ABSTRACT ID: 001

Efficacy on Antimicrobial Activity and Immunoglobulin a Preservation on Donor Breast Milk After Flash Heat Treatment, and Holder Pasteurization: a Comparative Study

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INTRODUCTION: Human milk is considered the optimal nutritional source for infants. Breast milk is safe and contains proteins such as IgA, which offers passive protection for the gastrointestinal system. When breastfeeding is impossible, pasteurized human milk is considered the best alternative. Due to the possibility of microbial contamination during collection and handling, milk is pasteurized to prevent transmission of pathogens. In low income and remote areas where pasteurization is inaccessible, the pursuit for the best alternative in rendering donor milk safe still remains. This study aims to determine and compare the efficacy of flash heat treatment and holder pasteurization in preserving IgA while reducing bacterial contamination on donor breast milk.

MATERIALS&METHODS: This is an experimental study utilizing pooled donor breastmilk from healthy reproductive aged mothers, later subjected to bacterial analysis using Blood agar and MacConkey plates. IgA level determination pre and post flash heat treatment and pasteurization was performed using Bindarid IgA Kit. The pooled expressed milk were equally divided to make 10 bottles per group, with 50ml of milk sample per bottle. Each sample bottle were randomly designated into 2 groups: flash heat treatment group, and holder pasteurization (control group). Bacteriologic culture (using blood agar and McConkey agar) and Immunoglobulin A (IgA) level determination were done on each group pre and post intervention. Immunoglobulin A levels were determined by immunodiffusion kits by measuring ring diameters corresponding to a specific IgA concentration reported in milligram per liter (mg/L). Standardized scores were used to normalize population with unknown parameters. T-test comparison of means and Levene's test for equality of variances were used.

CONCLUSIONS: The two groups generated a statistically significant reduction in colony forming units observed using Blood agar and MacConkey plates while exhibiting no significant decline in IgA level concentrations. This study suggests that flash heat treatment may be utilized as an alternative method in reducing bacterial contamination while maintaining immunoglobulin A levels, and is therefore able to provide safe and effective donor breast milk. Its impact may be applied to low income and remote areas where holder pasteurization is inaccessible.

KEY WORDS: breastmilk holder pasteurisation flash heat immunoglobulin A

ABSTRACT ID: 002

Malaria in Neonates

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INTRODUCTION: Malaria is a major problem worldwide and especially in Sub- Saharan African with significant health risks for infants and pregnant women

Despite interventions policies and malaria control strategies in Rwanda, some cases are still seen in hyper endemic areas.

Newborns rarely become ill with malaria because they are protected by of passive maternal antibodies,high levels of fetal hemoglobin (which is resistant to P. falciparum) and the placenta barrier.

Its occurrence in neonates is unusual and though it can be acquired from the mother prenatally or perinatally following a breach of the placenta barrier; from mosquito bites, or also by transfusions.

MATERIALS&METHODS: Three cases of neonatal malaria aged between 0 to 8 days (Preterm and term included) of life were reported from the CHUB-NEONATOLOGY department from July to September 2014.

CONCLUSIONS: a) Neonatal malaria infection should be included in the differential diagnosis of neonatal sepsis

b) A single negative blood smear does not exclude malaria

c) Transfusion centers should test blood for malaria parasites

d) Pregnant mothers should also be tested

e) Antenatal and during pregnancy screening and prophylactic treatment in pregnant women should be advised

Further research is needed to better understand the transmission,diagnosis and the treatment for malaria in neonates.

KEY WORDS: CHUB/BUTH (Butare University Teaching Hospital), Malaria, Neonate, Preterm, Blood smear, peripheral blood film, Artesunate.

ABSTRACT ID: 003

Clinical Case: Recurrent Spontaneous Intestinal Perforations in Newborn

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INTRODUCTION: Spontaneous intestinal perforations are most commonly found in very low birth weight and extremely low birth weight premature infants, only a few cases have been described in full-term newborns. The etiology and pathogenesis of the disease are unknown, only some unproven theories have been proposed in the literature. We present the clinical case of the recurrent spontaneous jejunal perforations on the background of jejunal atresia in newborn, that is very rare condition.

MATERIALS&METHODS: Newborn boy was admitted to the neonatal intensive care unit on the first day of his life. Anamnesis states that the child was born from III pregnancy, III urgent delivery. Pregnancy was on the background of episodes of acute respiratory viral infection on 8-10 and 34-35 weeks of gestation, placental dysfunction, polyhydramnios, trichomonas vaginitis, alcohol abuse. Birth weight is 2400 g, Apgar score is 3/4.

After birth the child's condition was severe due to gastrointestinal signs (abdominal distention, tenderness, hypoactive bowel sounds), respiratory disorders, neurological symptoms, intoxication syndrome. At the age of 14 hours, celiocentesis was performed to the child and 320 ml of turbid green content was evacuated. Urgent surgery (median laparotomy, sanation and revision of the abdomen, enterolysis and right loop ileostomy) was performed.

The child's condition has stabilized after surgery, but it has deteriorated in 2 weeks, the signs of intestinal dysfunction (abdominal distention, stagnant contents of the stoma) appeared. A relaparotomy, revision of abdomen, enterolysis and closure of two small intestine perforations, sanation and drainage of the abdominal cavity were performed. Child's condition was stabilized, peristalsis was restored, slow positive dynamics in weight gain was traced, cardio-respiratory disorders were cured. Ileostomy functioned good, had pink color and was fixed well. Maceration with ulceration and bleeding was observed around the stoma area, which was healed with applying of powder and paste Stomahesive. Cleansing enemas of outlet end of intestine and per rectum were performed regularly to estimate the passability and capacity of excluded distal intestine.

The next surgery was the ileostomy closure and formation of entero- entero- anastomosis "end-to-end" that was performed after 3,5 months. Child, with weight 4300 at the age of 4,5 months, with paternal derivation, was transferred into an orphanage. Currently the boy has anemia, malnutrition, delayed psycho-motor development, which can be estimated as long-term consequences.

CONCLUSIONS: Despite the severe course, there is a favorable result in treatment of spontaneous intestinal perforations on the background of digestive tract malformation, thus confirming the success of neonatal surgery due to the early diagnosis with appropriate therapeutic measures - transportation, anesthesia, prevention of early and late postoperative complications. However, it is important to improve the prenatal diagnosis for reducing complications and improving the therapeutic management.

KEY WORDS: spontaneous intestinal perforations, newborns

ABSTRACT ID: 004

The Effect of Zinc Supplementation on Immune Response to Recombinant Hepatitis B Vaccine in Premature Infants

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INTRODUCTION: Zinc deficiency is known to impair immunologic functions. However, the effect of zinc supplementation on immune response to hepatitis B vaccines in premature infants is not known , the aim of this study was to determine the effect of zinc supplementation on immune response to the hepatitis B vaccine in premature infants.

MATERIALS&METHODS: In a randomized single blind placebo controlled clinical trial on 106 premature infants 28-36 weeks gestation with birth weight <2500gram, who were born to Hepatitis B surface antigen (HBsAg) negative mothers enrolled into this study and randomly allocated into two groups. The intervention group received hepa¬titis B vaccine plus 3 mg zinc sulfate daily for 6 months and the control group received hepa¬titis B vaccine plus placebo.1month after last vaccine injection, response to the hepatitis B vaccine assessed to each group.

CONCLUSIONS: 53 infants enrolled to intervention and control groups, immune response to vaccine hepatitis B in zinc supplementation group was 100%(53/53) and mean titer of antibody was 236.0±443.5mIU/ml and immune response in control group was 86.8%(46/53) with mean titer of antibody170.0±205.0mIU/ml ,There were statistical significant differences in percentage of positive anti hepatitis B titers (≥ 1:10 mU/ml) between the intervention and control groups(P value= 0.006).However there were no significant differences in mean titer of antibody between two groups. (P value=0.328).

This study shows that zinc sulfate supplementation enhances the level of immunity in response of hepatitis B vaccine among premature infants.

KEY WORDS: hepatitis B, immunity, zinc supplementation, premature infants.

ABSTRACT ID: 005

Diagnostic and Management Differencies Between Polycystic and Multicystic Kidney Disease in Newborn

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INTRODUCTION: Polycystic kidney disease PKD is the fourth leading cause of kidney failure. Multicystic kidney disease (MKD) is the most common form of cystic disease of the kidney in childhood. Differential diagnostic is not so difficult in newborn period with ultrasound. Medicament management depends from stage of disease and complications, but it is s similiar in both cases, except renal surgery and transplatations. Multicystic kidney disease differs from polycystic kidney disease in that it is unilateral, with multiple noncommunicating macrocysts of varying size.

MATERIALS&METHODS: The preferred diagnostic procedure in neonate suspected of having cystic kidney disease is renal ultrasonography, which demonstrates enlarged or cystic kidneys. In addition to echocardiography in the neonatal period after birth, authors have used fetal echocardiography in pregnant mothers. These are cystic renal findings ultrasound were confirmed by CT scan or MRI scan. Molecular genetic testing by direct mutation screening was clinically available.

