finding. Positive findings included microcolon, volvulus, Hirschsprungs and obstruction. The majority of infants were discharged with no complications.

Discussion Bilious vomiting is synonymous with intestinal obstruction and should be considered this until proven otherwise. Management is time critical given the potential consequences of a volvulus and the ischaemic threat to the bowel with the window of opportunity being approximately six hours (3) A national guideline is now warranted.

P476 SIRENOMELIA (MERMAID SYNDROME) – A RARE CONGENITAL DISORDER

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Background Sirenomelia or mermaid syndrome is an extremely rare congenital disorder involving the lower spine and lower limbs. Although usually fatal in the newborn period, survival in a handful of cases beyond infancy have been reported. We would like to present a new born with sirenomelia and multiple anomalies brought in to our hospital soon after birth.

Case report A 40 year old Romanian lady G 17, P 16, Ab 0, known diabetic poorly controlled on insulin, delivered at 38 weeks gestation in an ambulance en route to the hospital. On arrival, she was taken directly to the labor ward with ongoing resuscitation efforts with bag and mask and CPR carried out by the paramedics. The baby was noted to be cyanosed and in respiratory distress. Severe congenital abnormalities were obvious and included flattened dysmorphic features, low set malformed ears, upward slanting palpebral fissures, flattened nose, receding chin, short neck, small thoracic cage, ambiguous genitalia, absent anal opening and fused lower limbs. The feet however, were separate.

The mother was originally booked in a tertiary referral center where she had undergone antenatal scanning and was counselled on the poor prognosis due to multiple abnormalities detected including but not limited to anhydramnios (that could result in pulmonary hypoplasia), absent left kidney, right cystic dysplastic kidney and cardiac malformation. When the mother was brought in by ambulance into our hospital, we were not aware of the management plan. The baby was therefore intubated and started on positive pressure ventilation as per the protocol. Shortly after, we realized futility after resuscitation became obvious. We received more information regarding the poor prognosis and consequently, extubated the baby at 18 minutes of life and handed over the baby to the mother for comfort care.

Genetic blood tests for microarray and karyotyping were carried out and revealed female karyotype with normal microarray. Her skeletal survey was requested which showed caudal regression and absence of vertebrae after S1, malformed pelvis and soft tissue fusion of both lower limbs, however feet were separated.

Conclusion Sirenomelia is an extremely rare and usually fatal congenital malformation. Maternal diabetes, smoking and heavy metal exposure have been implicated as possible etiologies. Therefore, in our opinion poor glycemic control prior to conception and during gestation (especially during the first trimester) could have contributed to this condition.

P477 TWO CASES OF LATE ONSET GBS INFECTION DESPITE POST NATAL BENZYL PENICILLIN ADMINISTRATION

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Aim *Streptococcus agalactiae* (Group B streptococcus, GBS) is the leading cause of invasive infection among neonates and young infants in the developed world. The prevention of late onset GBS disease (LOD) remains elusive. We present two cases of LOD, one near fatal with significant morbidity, despite early treatment with benzylpenicillin in each case.

Method Following confirmation of GBS LOD, the medical record for each infant was reviewed at University Hospital Galway. Relevant clinical and laboratory information was recorded.

Results Case 1, following an intrapartum high vaginal swab positive for GBS with a clinical suspicion for chorioamnionitis at time of delivery, an otherwise well infant (born at 28+6 weeks) was treated empirically with a 5 day course of IV benzylpenicillin and gentamicin despite sterile blood cultures. The infant's neonatal intensive care unit (NICU) course was uneventful until day of life (DOL) 25 when following a clinical deterioration necessitating a sepsis evaluation, the infant's blood culture isolated GBS, the infant made a full recovery. Case 2, a singleton female infant (born at 31+6 weeks) was treated empirically with a 48 hour course of IV benzylpenicillin and gentamicin owing to an intra-uterine death of unknown cause at 18 weeks during a triplet pregnancy. There were no positive swabs/clinical suspicion for intra-partum infection with neonatal sterile blood cultures following delivery. Standard NICU care was carried out until DOL 9 when the infant developed overwhelming sepsis with GBS positive blood cultures and was transferred to a tertiary NICU centre for further care. The infant survived with significant morbidities. In both of our cases, multi-locus sequence typing and serotyping allowed accurate identification of isolates. Our chosen cases demonstrate the continued prevalence of GBS and the recognised limitations of prophylactic antibiotic use with both of the infants developing GBS infection between days 7–89 of life despite initial antibiotic administration.

Conclusion Antenatal risk-based guidelines and antibiotic prophylaxis are effective in ameliorating early onset GBS infection but are *inadequate* for combating LOD. Admittedly, the pathogenesis of LOD remains elusive and the route of acquisition is still unclear, possibly vertically from mother or horizontally from environmental sources. Our cases support each of these theories. Postnatal antibiotic therapy does not *protect against* LOD highlighting the potential role for vaccination in LOD prevention.

P478 RARE CASE OF SEVERE THROMBOCYTOPENIA AT BIRTH ASSOCIATED WITH RHESUS DISEASE OF THE NEWBORN

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Aims Rhesus isoimmunization (RI) is becoming relatively uncommon with the introduction of Rho (D) immune globulin

(anti-D). The need for exchange transfusion for treatment of babies with a severe disease has also been reduced by early recognition and treatment with phototherapy and intravenous immunoglobulin (IVIG). We present a case of a newborn infant with RI complicated by unexpected severe thrombocytopenia.

