P451 IMMUNE FUNCTION IN HEALTHY MALE AND FEMALE TERM INFANTS

¹Matthew McGovern*, ²Rebecca Finnegan, ¹Kai Loh, ^{1,2,3,4}Eleanor Molloy. ¹Trinity College, Dublin, Ireland; ²Coombe Women and Infant's Hospital, Dublin, Ireland; ³Tallaght Hospital, Dublin, Ireland; ⁴Our Lady's Children's Hospital, Dublin, Ireland

10.1136/archdischild-2019-epa.787

Aims Male neonates appear to be more susceptible to infection than females. The immunological reasons for this are poorly understood. Our aim was to compare the immune response of healthy term male and female neonates using flow cytometry and cytokine analysis.

Methodology Whole blood was collected with routine phlebotomy in healthy, term infants on the postnatal ward within 48 hours of delivery. Samples were processed for flow cytometry and cytokine analysis. Whole blood was treated with endotoxin (LPS; 10 ng/mL) for 1 hour at 37°C before subsequent analysis. Granulocytes and monocytes were identified by flow cytometry based on light scattering properties and cell surface markers. Multiplex ELISA was undertaken using a multisport 96-well plate customised for the experiment.

Results In total 26 neonates were analysed (13 of each sex) with 20 having flow cytometry analysis and 6 undergoing ELISA. Female monocytes had higher CD11B expression than males following endotoxin stimulation. GM-CSF, IL-10, IL-1RA and IL-8 increased significantly following endotoxin stimulation in females but not males ($p < 0.05$)

Conclusion Male and female neonates mount different immune responses following septic challenge. Results suggest that females mount a more robust immune response and may be better able to modulate the immune response resulting from infectious stimuli.

P452 AUDIT OF MN-CMS NEONATE OVERVIEW CLINICAL VIEW DATA AT DAY 2 NEWBORN CHECK

Angela Verrelli*, Deirdre Sweetman. National Maternity Hospital, Dublin, Ireland

10.1136/archdischild-2019-epa.788

Introduction Maternal and Newborn Clinical Management System (MN-CMS) is a new electronic medical record (EMR) that is used nationally in several maternity hospitals in Ireland. It was introduced to develop a paperless working environment and to facilitate access to patient information on a central system. In this audit, we aimed to evaluate the completeness of information entered in infants' EMR at birth and to assess which parameters are most frequently missing when the day 2 newborn check is performed. The aim was to identify which maternal and neonatal parameters are lacking and to increase awareness of this missing data.

Method For this audit, 100 infants' EMR were evaluated (50 public, 50 private patients) at two different time points to investigate if there was any difference in the recording rate from the Clinician View- Neonate Overview. Parameters included labour and birth information of the infants. All the data was analysed together and compared between the public and private patients.

Results

Abstract P452 Table 1

Categories (Neonatal Overview)	August – October results	November – January results
Date of birth	100	100
Time of birth	99	100
Apgars (1 and 5 minute)	91	98
Gender	99	100
Maternal pathway to delivery	89	83
Delivery category	87	83
Delivery type and birth	82	79
Maternal anaesthetic	33	42
Maternal rupture of membranes	50	52
EGA at birth	100	100
Birthweight	99	99
Neonatal multiple gestation	90	98
Cord bloods and results	29	40
Amniotic fluid color	73	67
Maternal age	100	100
Gravidity and Parity	100	100
Blood group	98	100
Serology	84	82
Fetal and Maternal risk factors	82	78
Feeding type	52	47

Discussion Results showed that though similar parameters were lacking in both groups, there was an improvement in recording noted in the second group (Date of Birth, Time of birth, Apgars, Gender, Estimated Gestational Age, Birthweight, Neonatal multiple gestation, Maternal age, Gravidity and Parity and Blood group). However, there are some areas that still require improvement and clarification as to when recording is needed or not. A follow-up audit is recommended to confirm that data recording training modules have been implemented and are successful.

P453 NEONATAL STREPTOCOCCAL B INFECTIONS

¹Chiraz Regaieg*, ¹Manel Charfi, ²Nour Houda Ben Ayed, ¹Amel Ben Hmed, ¹Ridha Regaieg, ¹Nedia Hmida, ²Adnen Hamammi, ¹Afef Ben Thabet, ¹Abdellatif Gargouri. ¹Department of neonatology, Hedi Chaker Hospital, Sfax, Tunisia; ²Microbiology laboratory, Habib-Bourguiba hospital, Sfax, Tunisia

10.1136/archdischild-2019-epa.789

Introduction Despite recommendations for universal screening and intrapartum antibiotic prophylaxis strategies for pregnant women, group B Streptococcus (GBS) remains a major cause of neonatal disease. The aim of our study was to determine the incidence, risk factors and outcome of maternal-fetal infection (MFI) due to GBS.

Methods A retrospective study of all cases of neonatal streptococcal B infections arising within 72 hours of birth between January 2012 and December 2017 in our department.