Results: Hypertension is the earliest and most prevalent manifestation of ADPKD and ARPKD, occurring in up to 40% of children. Other manifestations of kidney disease include flank or abdominal pain, macroscopic hematuria, proteinuria, and microalbuminuria In MCDK, because of the associated ureteral obstruction, the patient may have pyelonephritis in spite of an unremarkable urine specimen. Renal insufficiency is less common in children with autosomal dominant polycystic kidney disease than in those with the recessive form. Hepatic involvement is present in all children with autosomal recessive polycystic kidney disease but may not manifest in neonates (60%).

CONCLUSIONS: Infants surviving the newborn period should be monitored closely for decreased renal function, hypertension, infections, and dehydration. Renal macrocysts are more common in older children. Grossly, the kidney appears to be an enlarged mass of cysts among immature primitive tissue in both cases, often with surrounding fibrosis and an atretic collecting system.

KEY WORDS: ADPKD, ARPKD, MCDK, Newborn, screening, management.

ABSTRACT ID: 006

The Role of Nitric Oxide in The Apoptosis Modulation in Newborns With Pneumonia

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INTRODUCTION: Nitric oxide is an important diagnostic marker and mediator of the inflammatory process, which plays a key role in the mechanism of programmed cell death, thus, forming the base of many pathological diseases. Therefore, the study of mechanisms of pathological process, involving this marker in neonatal pneumonia, will facilitate early diagnosis and will reduce the complications.

MATERIALS&METHODS: Aim. To study the nitric oxide processes and its links with the neutrophils' apoptosis in pneumonia in newborns.

Methods. The study involved 73 newborns with pneumonia (moderate severity of disease was diagnosed in 44 neonates (I group); severe pneumonia – in 29 (II group)) and 23 healthy newborns of the control group. The intensity of neutrophils' apoptosis and necrosis was determined by flow cytometry, nitric oxides metabolites (NO2 and NO3) – by spectrophotometry.

Results. The level of nitric oxide metabolites (NO2 +NO3) in newborns with pneumonia is higher than in healthy children (16,93 (15,82; 17,79) mcmol/ml) and correlates with disease severity (in I group – 22,65 (21,42; 23,40) mcmol/ml, in II group – 26,82 (25,81; 27,91) mcmol/ml). The level of NO3 increases moderately, while NO2 generation is more intense, exceeding control indexes in both groups (pc-1<0,001; pc-2<0,001; p1-2<0,001).

The intensive growth of neutrophils' apoptosis was revealed in newborns with pneumonia of moderate severity (pc-1<0,001), while necrosis prevailed in severe pneumonia (pc-2<0,001).

Inverse correlation (-0,63; p<0,05) was found between level of nitric oxide metabolites and neutrophils' apoptosis; and direct correlation (0,68; p<0,05) was revealed between NO metabolites and neutrophils' necrosis indices.

CONCLUSIONS: Conclusions. We have found increased generation of nitric oxide metabolites, in particular NO-2 in newborns with pneumonia. Importantly, this increase of NO-2 production was directly correlated with the disease severity. Also, this study has proven that NO-2 has multidirectional effects on neutrophils' apoptosis and necrosis, leading to toxic accumulation of neutrophils in the organism thus, enhancing the inflammatory and intoxication process that impact the severity of the disease.

KEY WORDS: newborns, pneumonia, nitric oxide, neutrophils' apoptosis

ABSTRACT ID: 009

Retrospective Analysis of Stabilisation of Preterm Babies in The Delivery Room Using Nasal High Flow

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INTRODUCTION: The majority of babies born prematurely require stabilisation, not resuscitation, in the Delivery Room (DR) (REF NLS -2016). Whilst current guidance supports the use of nasal Continuous Positive Airway Pressure (CPAP), we recently demonstrated the feasibility of the use of nasal high flow (HF) in the stabilisation of premature babies (23 to 29+6 weeks gestation) in the delivery room (DR) prior to transfer to NICU (REF).

Our study showed that stabilisation on HF reduced the rate of DR intubation and surfactant administration compared to our previous practice. Here we present data on a subsequent unselected cohort of preterm babies who underwent stabilisation in the Delivery Room, with HF where possible.

Our aim was to determine the feasibility of stabilisation and short term outcomes from the routine use of HF in the DR.

MATERIALS&METHODS: We collected data for babies born between 23 and 31+6 weeks at St Peter's Hospital between May 2015 and April 2016. We recorded the gestational age, birth weight, use of HF in the DR, admission FiO2 and temperature, need for surfactant and inotropes. We gathered information about pneumothorax, pulmonary haemorrhage, severe IVH (grade III-IV) and whether HF was sustained for 72 hours.

A total of 93 eligible babies were admitted to NICU during the study period. Mean birth weight was 1054g (range 340-2140g) and mean gestational age 28+2 weeks.

36 babies were commenced on nHF in the DR, the rest stabilised/resuscitated by application of facial CPAP by mask (38), facial O2 (2), endotracheal intubation (16). 1 baby required no additional support.

CONCLUSIONS: In our pilot study we showed that 60% of preterm babies were sustained on HF for the first 72 hours. In this work, using an unselected population, 61% were sustained on HF for 72 hours regardless of whether they received HF or facial CPAP at delivery.

The population of babies who were stabilised on HF were, on average, less mature and smaller than those stabilised on facial CPAP. The most preterm babies often required intubation. There was no difference in the group's admission temperatures.

There appears to be no difference between the HF and facial CPAP in view of sustaining HF for 72 hours, inotropic support and pneumothoracies, but fewer babies received surfactant in the HF group (25% vs 39%), although the overall numbers in each group are small.

In this work, we have shown that, under non-study conditions, it is feasible to stabilise and sustain babies on HF in the DR. However due to the short notice available to prepare for some deliveries, babies can also be safely managed on CPAP by face mask, and then switched to HF on arrival to NICU.

KEY WORDS: Stabilisation on nasal high flow

ABSTRACT ID: 010

Assesment of Clinical and Laboratory Findings of PDA

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INTRODUCTION: The ductus arteriosus (DA) is a fetal vascular connection between the main pulmonary artery and the aorta that normally closes soon after birth. A patent ductus arteriosus (PDA) occurs when the ductus fails to completely close after delivery. Ductal closure is delayed in preterm infants and the risk of PDA is inversely proportional to gestational age. Risk can be as high as %30 in VLBW (Birth weight <1500 gr) babies.The diagnosis of patent ductus arteriosus (PDA) is usually based upon its characteristic clinical findings (murmur, an unexplained deterioration in respiratory status) and confirmed by echocardiography. In preterm infants without a murmur or other physical findings suggestive of PDA, there can be hemodinamically significant pda (hsPDA). To determine hsPDA clinical examination and routine echocardiography should be apply on first 24-72 hours.

Treating whether oral ibuprofen has a same efficacy and tolerance in comparison to intravenous ibuprofen in closure of patent ductus arteriozus in VLBW preterm infants.

MATERIALS&METHODS: Sixty six VLBW preterm infants with patent ductus arteriozus were enrolled in this prospective- double blind randomized study. After appliying echocardiography and clinic examination with hsPDA patients received either intravenous or oral ibuprofen at an initial dose of 10 mg/kg, followed by 5 mg/kg at 24 and 48 h. The success rate and evaluation of N terminal pro BNP (NTpBNP) were the major outcomes of the study.

Patent ductus arteriozus closure rate was equal in oral an iv ibuprofen group (>%90) after first course of the treatment (p>0,05). NTpBNP levels rised in hsPDA group but there was no difference between the group statically significant.

CONCLUSIONS: To eveluate hsPDA of very preterm babies assesment of clinical examination and routine echocardiography on 24-72 hours of postnatal age should be done and also biomarkers, such as NTpBNP can be considered to decide managing of PDA.

KEY WORDS: Ibuprofen, NTpBNP, patent ductus arteriozus, prematurity

ABSTRACT ID: 011

Premedication for Neonatal Intubation: Evolution of Uk Practice, 1998-2015

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INTRODUCTION: The objective was to study current practice in administering pre-intubation drugs in UK Neonatal Units for non-emergent neonatal intubations, compared to earlier UK studies on this topic.

MATERIALS&METHODS: A telephonic survey of all level 2 and 3 UK neonatal units was conducted with 96% response. Routinely intubating units, those only intubating prior to transfer to a higher level of care and the practices of level 3 units were considered separately in a subgroup analysis. Data concerning the unit policy for pre-intubation medications was collected and analysed. For comparability, the same methods as the two previous UK studies on the same topic, conducted in 1998 and 2007, were used.

CONCLUSIONS: Administration of pre-intubation medications was found to be routine in 100% of units compared to 93% in 2007 and 37% in 1998.

As reflected by these figures, the importance of pre-intubation medication in neonates is now well recognised and the routine use of medications prior to non-emergent intubation standard practice. However, there are significant variations in current practice across the UK. The authors believe that there is a need for national best practice guidance to be published on this topic.

KEY WORDS: pre-intubation, neonatal, pre-medication

FIGURES:
https://www.eiseverywhere.com/eselectv2/backendfileapi/download/105597?id=GHm8nX%2B%2BoGM%3D

ABSTRACT ID: 012

Bilateral Renal Vein Thrombosis in a Homozygous for Mthfr-C677t Neonate with Other Predisposing Factors

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INTRODUCTION: Renal Vein Thrombosis (RVT) is the most common form of venous thrombosis in neonates and carries a grave prognosis for affected kidneys. We aimed to report an interesting case of a preterm neonate with bilateral RVT and various underlying risk factors.

