(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)

Anastasia Anastasiou-Katsiardani*, Stavroula Gakikou, Stavroula Svolou, Zoi Korka, Argyro Tragalou, Maria Mpiassa, Garyfallia Akrivouli, Panagioti Tsilaki, Anna Mihti, Andromachi Karali, Dimitra Stamou, Kalliopi-Pinelopi Katsiardani. *Section Intermediate Neonatal Care Unit (I.N.C.U), Paediatric Department, General Hospital Volos 'Achilloupoleio', County of Magnesia, Volos, Greece*

10.1136/archdischild-2019-epa.815

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.

P480

EVIDENCE-BASED DESIGN FOR NEONATAL UNITS: A SYSTEMATIC REVIEW

¹Niamh O'Callaghan, ¹Anne Dee, ^{2,3}Roy K Philip*. ¹Mid-West Department of Public Health, HSE, Limerick, Ireland; ²University Maternity Hospital Limerick (UMHL), Limerick, Ireland; ³Graduate Entry Medical School (GEMS), University of Limerick, Limerick, Ireland

10.1136/archdischild-2019-epa.816

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.

Pre-piloted forms were used by one reviewer and cross verified by second reviewer. Included studies were assigned a grade based upon their level of evidence and critically appraised using defined tools. Data were not synthesized for metanalysis due to nature of literature reviewed and heterogeneity.

Results 3,592 titles were screened with 43 full-texts assessed for eligibility. 30 studies were deemed eligible for inclusion. These included 19 cohort studies, two qualitative studies, seven cross-sectional studies, one systematic review (peer reviewed articles up to January 2011) and one randomised control trial. Grey literature search from guidelines, catalogues and repositories yielded additional 10 guidelines.

Conclusions Optimally designed neonatal unit has many possible health implications, including improved breastfeeding, infection and noise control, reduced length of stay, hospitalisation rates and potentially improved neonatal morbidity and mortality. 'Single family room' design for neonatal units is recommended. Consideration should be given to infection prevention and control, including sink frequency and positioning, and airborne isolation facilities. Support areas for families, staff and breastfeeding mothers are also recommended. High quality, family centred neonatal care could be assisted through well grounded, future proofed and technology enabled design concepts that have the potential to impact upon early life development. Nature of the topic poses inherent limitations for conduct of randomized trials; however observational studies using standardised methodologies could add further evidence.

P481

CLINICAL CASE OF THE NEW MUTATION IN PIGW GENE WITHOUT HYPERPHOSPHATASEMIA

¹Dinara Sadykova, ^{1,2}Evgeniia Slastnikova*, ¹Svetlana Zdanova, ²Zulfiya Vafina, ¹Zulfiya Khabibrakhmanova. ¹Fsbei He Kazan Smu Moh, Kazan, Russian Federation; ²Children's Republican Clinical Hospital Of The Republic Of Tatarstan Ministry Of Health, Kazan, Russian Federation

10.1136/archdischild-2019-epa.817

The 6 day old girl was born at the gestational age of 37 weeks, from the 6th pregnancy, 3rd urgent delivery; her mother's age was 37 years. The first child was born in 2002 and died at the age of 3 months, the second child was born in 2004, died at the age of 6 months, the 3rd pregnancy in 2008 resulted in antenatal fetal death at the gestational age of 22 weeks, the 4th and the 5th pregnancies were medically interrupted at early stages on request of the family. Convulsive syndrome was observed in 2 eldest children, usage of the valproic acid drugs as an anticonvulsant therapy was ineffective. The fetus ultrasound performed during the 6th pregnancy showed multiple echo markers of visceromegaly and other abnormalities. The patient's mother was consulted by geneticist; invasive prenatal diagnostical procedures were carried out. Phenotypically, the girl is similar to the previous children: macrosomia; low forehead skull, supraorbital arc; face - hypertelorism, saddle nose, macrognathia, macroglossia; ears are deformed; hands - flexion contracture of the fingers, feet - placing the fingers on each other; frog belly, diastasis of recti; genital hypoplasia. From the first days of life the child has convulsive syndrome, with an increase in dynamics. Eye phenomena prevailed, head dropping backwards, anxiety expressed. On 8 day of life phenobarbital was prescribed. While receiving phenobarbital, the intensity of convulsions

somewhat decreased, however, it was not possible to achieve complete relief from both the clinical picture and the EEG data. The treatment included the drug Levetiracetam (Keppra), the dose increased to 40 mg/kg/day. Against this background, convulsive episodes remain. Homozygous c.1463G> T p. Cys488Phe mutation was detected in the PIGW gene (NM_178517.3) on chromosome 17q12, which encodes the synthesis of glycosylphosphatidyl inositol. This mutation is absent in population databases (EXAC, GNOMAD, GENOMED), but several computer algorithms predict its potential pathogenicity. In our patient, alkaline phosphatase activity remained within the normal range. It's described in literature that clinical manifestations similar to our patient. Thus, one of the possible causes of intractable convulsive syndrome, accompanied by characteristic phenotypic signs and, not always, high alkaline phosphatase activity, should be sought in the group of diseases caused by the biosynthesis glycosylphosphatidylinositol disease. Hopefully, over time, specific therapy will appear for these patients.

P482

MASSIVE PARIETAL SKULL DEPRESSION IN A LATE PRETERM NEONATE

¹Robert McGrath*, ¹Abhidhama Kaninde, ²Stephanie Ryan, ²Ailbhe Tarrant, ¹David Corcoran. ¹Department of Neonatology, The Rotunda Hospital, Dublin, Ireland; ²Department of Radiology, Temple Street Children's University Hospital, Dublin, Ireland

10.1136/archdischild-2019-epa.818

Case report An 1810 g female was born via emergency caesarean section at 34 weeks gestation to a primigravid 44-year-old mother for the indication of non-reassuring cardiotocograph tracing in the setting of failed induction of labour and premature rupture of membranes. Antenatal history was significant for maternal pre-eclampsia and intrauterine growth restriction with oligohydramnios on ultrasound ten days prior to delivery. The baby was delivered in good condition with Apgar scores of 8 and 10 at one and five minutes. On newborn examination a left parietal skull depression (SD) 3 cm in diameter and 0.8 cm deep was noted with no associated bruising or oedema. The anterior fontanelle was patent and soft. Head circumference was 30 cm. Detailed newborn examination including neurological examination was otherwise unremarkable. The neonate was admitted to the neonatal unit for observation due to prematurity and for investigation of the SD. A skull X-ray revealed a depression in the left parietal bone with no associated fracture and normal bone density. Appearances were consistent with congenital depression due to in utero moulding. An ultrasound of the cranial contents demonstrated a structurally normal brain and ventricular system. Due to the absence of an associated fracture or neurological deficits, no further imaging was performed and the SD was managed conservatively. When seen in the paediatric outpatient clinic at six weeks corrected gestation, normal development and a resolving SD were noted. She will be followed until six months of age as the literature recommends.

Discussion Congenital depression of the neonatal skull is rare with an estimated incidence of 1/10,000 in western countries. The majority of cases have been linked to obstetric trauma, however a minority are believed to occur in utero. The cause is usually unknown, however it has been suggested that compression of the soft foetal skull by pressure from the sacral promontory or ischial spines of the maternal pelvis,