Results Eighty-eight cases were identified which represents 9.6% of total hospitalizations during the study period. The sex ratio was 1.4. Fifty four percent (n=48) of cases were associated to bacteraemia and only 2 cases of meningitis were noted. Infectious risk factors were acute fetal hypoxia (42%), peripartum maternal fever (35.2%) and membrane rupture more than 12 hours before delivery (26.1%). Sixteen percent of all newborns were premature and 19.3% had a low birth weight. 64.8% were symptomatic at birth. The main clinical signs were respiratory distress (82.5%), neurologic distress (17.5%) and fever (12.3%).

Assisted ventilation was required in 11 patients, 5 of whom died. Predictive factors for bad prognosis were prematurity (2case), severe hypoxemia (2case), nosocomial infections (1case).

Conclusions We noted a decrease in the mortality rate, due to advances in the neonatal care. However, neonatal streptococcal B infections still remain a significant problem of public health requiring additional preventive and therapeutic management based on systematic screening and antibiotic prophylaxis.

P454

SUCCESSFUL EXTUBATION IN VERY LOW BIRTH WEIGHT INFANTS IN A TERTIARY NEONATAL INTENSIVE CARE UNIT

¹A Jenkinson*, ¹D Sweetman, ^{1,2}LK McCarthy. ¹Department of Neonatology, The National Maternity Hospital, Dublin, Ireland; ²School of Medicine and Medical Science, University College Dublin, Dublin, Ireland

10.1136/archdischild-2019-epa.790

Introduction Prompt extubation of mechanically ventilated very low birth weight infants (VLBW) in the NICU, when clinically ready is in infants' best interest. It can be difficult to predict which infants will extubate successfully. No one bedside test or clinical sign has proven useful as a predictive tool. Reported rates of extubation failure in preterm infants are as high as 50%. At our level 3 NICU the decision to extubate an infant is at the discretion of the clinical team; there are no set extubation criteria. We aimed to determine the rate of successful extubation at our hospital; and to describe any clinical markers associated with extubation success or failure.

Methods This retrospective review was carried out at the National Maternity Hospital, between January 1st and December 31st 2017. VLBW infants with a birth weight (BW) ≤1500 g, that were mechanically ventilated and had a planned extubation attempt during their admission were included. For each individual we included data from the first extubation attempt only.

Results Of the 146 infants ≤1500 g admitted to the NICU, 56 (38%) were intubated and 48(33%) had a planned extubation attempt. The mean (SD) gestational (GA) of the 48 included infants was 28(2) weeks, BW 1097(261)g. Extubation was successful in 82% of infants and was associated with higher GA and BW, and shorter duration of ventilation. At re-intubation, 80% of infants had an additional co-morbidity.

Abstract P454 Table 1

Characteristics	Successful N = 40	Unsuccessful N = 8	P Value
GA, wks ^a	28 (2)	25 (1)	<0.001
BW, g ^a	1123 (241)	807 (204)	0.002
Inborn ^b	36 (90)	6 (75)	0.258
Male ^b	16 (40)	5 (62)	0.272
Delayed cord clamping ≥30 seconds ^b	31 (81)*	4 (57)*	0.172
SVD	16 (40)	6 (75)	0.077
Duration of mechanical ventilation, hours ^c	42 (19–147)	132 (70–169)	0.026
Surfactant (ETT) ^b	38 (95)	8 (100)	0.990
Caffeine	40 (100)	8 (100)	
Postnatal steroids ^b	16 (40)	6 (75)	0.077
FiO ₂ pre-extubation ^a	0.23 (0.03)	0.27 (0.06)	0.069

^aMean (SD), ^bN (%), ^cMedian (IQR); *Missing data

Conclusion The rate of extubation success at our NICU is higher than previously reported. There are multiple potential reasons for this including tertiary antenatal care, few outborn infants, completed courses of ANS, postnatal steroid use; or a conservative approach to extubation. A higher GA and BW, and shorter duration of mechanical ventilation were associated with extubation success.

P455

A RETROSPECTIVE AUDIT LOOKING AT HAEMATOLOGICAL ABNORMALITIES IN CHILDREN BORN WITH DOWN SYNDROME IN A TERTIARY MATERNITY HOSPITAL

Sarah Kyne*, Anna Curley. Neonatal Department, National Maternity Hospital, Holles Street, Dublin, Ireland

10.1136/archdischild-2019-epa.791

Background Haematological abnormalities are common in children with Down Syndrome (T21). In the neonatal period, babies can present with polycythemia, neutrophilia and thrombocytopenia. There is also a 150-fold increased risk of myeloid-leukaemia of Down Syndrome usually presenting before five years¹. This is seen by a transient abnormal myelopoiesis (TAM), unique to T21, and associated with the haematopoietic transcription factor gene GATA1¹. There are increased blast cells (>10%) however, silent presentations do still occur with infants developing ML-DS with <10% blast cells on film¹.

Aim In this audit, we aimed to examine the haematological abnormalities of babies with T21 born in our centre. Our guidelines state that all children with a suspected diagnosis of T21 should have a full blood count (FBC) carried out in the first few days of life. If there are abnormalities, a blood film is carried out as routine and patients with significant abnormalities are discussed directly with a haematology consultant for further management.

Methods A retrospective lab audit in a tertiary maternity hospital of all 42 babies diagnosed with T21 over a two-year