MATERIALS&METHODS: The patient was a 2800gr male baby born at 36 weeks gestation to a 44 year old mother by cesarean section. The patient was anuric from birth and after renal ultrasonography, bilateral RVT was diagnosed with involment of the inferior vena cava and the hepatic veins. Factors predisposing to RVT in our case was maternal diabetes, prematurity, perinatal stress and early perinatal infection. There was no umbilical catheterization. After investigation of possible underlying prothrombotic conditions associated with RVT the patient was found homozygous for MTHFR (C677-T mutation) with a mild elevation of blood homocysteine and slight protein C and S decrease. The neonate received anticoagulation therapy with low molecular weight heparin. Despite the early initiation of peritoneal dialysis the patient remained anuric and eventually died at the 46th day of his life.

CONCLUSIONS: Even though there is no clear evidence that MTHFR mutations predispose to RVT in neonates, in our case MTHFR mutation appeared to contribute to RVT along with the other known underlying factors.

KEY WORDS: Renal Vein Thrombosis; MTHFR mutations

ABSTRACT ID: 013

Seasonal Distribution of Congenital Heart Diseases and Socioeconomic Data

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INTRODUCTION: INTRODUCTION The aetiology of Congenital Heart Disease (CHD) is considered multifactorial. Genetic factors and environmental conditions may affect the development of CHD.

OBJECTIVE To investigate any seasonal distribution in the incidence of CHD and also to find any association with demographic and socioeconomic data of their families.

MATERIALS&METHODS: METHODS 52 infants with CHD were retrospectively studied, born from 2013 to 2015 and admitted to a Neonatal Intensive Care Unit of a third degree Children's Hospital. The date of birth (month) was recorded and the date of conception was assumed based on the reported gestational age. Family data was also recorded related to their nationality, residence, familial status, educational and occupational status, medical insurance and the use of medical services during pregnancy

CONCLUSIONS: RESULTS Of the infants with CHD, the incidence of birth from May to October was higher compared to the other months of the year, the incidence of the conception period between October and December was higher compared to the other months of the year (25/52 pregnancies 48%), and the incidence of having covered the first trimester of their intrauterine life from October to February was higher compared to the other months of the year. This fact could imply increased exposition to infections during winter.

In the population studied, 61.54% were of Greek nationality, 51.92% used to live in a big city, the vast majority of the parents were married but only 13.47% of them had academic education. 78.85% of them used to have an occupation, 67.30% had national insurance and although 69.24% of the pregnant mothers had been having medical follow-up, antenatal diagnosis was done in only 23% of the cases.

CONCLUSION An uneven seasonal distribution in the incidence of CHD was observed. Obstetric care, antenatal diagnosis and educational status of the parents were negatively associated with birth of an infant with CHD.

KEY WORDS: congenital heart disease, seasonal distribution

ABSTRACT ID: 015

The Effect of Kangaroo Mother Care (Kmc) of Twins and Triplets on Breast Feeding at The Time of Nicu Discharge

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INTRODUCTION: Kangaroo mother care (KMC), is defined as skin-to-skin contact between a mother and her newborn. KMC and maternal care provision have become an important aspect of care in the Neonatal Intensive Care Unit (NICU) associated with improved short-and long-term neonatal outcome. KMC has been associated with improvements in preterm infant outcome including decreased infant pain sensation and stress during mechanical ventilation and, improved lactation and breast-feeding success as well as improved preterm infant development and growth in the neonatal intensive care unit. For mothers with a preterm infant, participation, and education in provision of KMC may be facilitated by NICUs that practice family-centered care (FCC) as a care standard in the NICU. KMC of newborn infants with extremely low birth weight not only by mothers but also by fathers ought to be the routine procedure. A lot of barriers exist that make it difficult or even impossible but KMC is also possible for ELBW infants born from multiple pregnancies.

MATERIALS&METHODS: The benefits of this procedure for twins and triplets have been presented. We analyzed the feeding of 42 twins and 10 triplets in the years 2014-2015 in the Department of Neonatology USK and KMC time during their treatment in the NICU. KMC used from the first days of hospitalization after the stabilization of the infant. Minimal enteral nutrition has been applied from the first hours of life when the first drops of colostrum has been obtained. TPN administered by the ECC or the umbilical vein has been withdrawn from the second week of life. During the hospitalization, infants has been fed with mothers' milk, while at discharge 73,5% were fed exclusively mothers' milk, 20,3% were fed mothers' milk and formula for preterm infants, only 6,2% were fed formula for preterm.

CONCLUSIONS: Scheme of parents education and KMC implementation has been shown. Only proper education of both medical staff, as well as mothers allows for the rapid implementation of policies favorable to the natural feeding premature twinws and triplets during hospitalization and the day of NICU dischardge.

KEY WORDS: KMC, NICU, breastfeeding, twins, triplets

ABSTRACT ID: 017

Analysis of Infection in Neonatal Intensive Care Unit: a 44 Deaths Report

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INTRODUCTION: Neonatal infection is one of the most common disease in Neonatal intensive care unit, and is also a crucial cause of neonatal death. An effectual therapy at the very beginning of the infection can significantly reduce the mortality of neonate. This study aim to uncover the status of neonatal infection and current antibiotic therapeutic proposal.

MATERIALS&METHODS: An observational, retrospective study was performed, assessing all the infants that were dead during hospitalization between 2013.1.1-2014.12.31 in West China Second University Hospital. Analyze the clinical data, discover the risk factors and characteristics of infection, and summarize the current precaution and therapeutic proposal.

CONCLUSIONS: 40(91%) out of 44 in total infants had infective symptom, and 68% of their mothers got infective symptom too, and only 38% of these mothers received antibiotic therapy, while the drug had low sensitivity and the duration of use was not correct. 35(88%) out of 40 infected infants received antibiotic therapy, while 5(12%) infants were unable to received effective therapy due to the unobvious clinical symptom and early on set of death. The positive rate of clinical pathogen samples was 17%, most of which was Klebsiella pneumonia Streptococcus viridans and Escherichia coli. Piperacillin tazobactam sodium and Meropenem is most common used. Infection occupies an crucial role in neonatal death, by improving maternal infection treatment and enhancing the management of infants can significantly reduce neonatal mortality.

KEY WORDS: neonatal death, neonatal infection, maternal infection ,antibiotics

TABLES:
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ABSTRACT ID: 019

Minimally Invasive Surfactant Therapy In Nicu Of Foggia's Hospital

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INTRODUCTION: Standard methodology of surfactant administration has been represented for many years by the installation in bolus via the endotracheal route, putting the neonate on mechanical ventilation. [1] [2].

About 20 years ago, a group of Danish neonatologists demonstrated that, after surfactant administration, extubation and transition to CPAP therapy were both possible and well borne by many newborns (INSURE methodology). [3]

In the aim to reduce the risk of intubation and barotraumas related to the ventilation during INSURE application, a less invasive method of surfactant administration has been studied: the MIST technique (Minimally Invasive Surfactant Therapy).

This technique does not require intubation and intermittent positive pressure ventilation, it does not need sedation and allows not to interrupt CPAP application during the procedure development, avoiding in this way, lung derecruitment.

MIST consists in observing glottis by direct laryngoscopy and in installing surfactant by an insertion of a thin catheter or a flexible tube into trachea.

MATERIALS&METHODS: This study has been conducted over the period from March 2014 to March 2015 at the Neonatology and Neonatal Intensive Care Unit of "Ospedali Riuniti" in Foggia.

Surfactant has been administered via MIST in 12 infants suffered from Hyaline Membrane Disease, as provided in the guidelines of European Consensus on the Management of Respiratory Distress Syndrome in preterm infants [1].

Examined population was composed by 10 inborn and 2 outborn infants, 3 females and 9 males with average gestational age 31,3 ± 2,2 weeks and with an average weight at birth 1559 ± 429,5 gr.

This group of neonates, defined "Gentle Care Group", has been compared with a control group constituted of 12 neonates treated with INSURE method and named "INSURE Group" which included 10 inborn and 2 outborn infants, 3 females and 9 males with average gestational age 31,3 ± 2,1 weeks and with an average weight at birth 1526 ± 341 gr.

In regard to Parental Therapy with steroids, there have not been statistically significant differences as well as Apgar score at 1 and 5 minutes.

In both groups, alveolar recruitment has been used in the delivery room by the application of SLI maneuver (Sustained Lung Inflation) after that newborns were treated with nasal IPPV and then in Neonatal Intensive Therapy.

CONCLUSIONS: As primary outcome it has been appreciated the need of mechanical ventilation in infants 72 hours old and a significant difference between the two groups ($p = 0,01$). Any of the patients had been on mechanical ventilation at 72 hours, on the contrary, in insure group, 5 infants (41,6%) were intubated at 72 hours. Secondary outcomes are shown in the following table.

In regard to the other complications, such as pneumothorax, sepsis, IVH, BPD, LPW there have not been statistically significant differences between the two groups.

The outcomes of this study indicate that MIST technique is safe and efficacious in preterm infants. It limits, in a significant way, the need to resort to mechanical ventilation which causes lung injury. In regard to secondary outcomes, statistically significant differences between the two groups do not stand out.

