winter 2017/2018 and globally, RSV is responsible for over 1.4 million admissions and 27,000 deaths in Infants under 6 months annually. A vaccine against RSV has been identified as a priority by the World Health Organisation (WHO) and several candidate vaccines against RSV are currently in clinical development.

Aims To evaluate maternal knowledge of RSV infection and to assess likely acceptance if an approved licenced vaccine for use in pregnancy is made available in Ireland.

Methods Pregnant women were surveyed prospectively during normal and high-risk antenatal clinic visits. Information leaflet was provided, consent for the survey obtained and ethical approval was granted by the UL Hospitals Group research ethics committee. Study design proposed 900 pregnant women for consecutive enrolment.

Results The response from the initial part of the survey was analysed. Mean age of women surveyed was 32 years (range 17–42 years) while gestation ranged from 11 to 40 weeks of gestation (mean 29 weeks). 57% of women were in their first pregnancy, 20% in their second and the remaining 23% in their third or subsequent pregnancies.

71% of women had never heard of RSV, 19% had some knowledge of it, 10% had knowledge of its significance in infancy and interestingly no respondents among the initial cohort analysed had experience of it in their own child. 57% of women responded that if an antenatal vaccine against RSV was available, they would accept it and 37% of respondents were unsure.

35% of women felt that recommended vaccines would protect their infant from illness, 21% were confident in recommended vaccines, and a further 29% believed that vaccines would both protect their infant from illness and felt confident in the potential recommended vaccine. A combined positive response was noted from 85% of pregnant women.

54% indicated consulting their GP best influencing their decision making, 23% preferred midwife, 14% opted for discussion with obstetrician, 4% information leaflets, 3% depended on a relative and 1% online resources.

Conclusion Over half of women indicated that they would accept a vaccine to protect their infants against with high rates of vaccine confidence. Women's preferences for advice regarding vaccination during pregnancy should be considered when planning such programmes given the strong desire for information seeking from primary care setting.