Methods

Case A male infant was born at 37 weeks gestation following an uncomplicated pregnancy. Previous children required treatment only with phototherapy for RI. The mother had normal platelets throughout the pregnancy. She was induced at this gestation for RI as per local guidelines. There were no antenatal concerns of active haemolysis despite modestly raised antibody levels. The infant did not require resuscitation but was electively admitted to the neonatal unit for monitoring and prophylactic treatment with phototherapy.

Results The baby was commenced on phototherapy and received IVIG shortly after birth. At one hour of life, the initial investigations were received showing Haemoglobin 12.5 g/dL, WBC 13.6, Platelets 15, Neutrophils 7.3, Lymphocytes 4.9, Reticulocyte count 314 and total bilirubin 85 with direct bilirubin 11. The haemoglobin and bilirubin levels remained stable over the next 48 hours. Emergency platelet transfusion was given but this failed to normalize platelet counts. Further IVIG transfusions were required over the next few days. As platelets counts failed to rise above 50 over the next week, neutrophil count, reticulocyte count, and haemoglobin level also started to steadily drop. Extensive investigations including neonatal alloimmune thrombocytopenia screen, genotyping for bone marrow failure disorders, blood film, parvovirus serology, Fanconi anaemia screen, TORCH screen, X-ray of the forearm for radial anomalies and cranial ultrasound, were all normal. The platelets remained low but stable over the next few weeks and in consultation with the pediatric haematologist, the decision was made to repeat Full blood count (FBC) at regular intervals and all cell lines normalized after at least 2 months of close monitoring.

Conclusions The association between RI and severe thrombocytopenia at birth followed by falling neutrophil counts leading to pancytopenia is rare and there are very few cases reported in the literature.

REFERENCES

1. Sharon Lewin, James B Bussel, 'Review of Foetal and Neonatal Immune Cytopenias', *Clinical Advances in Hematology & Oncology*, vol 13, Jan 2015
2. Akhil Maheshwari, 'Neutropenia in the newborn', *Current Opinion in Haematology* Jan 2014

P479

EPIDEMIOLOGICAL STUDY OF THE RECORDED BIRTHS, ADMISSIONS TO THE INTERMEDIATE NEONATAL INTENSIVE CARE UNIT AND TRANSFERS, IN RELATION TO DEMOGRAPHIC AND OTHER FACTORS (2016–2017)

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Introduction The Intermediate Neonatal Intensive Care Unit (I.N.C.U), which pertains to our Pediatric-Department, represents a stressful environment (for newborns), their families, and the staff alike.

Aim Comparative record of all the newborns admitted to (I.N.C.U), (regardless of their origin), to present an overview of the patients' summary (in relation to demographic and other factors), to comment on the cases of the newborns transferred to the regional Tertiary Hospital (TH).

Material-method Informations from medical-records and the electronic database.

Results In 2016, 611 births were recorded in the Obstetrics/Gynecology Department (O/G-D) of our Hospital and 131 admissions in (I.N.C.U) (21.4%): 64.1% of them were Males, 35.9% Females. Causes of admission were, (descending order): Infections 41 (31.3%), Jaundice 29 (22.1%), Difficulty breathing 14 (10.7%), Prematurity 12 (9.2%), Perinatal stress 11 (8, 4%), Feeding etc. The admissions came from the O/G-D 98 (74.80%) of our Hospital, the Private Maternal Hospitals (PMHs) 9 (6.9%), while the remaining 24 (18.3%) were come from their homes. Out of the 131 neonates admitted, 25 (19.03%) were transferred, (18 of them to the TH-Larissa and 7 of these, in other THs. 6 (24%) on Diffused O₂, 2 (8%) in a Head-Box, 17 (68%) without O₂.

In 2017, 603 births were recorded in the O/G-D. There were 131 neonate admissions (I.N.C.U) (21.7%): 65% of them (M), 35% (F). 60 (45%) of them had no social insurance. Causes of admission were, (descending order): Infections 34 (26%), Shortness of breath 30 (23%), Jaundice 23 (17.6%), Prematurity 12 (9.2%), Perinatal stress 9 (6.9%), Subdural hematoma 4 (3.05%), syndromes-Feeding-Surgical-problems etc. 96 (73.3%) admissions came from the O/G-D, 19 (14.5%) from the PMHs, while 16 (12.2%) were come from their homes. Out of the 131 neonates admitted, 33 (25.2%) were transferred, 31 (93.3) of which to the TH-Larissa: 3 (9.7%) were intubated, 5 (16.1%) on Diffused O₂: 12 (38.7%) in a Head-Box and 11 (35.5%) without supportive O₂. 2 cases, were transferred to other THs, without O₂.

Conclusions In our I.N.C.U, the care provided to the newborns and the overall support offered to their families are complex and variant. The medical staff handled the incidents properly, minimizing the need of transfer to a TH. Neonates that required transfer were mostly boys (p:0.037, Pearson chi-Square), with respiratory problems, prematurity, birth defects or infections. Most of the newborns (52.6%) of the (PMH), arrived in a critical condition, thus requiring urgent transfer to a TH.

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EVIDENCE-BASED DESIGN FOR NEONATAL UNITS: A SYSTEMATIC REVIEW

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Background Evidence-based hospital design could significantly improve patient safety and make patient, staff and family environments healthier. This systematic review aims to determine which neonatal intensive care unit design features lead to improved neonatal, parental and staff outcomes.

Methods Medline, CINAHL, Web of Science Citation Index and Cochrane Central Register of Controlled Trials Registry, were searched in January 2017. Using combinations of the relevant key words, review was performed following the recommended guidelines for reporting systematic reviews. English language limitation was applied and term limited to 2006–2016.