MIST technique allows to administrate the surfactant thanks to NCPAP support, without interruption of lung recruitment. This phenomenon occurs using the INSURE technique when non-invasive ventilation support is interrupted to make intubation.

Moreover spontaneous breathing of the infant and CPAP support promote a more homogeneous surfactant distribution.

KEY WORDS: MIST, surfactant, INSURE, Preterm

TABLES:
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ABSTRACT ID: 020

Hospital Admission Due to Respiratory Viral Infections in Moderate Preterm, Late Preterm and Term Infants During Their First 18 Months Of Life

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INTRODUCTION: Respiratory viral infections are a major cause of hospital admission in infants less than 2 years and might cause severe symptoms in preterm infants. Our aim was to analyze respiratory infections associated with different virus in moderate-late preterm and term infants, who required hospital admission in their first 18 months of life.

MATERIALS&METHODS: A prospective study was conducted at Severo Ochoa Hospital (Leganés, Madrid, Spain), to assess incidence, epidemiology and clinical characteristics of respiratory viral infections requiring hospitalisation in 566 infants, born between October 2011 and December 2014, during their first 18 months of life. A total of 16 respiratory viruses were detected by polimerase chain reaction in nasopharyngeal aspirates. Statistical analysis was performed with SPSS 22.0 .

RESULTS

Out of 566 infants included, 85.1% were term babies, 11,4% late preterm and 3,3% moderate preterm. The most frequent identified viruses were respiratory synciytial virus (RSV) followed by rhinovirus (RV), adenovirus, human metapneumovirus and parainfluenza in both groups (no statistical differences). Coinfections were detected in 30% of cases in moderate preterm, 14% in late preterm and 22% in term infants, most commonly between RSV and RV. Clinical characteristics of hospital episodes as fever, hypoxia, abnormal chest radiograph, antibiotic treatment or high flow oxygenotherapy and average length of hospital stay are detailed in table (no statistical differences between the 3 groups). We found no differences in severity of infections or need for intensive care unit admission, neither between preterm and term infants nor between RSV and RV infections.

CONCLUSIONS: The risk of respiratory admissions during the first 18 months of life, is 3,8 times higher in moderate preterm and 2,6 times higher in late preterm, compared to term infants. Once admitted, clinical features of respiratory episodes requiring hospitalisation and severity indicators are similar among moderate, late preterm and term infants. In our series, rhinovirus is the second virus associated with hospital admissions also in intensive care unit, and we think that special attention must be paid in this group.

KEY WORDS: late preterm, respiratory syncytial virus, rhinovirus, hospital admission

TABLES:
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ABSTRACT ID: 021

Does RBC Transfusion Promote The Extension of IVH

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INTRODUCTION: Introduction: Transfusion is a risk factor for some adverse effects on neonates .Some preterm infants may have a Grade 1 intraventricular hemorrhage (IVH) which can subsequently progress to a Grade 3 or 4 IVH .There are different studies to show the association of transfusion and IVH and its extension.

MATERIALS&METHODS: MATERIAL AND METHODS: We designed an observational retrospective analysis of all neonates which have grade 1 IVH at first ultra sound evaluation .They were born in Kamali hospital of Karaj during 2010 to 2014 , where is the referral hospital for high risk pregnancies in Alborz province of Iran.

Grade 1 IVH was identified in 350 neonates; 12 subsequently became a Grade 3, and 8 a Grade 4. These 20 were born with lower birth weight, 1285 ± 615 g versus 1361 ± 348 g ($p = 0.05$); earlier, 29 ± 3 weeks versus 30 ± 2 weeks ($p = 0.36$), and significantly lower cord pH, 7.29 ± 0.1 versus 7.37 ± 0.1 ($p = 0.005$). Administering a packed red blood cell transfusion up to and on the day the Grade 1 IVH was detected was the most significant contributor increasing the odds (OR, 10.602; 95% CI, 2.81-39.92) of extension. In both groups of resolving vs. extending of IVH, criteria for ordering transfusions were similar and we had not any proportion of transfusions given out of compliance with guidelines.

CONCLUSIONS: CONCLUSIONS: A great association exists between RBC transfusion and extension of a low Grade (1) IVH into a high Grade (3 or 4). However, the explanation is unclear and some widespread studies are needed to discover the casualty of this relationship between transfusion and extending of IVH .

KEY WORDS: Transfusion ,Neonate, IVH

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ABSTRACT ID: 023

Group B Streptococcal Infection: A Mission Accomplished?

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INTRODUCTION: Group B Streptococcal disease is one of the most common infections in the first week after birth. It is estimated that 25% of women carry this organism in the vaginal tract with no ill effect. Its significance is that it can be transmitted to the baby during delivery and is the most common cause of fatal bacterial infection in the early neonatal period. There are two ways in which the infection will present:

- 90% of the infections are early onset, and 70% of babies are symptomatic at birth;
- 10% are late onset, occurring after the first week and up to 3 months after birth.

In 2002, national guidelines recommended at 35-37 weeks' gestation a universal late antenatal screening of pregnant women for colonization with group B streptococcus to identify candidates for intrapartum chemoprophylaxis. The aims of this research are:

- rate the percentage of women who have given birth at term and performed universal screening through vagino-rectal swab;
- usefulness of the vagino-rectal swab in identifying colonized mothers;
- colonization rate in term babies;
- correlation between maternal vagino-rectal swabs and the outcomes of neonatal ear swabs.

MATERIALS&METHODS: It is a retrospective study that refers to the period between 1st January 2013 and 31st December 2014. The subjects of this research are: mothers who delivered at term in the Hospital of Foggia and babies born at ≥ 37 weeks' gestation. The vagino-rectal swabs are analyzed in blood culture medium Columbia CNA, after enrichment in liquid culture medium Todd Hewitt. The ear swabs are analyzed with real time PCR (polymerase chain reaction, amplification of bacterial DNA).

CONCLUSIONS: The results of this study are:

- low implementation rate of the screening test at the Hospital of Foggia: only 56,1% of women at term have performed universal screening through vagino-rectal swab;
- high rate of false negatives: in the 48% of cases to a positive result of neonatal ear swab does not correspond a positive maternal vagino-rectal swab;
- low sensitivity of the screening test: due to the high rate of false negatives, the ability of the test in detecting sick people it is very low (only 37%).

The introduction of universal screening to all pregnant women at 35-37 weeks of pregnancy has reduced the rate of neonatal GBS infection, but still persist a significant amount of false negatives. The future of prevention could consist of an experimental vaccine and PCR intrapartum. The PCR could be used also after the birth in order to avoid a intrapartum antibiotic prophylaxis (IAP) in negatives women and an antibiotic therapy in the newborn.

KEY WORDS: Group B streptococcus, antenatal screening, vagino-rectal swab, polymerase chain reaction

ABSTRACT ID: 027

Prevention Of Extrauterine Growth Restriction: A Parenteral Nutrition Intervention Study

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INTRODUCTION: Prevention of extrauterine growth restriction (EUGR) of preterm infants represents a challenge for neonatologists. EUGR has been associated with a worse auxological1, metabolical2, and neurological3 long term outcome. Improved feeding strategies are needed to promote growth.

Aim of this study was to evaluate whether an aggressive nutritional protocol could limit the postnatal growth restriction in a cohort of very low birth weight, preterm newborns.

MATERIALS&METHODS: We performed a prospective non randomized interventional cohort study. Auxological parameters (weight, length, and head circumference) were assessed in 25 very low birth weight infants with a gestational age <34 weeks, after the introduction of a set of nutritional changes.

50 very low birth weight infants matched for clinical features who had received nutrition according to the standard nutritional feeding strategy served as a historical control group.

Parenteral energy (first day of life 58 vs 40 kcal/kg, $p<0.001$; first week 110 vs 100 kcal/kg/day, $p<0.001$) and protein (first day of life 3 vs 2 g/kg, $p<0.001$; first week 4 vs 3.5 g/kg/day, $p<0.001$) intakes during the first 7 days of life were higher in the intervention group than in the historical group.

Results: The prevalence of EUGR for weight and length at the discharge was significantly lower in the intervention group as compared to the historical group (40% vs 70%, $p<0.01$; 2% vs 50%, $p<0.001$, respectively). No difference was found in the prevalence of EUGR for head circumference between the two groups. The negative changes in z-score from birth to discharge for weight was significantly lower in the intervention group compared with controls (1.1 vs 1.7, $p<0.02$) while no difference was found for z-score of length and head circumference.

Compared with historical group, the intervention group recovered birth weight in a lower number of days (10.3 vs 12.9 days, $p<0.04$) and showed a lower maximum weight loss (-8.7% vs -11.7%, $p<0.003$). No difference in the number of days used to reach an enteral nutrition of 100 mL/kg/day and in the number of days of CVC stay was found.

CONCLUSIONS: The use of an aggressive nutritional strategy beginning from the first hours of life and aimed to achieving a total enteral nutrition more quickly, reduces the postnatal growth retardation and improves auxological parameters at discharge in very low birth weight infants. In light of the previous data, the effects of this intervention could impact on both short-term and long-term outcome.

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KEY WORDS: extrauterine growth restriction, very low birth weight, preterm newborns, parenteral nutrition, outcome

ABSTRACT ID: 028

Respiratory Evolution in Moderate and Late Preterm Infants During Their First 18 Months of Life

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INTRODUCTION: Moderate and late preterm infants account for >70% of preterm births and they have higher respiratory morbidity in comparison with full-term born infants. Viral respiratory tract infections are the main cause for hospital admissions in all infants in their first 2 years. Our aim was to analyze respiratory viral infections in moderate and late preterm infants during their first 18 months of life and the development of recurrent wheezing.

MATERIALS&METHODS: A prospective study was conducted at Severo Ochoa Hospital (Leganés, Madrid, Spain), including all moderate and late preterm infants born from January 2013 to December 2014 (n: 202). Epidemiological and clinical data at birth and during neonatal period, such as antenatal corticosteroids, twinship, respiratory distress or mechanical ventilation were evaluated. They were followed up to 18 months in outpatient clinic, recording breastfeeding, bronchiolitis with or without hospital admission, food allergy, recurrent wheezing episodes and the use of long-term asthma controller medication (see table).

RESULTS: We found no difference between respiratory distress at birth, lung steroid maturation, breastfeeding, siblings, or day-care attendance and the incidence of bronchiolitis requiring hospitalisation or not. Smoking in parents increased the risk for hospital admission by 2,7 times. No increased risk for recurrent wheezing was found after hospital admission due to bronchiolitis or the associated virus.

CONCLUSIONS: Moderate and late preterm infants were at higher risk of respiratory illnesses and hospitalisation in infancy than term infants , and this risk may increase if factors like smoking parents are present. In our series, developing of recurrent wheezing was not more frequent after hospital admission due to bronchiolitis in their first 18 months of life.

KEY WORDS: moderate preterm, late preterm, respiratory infections, recurrent wheezing

TABLES:
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ABSTRACT ID: 030

Oxygenation During Non Invasive Ventilation Support In Preterm Infants: Comparison Between Two Interfaces, Short Nasal Prong Versus Nasopharyngeal Prongs

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INTRODUCTION: According to World Health Organization, about one every ten live births is preterm, defined as childbirth occurring at less than 37 completed weeks. Respiratory disease syndrome (RDS) affects 80% of those born with a gestational age less than 28 weeks gestation and it is an important cause of mortality and morbidity. Non invasive respiratory support with nasal CPAP is the first choice in RDS treatment. In preterm infants, nasal CPAP treatment has been demonstrated to be effective during the acute phase of RDS, during the post-extubation phase and for prevention of apnea of prematurity. However, the best performing interface for non-invasive respiratory support in preterm infants remains to be defined.

In this study, we aimed to compare the time spent in the normal saturation range and the need for supplemental oxygen with two different interfaces for non invasive ventilation (short nasal prongs and nasopharyngeal prongs) in preterm infants.

MATERIALS&METHODS: We enrolled preterm babies (EG<37 SG) requiring non invasive ventilatory support with nasal-CPAP or nasal-IMV after a period of invasive ventilation or after surfactant administration with INSURE technique within the first 28 days of life. We excluded infants with early onset sepsis, malformations of the upper airways or other major malformations.

The study design included two periods of 24 hour of non invasive respiratory support with two interfaces chosen randomly: short nasal prongs (Hudson®) and nasopharyngeal prongs (Vygon®). We used the patient as own control.

By using a computerized system, we continuously (48 hours) monitored the patient's oxygenation status during non invasive ventilation provided by means of a ventilator (Avea®) set with the automated control of inspired oxygen titrated in servo-controlled manner (CliO2TM) to maintain the SpO2 in a predetermined range (TcSaO2 90-95%). Primary outcome of the study was the time spent in the normal saturation range (TcSaO2 90-95%). Secondary outcomes were the time spent in hypoxia (TcSaO295%), the heart rate, the phases of tachycardia, the performance of the ventilator and the opinion of the nurse who was attending the patient.

CONCLUSIONS: The time spent in the normal saturation limit was 93.3% (+/-6,6%) and 96.8% (+/-3,9%) and FiO2 delivered during treatment was 0.23 (+/-0,03) and 0.22 +/-0,028) during treatment with short nasal prongs and nasopharyngeal prongs, respectively.

Nurses reported an easier placement and a better stability with nasopharyngeal prongs.

During non-invasive respiratory support of preterm infants, time spent in the desired saturation range was longer with the nasopharyngeal prongs compared to short nasal prongs. Although this difference was modest and of clinically limited relevance, the nasopharyngeal prongs seem to be a valid interface for the preterm patient requiring non invasive respiratory support. Nurses' satisfaction was significantly higher with nasopharyngeal prongs than with short nasal prongs. These short-term advantages need to be confirmed in larger clinical trials.

KEY WORDS: preterm, oxygenation, nasal-prongs, automatic FiO2 adjustment, Closed-loop FiO2 control

ABSTRACT ID: 033

Thromboelastography: a Valuable Tool for Transfusion Therapy in Neonatology

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INTRODUCTION: In neonates, transfusion therapy requires co-evaluation of many special factors. Hemostasis process is complex and still immature in the above mentioned population. It is well established that specific coagulation system disorders cannot be determined solely by common coagulation tests. Thromboelastography (TEG) has recently been evaluated as a potentially appropriate test to globally monitor individual patients' hemostatic system by measuring clot formation rate, strength, and firmness, as well as dissolution (fibrinolysis). TEG is a dynamic assay, based on the cell model of coagulation. A small amount (1ml) of whole blood is required for the test.

Aim: The aim of this study was to assess the role of TEG in therapeutic management of neonates with hemorrhagic diathesis.

MATERIALS&METHODS: Methods: We recorded FFP transfusions in our hospital NICU for the period between 2011 and 2015 (Table).

During 2011-2013, common practice in our clinic was to transfuse with FFP all neonates with clinical or laboratory findings of septicemia-DIC (48-57 neonates per year), mainly based on the conventional coagulation tests and clinical judgment of the department's physicians.Twenty eight-thirty eight of these neonates underwent transfusion per year.

From June 2014 to June 2015, management of neonates with hemorrhagic diathesis was determined by TEG parameters and clinical picture, thus providing the Blood Transfusion department of our hospital with adequate time to produce pediatric blood units. During this period of time, 55 neonates at high risk of hemorrhagic diathesis (for example, neonates of GA< 27 wks, septic, or thrombocytopenic neonates) were evaluated. Only 13 of these 55 neonates developed disorders of TEG parameters and were subsequently transfused. None of the remaining neonates presented massive hemorrhage or other complications (cerebral or pulmonary hemorrhage). During the first semester of 2015, only 5 neonates were transfused with FFP. Blood Transfusion department recorded 40 transfusions, however; only 19 adult sacs were used, decreasing our neonates' exposure to multiple donors.

CONCLUSIONS: Conclusion: The most efficient way to limit transfusion reactions is by reducing unnecessary transfusions. TEG could help establish algorithms for blood products therapeutic transfusions. Since it is a specific test, TEG might be useful in reducing inappropriate FFP transfusions.

KEY WORDS: transfusion, thromboelastography, blood products, neonates

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ABSTRACT ID: 036

The Development of Neonates With Bronchopulmonary Dysplasia: Long-Term Impact of Bronchopulmonary Dysplasia on Pulmonary Function

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INTRODUCTION: Background: Bronchopulmonary dysplasia (BPD) is still the most frequent complication of VLBW neonates. BPD causes growth retardation and long-term respiratory morbidity. Prolonged use of nasal CPAP in neonates with BPD – until postmenstrual age (PMA) of 32-34 weeks or withdrawal from oxygen – has been found to be beneficial. The clinical stability achieved by this policy, helps promote feeding and growth. Objective : To assess whether the prolonged use of nasal CPAP in neonates with BPD influences growth and development and eventually has a long term impact on the respiratory system of these neonates.

MATERIALS&METHODS: Materials and Methods: In a prospective observational study, 35 very preterm neonates with BPD [birth weight (BW) = 980g (SD 174), gestational age (GA) = 27 weeks (SD 1.5) and head circumference (HC) = 25cm (SD 2.37)], who were hospitalized in our NICU over the period 2007-2009 and remained on nasal CPAP for 11 to 60 days after their first week of life, were included in group A. They were compared with group B, which included 32 infants without BPD [BW = 1350g (SD 291), GA = 30 weeks (SD 1.4) and HC = 27.4cm (SD 1.8)], hospitalized in our NICU during the same period of time. The same feeding policy was applied to all neonates. We mainly recorded: PMA, body weight and HC, on the day of discharge from our department and lower respiratory tract infections and hospital admissions at the age of a) 0-2 years of life and b) 2-5 years. Results 1) The neonates without BPD were older and larger at birth [PMA ($p<0.0001$), BW ($p<0.0001$) and HC ($p<0.0001$)]. The neonates with BPD and prolonged use of nasal CPAP, presented equal or better growth when compared with the neonates in group B on discharge [PMA=36 weeks (SD 1.54) ($p=0.330$), body weight=2500g (SD 622) ($p=0.999$) and HC =33.2cm (SD 1.32) ($p=0.0003$)]. 2)
No statistically significant difference was noted between group A and group B, either in lower respiratory tract infections or in hospitalizations, during the two periods of time tested.

CONCLUSIONS: Conclusions: Our results indicate that the improvement of development and the catch-up growth up to 40 weeks of our very preterm infants with BPD, had a positive effect on the consequences of the disease, as these were observed so far.

KEY WORDS: BPD, NEONATES, DEVELOPMENT,NCPAP

ABSTRACT ID: 037

Does Circumcision Increase Neonatal Thyroid -Stimulating Hormone Level?

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INTRODUCTION: Generally it is accepted that excessive iodine exposure during the neonatal period may lead to neonatal hypothyroidism. Our observation of high incidence of transient thyroid dysfunction in newborns, who had newborn circumcision, led us to investigate the possible correlation with povidone application before the procedure and elevated thyroid-stimulating hormone (TSH). In this study our aim was to evaluate the effects of the exposure of local iodine and increase in blood thyroid-stimulating hormone levels in newborns following circumcision.

MATERIALS&METHODS: The files of healthy, term, newborn babies, who had neonatal circumcision done by the same pediatric surgeon using the same technique from October 2014 to October 2015, were analyzed, retrospectively. Their neonatal TSH level testing times were recorded, and they were grouped into two: The babies who had tests before circumcision were Group 1, and the ones who had TSH tests after the circumcision were Group 2. Circumcision date, gestational age, birth weight, neonatal thyroid-stimulating hormone and free thyroxin levels of the two groups of babies were recorded and compared.

254 healthy, term, newborn babies were circumcised by the same pediatric surgeon, using the Gomco Clamp technique. The TSH levels of 100 babies were tested before the circumcision, and the tests were done 6-24 hours after the circumcision in 154 babies. There was no significant difference between the two groups in circumcision date, gestational age, birth weight, neonatal thyroid-stimulating hormone and free thyroxin levels.

CONCLUSIONS: In experienced hands, newborn circumcision on first days of life does not affect babies' neonatal thyroid-stimulating hormone and free thyroxin levels.

KEY WORDS: circumcision, newborn, thyroid-stimulating hormone

ABSTRACT ID: 038

Does Fat Oil Based Fat Emulsions Have Any Affect on Preterm Babies' Morbidities Which Depend on Oxidative Stress?

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INTRODUCTION: Very low birth weight babies' (VLBW:Birth weight of less than 1500 g) full enteral feedings are generally delayed because of the severity of medical problems associated with prematurity. For these babies usually parenteral feeding can be the only option until fully enteral feeding is possible. Intravenous lipid prevents essential fatty acid deficiency, provides needed energy for tissue healing and growth. Fish oil-based fat emulsions are proposed to reduce hepatic triglyceride synthesis and inflammation.

MATERIALS&METHODS: Forty four VLBW babies enrolled our study. There were 28 babies in Smoflipid group and 16 babies were in Clinoleic group. Lipid emulsions started on after first 24 hours of postnatal age and 18 hours infused to the baby. The blood sample for serum triglyceride level was taken after 6 hours of stopped the fat emulsion infusion. Babies followed up until discharging of the hospital and noted for the morbidities.

There were no statically difference in birth weights, gestational ages, mechanical ventilation duration, broncopulmonary dysplasia (BPD), time of full enteral feeding, sepsis and patent ductus arteriozus between two groups. Serum triglyceride level of study group was lower than the control group.

CONCLUSIONS: Most neonatologists monitor serum triglyceride to measure fat emulsions tolerability with a target value of less than 200 mg/dL (2.7 mmol/L). In our study despite of there is no difference between two groups' other results, the triglyceride level of study group was lower than control group.

KEY WORDS: Very low birth weight baby, fish oil based fat emulsion, serum triglyceride level

ABSTRACT ID: 040

Adrenal Gland Hemorrhage in Neonates

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INTRODUCTION: Adrenal gland hemorrhage is the most common adrenal mass in neonate, and more common in this age group, than in older children. Traumatic etiology is usually result of difficult or prolonged labor, especially in macrosomic newborns. Nontraumatic etiology include asphyxia, hypoxia, septicemia or some hemorrhagic disorder. Significantly less frequent, bilateral hemorrhage is very serious, life-treatening state Unilateral adrenal hemorrhage is usually asymptomatic or followed by mild, non-specific symptoms (anemia, hyperbilirubinemia), and very often may be discovered accidentally, during ultrasaund examination performed for other reasons.

MATERIALS&METHODS: Study included thirty two term neonates, with unilateral adrenal hemorrhage, discovered by ultrasound between 3rd and 5th day after birth. Clinical examination daily and abdominal ultrasound, in 3-days intervals till 10th day and in 7-days intervals till the end of 1st month of life, were practiced. Laboratory testing included: total blood count, glicemia, bilirubin and electrolytes in serum.

CONCLUSIONS: All examined neonates had unilateral, in more than half babies right-sided adrenal hemorrhage. Initially, ultrasound showed homogenous echogenic, thereafter, heteroechogenic mass, of variable size. Adrenal insufficiency did not occur. One third of babies had moderate anemia. Hypoglicemia, hyperbilirubinemia and electrolyte disturbances, probably were a part of asphyctic or infective syndrome. Almost in all newborns, serial ultrasound scans revealed complete regression of hemathoma during 3-5 weeks, while in one baby with progression of ultrasound finding, MRI scan and additional laboratory testing confirmed the diagnosis of neuroblastoma. Ultrasound is the method of choice in diagnosis and monitoring of evolution of neonatal adrenal hemorrhage. Unusual evolution can indicate further metods for differential diagnosis towards other disorders presenting as adrenal masses.

KEY WORDS: neonate, adrenal gland, hemorrhage

ABSTRACT ID: 043

Enterobacter Aerogenes Outbreak in a Neonatal Intensive Care Unit and Preventive Measures

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INTRODUCTION: Health care–associated infections in the neonatal intensive care units (NICU) are a significant cause of neonatal morbidity and mortality. Enterobacter aerogenes, a gram-negative bacterium, rarely causes health care–associated infections in the pediatric and neonatal intensive care units. We reported successful prevention measures to be taken during the outbreak of health care-associated Enterobacter aerogenes infections in our Level III NICU and clinical features of the infected infants during the outbreak.

MATERIALS&METHODS: A retrospective study was conducted in the NICU of Etlik Zubeyde Hanım Teaching and Research Hospital. The infants with blood cultures positive for Enterobacter aerogenes during outbreak were enrolled. Perinatal risk factors, laboratory findings, symptoms, treatment, and prognosis were recorded. Clinical applications and prevention measures were identified.

The initial case of the reported outbreak of health care-associated Enterobacter aerogenes infections was the three days old preterm infant with gestational age of 27 weeks. Subsequently, 12 more neonates were diagnosed in the next five months. Infants' mean gestational age was 27.1±2.3 weeks, and mean birthweight was 902±161 g. The clinical symptoms at presentation were respiratory distress, sclerema, circulatory failure, and shock which appeared at a mean age of 7.6±5.8 days. Analysis of Enterobacter aerogenes strains revealed that all strains were the same clonal type. Eight patients died in follow-up due to Enterobacter aerogenes septicemia during this outbreak. The mean interval between onset of symptoms and death was 1.5±1 days. The organism was traced to the temperature probes in the NICU.

CONCLUSIONS: The outbreaks of health care-associated Enterobacter aerogenes infection result in high mortality rate among low birthweight infants. Awareness of adjustable risk factors and preventive measures to control to the outbreak decrease both morbidity and mortality.

KEY WORDS: Enterobacter aerogenes, neonate, outcome

ABSTRACT ID: 045

Study of Neonatal Mortality in a Tertiary Level Neonatal Unitin Tunisia.Challenges of Neonatal Reanimation in a Developing Country

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INTRODUCTION: The Maternity and neonatal care center of Tunis (Le Centre de Maternité et de Néonatologie de Tunis: CMNT) is a tertiary care center.

This maternity counts more than 15000 births a tear. This birth rate is elevated due to the fact that it is the largest of three level 3 maternities in Tunis.

It accounts for many in utero transfers. These come mainly from Tunis but also from all over Tunisia from north to South.

The number of births is unceasingly growing and the neonates are smaller in Gestational Age and sicker. They frequently have antenatal diagnosis of severe illnesses.

Our objective in this study is to determine the disease pattern and causes of neonatal mortality in a third neonatal care during a year in a developing country, Tunisia.

MATERIALS&METHODS: Materials and methods: This study is retrospective, it concerned all neonatal deaths that occurred in the neonatal care unit during the year 2014: (01/01/2014 till 31/12/2014). The neonates were born during the same year beginning from the 1st of January and the last death we considered was on the 31st of December. Were excuded from this study the still births and the births less than 22GW.

Results: During the year 2014, there were 15 045 live births. Among these births, 2 819 sick neonates were admitted to the level 3 neonatal care unit.

Mortality was of 24, 69% (696 neonates died).

Premature neonates admitted in our unit represent 47, 6% of all admitted neonates.

The mortality based on the gestational age reveals a mortality rate of 93, 4% within the neonates born before 28GW (were concerned in this rate the pregnancy terminations for medical reasons with the birth of a live neonate, the extremely premature neonates and the neonates for whom DNR attitude was decided), this rate falls to 58, 1% for preterm neonates of gestational age comprised between 28GW and 32GW and to 24, 9% for those between 32GW and 34GW.

Severe sepsis was the main cause of death (56, 2%), followed by respiratory illnesses (22.4%) and severe neonatal malformations in 14, 2% of the deaths.

Early neonatal mortality accounted for 43, 1% of all deaths.

CONCLUSIONS: Conclusion: Efforts have to be done to lessen the mortality in our intensive care unit.

This could be achieved by actions to reduce the rate of acquired infections during hospitalization. Nevertheless, our working conditions are such that the daily practice is extremely challenging.

A political attitude managing the intrauterine transfers to the different referral units and the creation of more level 2 and level 3 neonatal care units is indispensible for a better practice of neonatal reanimation in better conditions in our unit.

KEY WORDS: neonatal mortality, neonate, developing country, prematurity, sepsis, acquired infection

ABSTRACT ID: 046

Cystatine C And Beta-Trace Protein As Markers Of Renal Function In Preterm Newborns

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INTRODUCTION: It is known that nephrogenesis is active until 36 weeks' gestation and preterm birth may results in a loss of total nephron number. Preterm newborns present important challenges regarding the assessment of renal function and little is known about potential endogenous biomarkers other than creatinine, such as cystatine C (CysC) and beta-trace protein (BTP).

Aim of the study was to compare creatinine, CysC and BTP levels in extremely and very preterm newborns.

MATERIALS&METHODS: In the period September 2015 – April 2016 blood samples were obtained on the third day of life from newborns with gestational age (GA) <32 weeks, and creatinine, CysC and BTP levels were measured. Renal ultrasounds were performed to assess kidney dimensions with calculation of the kidney volume, as a surrogate of nephron mass, by the equation for an ellipsoid: volume = length x width x depth x π/6. Total kidney volume (TKV) was calculated by the sum of left and right kidney volumes. Weight and length were measured and body surface area (BSA) was calculated.

CONCLUSIONS: Twenty-nine newborns were enrolled (M:F=15/14; mean GA 27+1, range 25+2 – 31+5). Mean creatinine level was 0.92±0.27 mg/dl, mean CysC level was 1.66±0.33 mg/l and mean BTP level was 1.509±0.334 mg/L. No differences were found for creatinine, CysC and BTP according to gender. Creatinine was negatively correlated with GA (R= -0.410, p=0.02) and positively correlated with TKV (R=0.515, p=0.006). Both CysC and BTP were independent of GA, weight, length, BSA and TKV. Positive correlations were found between creatinine and CysC (R=0.672, p=0.001), creatinine and BTP (R=0.627, p=0.002) and between CysC and BTP (R=0.826, p<0.0001), also when adjusted for GA, weight, length and BSA.

In preterm newborns <32 weeks' gestation CysC and BTP seem to be markers of renal function independently of GA, gender and anthropometric measures.

KEY WORDS: kidney - preterm - creatinine - cystatine C - beta-trace

ABSTRACT ID: 047

Early Instrumental Predictors of Long Term Neurodevelopmental Impairment In Newborns With Perinatal Asphyxia Treated With Therapeutic Hypothermia

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INTRODUCTION: Hypoxic-ischemic encefalopathy following perinatal asphyxia is one of the main causes of neurologic disability in full-term newborns. Hypothermia is known to be a safe and effective neuroprotective therapy for neonatal hypoxic-ischemic encephalopathy. However, long term consequences of perinatal asphyxia are not easily predictable. We aimed to assess the potential role of EGG and neuroimaging parameters as early predictors of neurodevelopmental outcome at 18-24 months in newborns undergone hypothermia.

MATERIALS&METHODS: We retrospectively evaluated all the patients treated with hypothermia in our NICU in the period January 2012-September 2014. We reviewed their amplitude-integrated electroencephalography (a-EEG) at 6, 12 and 24 hours, cranial ultrasonography (US) at 12, 72 hours and >7 days of life (DOL) and cerebral magnetic resonance (MR) performed at 7-28 DOL, according to validated scores. Instrumental anomalies were correlated to neurodevelopmental outcome at 18-24 months, considered as negative if one of the following was present: pathological Bayley score, motor, visual or auditive deficit.

CONCLUSIONS: Severe anomalies at 6-12-24 hours aEEG were more frequent in subjects with negative neurodevelopmental outcome. The severity of US and MR scores at each time point was not different according to the outcomes. Bayley score was negatively correlated with aEEG score at 12 hours (R= -0.571, p=0.04) and with US score at 72 hours (R= -0,630, p=0.02). A positive correlation was found between aEEG score at 6 hours and US score at >7 DOL (R=0.690. P=0.013).

Early instrumental evaluations, in particular aEEG, seem to be efficient predictors of neurodevelopmental outcome at 18-24 months following therapeutic hypothermia.

KEY WORDS: asphyxia - hypothermia - newborn - electroencephalography - neurodevelopmental outcome

ABSTRACT ID: 050

Hemodynamic Effects of Larger Volume (20 Ml/Kg) of Red Blood Cell Transfusion on Cardiac Functions and Plasma BNP Levels in Preterm Infants With Anemia of Prematurity

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INTRODUCTION: Red blood cell (RBC) transfusion volumes of 10 mL/kg to 20 mL/kg have been conventional to treat anemia of prematurity. However, not much is known on the optimal transfusion volume for critically ill preterm infants.

Several studies suggest that larger transfusion (20 mL/kg) volumes may reduce the need for frequent RBC transfusions, although these trials were generally failed to report on the clinically important neonatal outcomes, including mortality or neurodevelopmental outcomes.

But larger transfusion raises concerns about possible effects on volume overload following in critically ill preterm infant at risk of hemodynamic instability. Transfusion-associated circulatory overload (TACO) is caused by the inability of the circulatory system to handle an increased blood volume and manifests as dyspnea, rapid increased blood pressure and pulmonary edema. Little is known about the hemodynamic effects of different transfusion volumes in preterm infants.

In order to determine the hemodynamic effects of transfusion, we compare the effects of different RBC transfusion volumes (15 mL/kg or 20 mL/kg) on echocardiographic parameters and plasma B-type natriuretic peptide (BNP) level in preterm infants with anemia of prematurity.

MATERIALS&METHODS: Methods:

This observational study was conducted in the NICU at Korea University Ansan Hospital from January 2013 to December 2015. We randomized 39 infants presenting anemia of prematurity with a stable clinical condition into two groups, standard volume group receiving 15 mL/kg of RBC transfusion (n=20) and larger volume group receiving 20 mL/kg of transfusion (n=19) in 3 hours. Monitoring of vital signs, echocardiographic examination for cardiac function and measurement of plasma BNP level were done before the transfusion, immediately after the transfusion and at 24 hours after the initiation of transfusion.

Results:

There was no case presenting TACO based on clinical manifestations among enrolled infants.

Significantly increased blood pressure and decreased heart rate were presented immediately after the transfusion, then recovered at 24 hours after RBC transfusion. Left ventricular end diastolic dimension, the representative of preload, and cardiac contractility remained unaltered in two groups during study period.

Although there was no significant change in cardiac output in standard volume group, there was a significant decrease in left ventricular output and right ventricular output immediately and at 24 hour after the transfusion in larger volume group.

There was significant increase on the plasma BNP level in two groups immediately after the transfusion, then it recovered at 24 hours after the transfusion. The proportion of infant with plasma BNP >100 pg/mL in larger volume group is significantly higher than that in standard volume group immediately after the transfusion (41.2 % vs 10.0%, $p = 0.027$).

CONCLUSIONS: RBC transfusion for anemia of prematurity resulted in decreased cardiac output, without preload responsiveness or effect on cardiac contractility after the RBC transfusion in preterm infants.

But the changes of blood pressure, cardiac output and plasma BNP level in larger volume group were more significant than those in standard volume group, especially immediately after transfusion period.

We speculate that a larger volume (20 mL/kg) of RBC for anemia of prematurity has to be monitored cautiously related to TACO, especially in critically ill preterm infant with the risk of hemodynamic instability.

KEY WORDS: Hemodynamic Effects, Red blood cell, Transfusion, Cardiac Function, Plasma B-type natriuretic peptide, Preterm Infant, Anemia of Prematurity.

ABSTRACT ID: 052

Comparison of Transcutaneous and Serum Bilirubin Level in Term Newborns

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INTRODUCTION: Neonatal hiperbillirubinemia is one of the most common potentially pathological occurences in newborns. The non-invasive method for mesuring the concentration of billirubin such as transcutaneous billirubin measurement /TCB/, has a great significance in reduction of the unnecessary traumatization of the newborns by repeated venipuncture in order to obtain blood for the analysis, medical expenses and hospitalization. Analyse diagnostic TCB values in healthy full term newborns based on the following parameters: the co-relation of the TCB coefficient and standard biochemical analysis (diazo method) /SBR/; the level of sensitivity and the specifity of the appliance on the cut-off values; both positive and negative predictive values of the TCB; the level of TCB's efficiency; the high percentage of cutting down on the unnecessary venipunctures.

MATERIALS&METHODS: Sixty-six healthy, full term newborns were taken in for the prospective study. A yellowing of the skin was registered in all of these infants. By using both TCB and SBR methods, the level of billirubin on the second and on the third day was measured and compared. Transcutaneous billirubinometer BILITEST M 2000, by Technomedica was used for measurement.

CONCLUSIONS: Transcutaneous billirubin measurment has higher coefficient of co-relation than SBR on the second and third day of life (= 0,758, p215 mol/L, the number of newborns whose blood is taken for the analyses would be reduced for 64,39%. The transcutaneous billirubin measurement is highly effective in healthy full term newborns. This method can be recommened as extremely useful for screaning of the clinically significant jaundice in newborns.

KEY WORDS: neonatal hyperbilirubinemia, transcutaneous billirubinometry, diagnostic value

ABSTRACT ID: 056

Long Term Follow-Up of Infants With Very Low Birth Weight or Born at Less Than 32 Weeks Gestation

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INTRODUCTION: Advances in neonatal care has increased the survival of moderate preterm and very-low-birth-weight (VLBW) neonates, who are at risk of postnatal complications. Follow-up data is essential. This study provides follow-up data on a population of VLBW infants or born less than 32 weeks gestation, during their first 8 years of life.

MATERIALS&METHODS: We performed an observational study in a cohort of 291 VLBW neonates or <32 weeks gestation attended from 2005 to 2011 at Severo Ochoa Hospital (Spain), followed up until today, by reviewing their medical records. Perinatal comorbidities, growth pattern and developmental outcomes were assessed at birth, 2, 5 and 8 years of life.

RESULTS

Out of 291 infants included, 21.3% had a gestational age (GA) <28 weeks, 58.4% between 28 and 31 weeks and 20.2% ≥ 32 weeks. The mean birthweight was 1.275gm ± 384 gm with range between 518gm and 2.330 gm. 21.6% (63) were extremely low birth weight neonates (< 1.000gm).

Noteworthly, 20.1% (49) of neonates had weight for age z-score -2SD at Hospital discharge.

Only 27 (9,3%) infants died. 70% of all infants completed its follow-up until the age of 2, 44% until 5 and finally 14% until 8.

The mean age at the Neonatal Unit discharge was 49.5 ± 24 days, median 43 and range 14-120 days. Hospital discharge usually coincides with 38 weeks of corrected age and 2000gm of weight approximately (media 2294gr ±478; median 2180gm with range 1119-5100). 82.8% of preterm breastfed during admission.

Worthy of consideration is that only 14 (7.4%) of the 187 children who completed follow-up to 2 years old had a weight percentile below -2 SD. 92.6% had reached normal weight percentiles, with no differences between birthweight.

At the age of 5, 98% of those who continued follow-up had their nutritional development normalized and only 2 persisted with weight percentile below -2 DS. These two children had a history of intrauterine growth restriction and they were treated with growth hormone. Nowadays, all children followed-up to 8 years old have normal weight percentiles.

Nutrition index (Waterlow Score (WS) and Body Mass Index (BMI)) gradually improved after discharge, and we did not find significant levels of malnutrition in these premature infants when they reach the age of 2, 5 and 8 years old. At 2 years old, 67.6% had optimal nutritional status according to WS; 7.4% (14) moderate malnutrition and 25% (47) mild malnutrition. At 5 years old, 84.1% had adequate nutritional status, 14.9% (28) mild malnutrition and only 1% (2) moderate malnutrition remains less IW 80%.

Finally referring to neurodevelopment, 130 (45%) children were assessed by the Early Intervention Team, obtaining the Developmental Quotient (DQ) according to the scale of psychomotor development of Brunet Lézine in 85 of them at the age of 2. The DQ mean was 92+12,3SD (median 94 and range 59-120). The lowest values were recorded in the field of language and visual-motor coordination.

5.5% of all children follow-up to age of 5 required special educational needs and 11% need support (integration) during schooling. 26 children (16%) with mild learning disability, were detected during follow-up. The most frequent were expressive language disorders by 30%.

Ophthalmologic evaluation at 2 years old was done, and no case of blindness was observed, only was detected refractive errors (6,6%) and strabismus (6%). Bilateral sensorineural hearing loss was observed only in 6 cases (2.1%), needing hearing aid.

Three children were diagnosed with cerebral palsy (two tetraparesia form and one ataxic) and other had a chromosomal abnormality of chromosome 18 (q21.3) with severe psychomotor retardation.

CONCLUSIONS: Being born VLBW or less than 32 weeks gestation is associated with long and short term risks, hence the importance of follow-up programs like ours for early detection and management of problems associated with prematurity.

The main consequences are those related to weight gain, objectifying that most infants are discharged with weight below the 10th percentile for corrected age. However, this growth pattern is normalized at 2 years by 92%, with no differences to birth weight. We have not found significant levels of malnutrition. The neurodevelopmental outcome of most infants followed-up was within the normal range, being the most common disorders expressive language, with a low incidence of cerebral palsy.

KEY WORDS: follow-up, very-low-birth-weight, less than 32 weeks gestation

TABLES:
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ABSTRACT ID: 057

Bronchopulmonary Dysplasia and its Long Term Morbidity in Preterms

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INTRODUCTION: Bronchopulmonary displasia (BPD) is a chronic lung disease related to prematurity. It is known that these patients may develop asthma by school-age. Our aim is to describe perinatal characteristics and risk factors of neonates diagnosed with BPD and the possibility of developing altered lung function testing by school-age.

MATERIALS&METHODS: Retrospective study including neonates below 1500 grams and/or 32 weeks gestational age (WGA) born in the period 2005-2011 in our hospital. We analysed perinatal data (antenatal corticosteroids, antibiotics, chorioamnionitis, resucitation at birth, surfactant therapy, respiratory assistance during admission, concomitant diseases) and evaluated lung function (forced spirometry and bronchodilator test) by the age of five. Statistical analysis was performed with SPSS 21.0 .

We include 283 newborns <32 WGA/or < 1500 g, 54.8% were females. Average WGA 28-30 (25-32) and weight at birth 1266 g (518-2330). 47 out of 283 newborns (16.6%) were diagnosed with BPD (mild 51%, moderate 29%, severe 19%).

Comparing BPD patients vs non-BPD:

- There was no statistical difference attending to antenatal data. Chorioamnionitis was found in 6.4% (vs 7.7%), antibiotics in 38.3% (vs 38.4%), corticosteroids 65% (vs 70%).

- There was no difference in type of delivery (vaginal: 27.6% vs 32%, caesarean 70.2% vs 65.2%, instrumental 0% vs 0.8%).

- Neonates diagnosed with BDP had lower weight at birth (917 g vs 1337 g, p<0.001), and needed more frequently mechanical ventilation at delivery room (63.8% vs 24.1%, p<0.001).

- During first 24 hours of admission, BPD neonates needed more respiratory assistance compared with non-BPD (not required: 0% vs 18.2%, non invasive: 12% vs 38.5%, invasive 87% vs 39.8%). Yet, at the same time, surfactant therapy was needed more frequently in BPD tan in non-BPD during first 24 hours of life (not required 19% vs 53%, 1st hour of life 42% vs 16%, first 6 hours 36% vs 14%).

- Concomitant diseases were found more frequently in BPD: confirmed nosocomial sepsis (27.6% vs 8.8%), patent ductus (PDA) needing treatment (70.2%, 24%).

- Duration of respiratory assistance during admission (hours): CPAP (414 vs 66, p< 0.001), mechanical ventilation (137 vs 21, p< 0.001), oxygen 1284 vs 123 (p<0.001)

Patients followed-up by neumologist

- 31,6 % of patients followed-up had an altered pulmonary function study. 33,3% in BPD patients vs 28,6 in non-BPD (NS).

- 21 % with an obstructive pattern and 26,3 % with a positive bronchodilator test. There was no differences in BPD and non BPD patients.

- 76,6% of DBP patients followed-up also by cardiologist, 4 of them (11,1%) with pulmonary hypertension criteria and altered pulmonary study.

CONCLUSIONS: Bronchopulmonary dysplasia is a chronic disease more frequent in lower weigth patients, neonates who require respiratory assistance and concomitant diseases like PDA, sepsis,…

Many of them will develop pulmonary hypertension and impaired lung function at the age of 5 years.

KEY WORDS: bronchopulmonary dysplasia, preterm, lung function, long term morbidity

TABLES:
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ABSTRACT ID: 058

Holoprosencephaly Associated at Trisomy 13

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INTRODUCTION: Holoprosencephaly (HPE) is a rare brain abnormality resulting from an incomplete cleavageof the primitive prosencephalon of forebrain during early embryogenesis. It includes aseries of rare complex and heterogenosis disorders. Alobar form is associated with an extremelypoor fetal prognosis.

The HPE is characterized by great etiological heterogeneity dominated by genetic factors and by the effect of environmental agents. The genetic etiopathogenesis of HPE is widely accepted and is dominated by abnormalities of chromosome 13 whose frequency varies between 24 and 45%.

MATERIALS&METHODS: We report two cases of holoprosencephaly diagnosed at the third trimester of pregnancy associated at Patau syndrome (trisomy 13). Clinical features and prognosis of Trisomy 13 are described referring to literature.

Case Report :

Case 1:

Mrs S, 34 years old, 4th parity, without significant medical history, appeared at 32 weeks of amenorrhea (WA) for prenatal care. Somatic and obstetrical examination were normal while obstetrical ultrasound control showed intra uterine growth restriction (IUGR) and signs of alobar form of HPE.The magnetic resonance imaging (MRI) of the brain confirmed the diagnosis of alobar form HPE with bilateral microphthalmia and coloboma cysts.We eliminated gestational diabetes and a toxoplasmosis and rubella infection. Therapeutic abortion has been proposed but was refused by the couple. The new born was delivered at term with a birth weight of 2000g. The physical examination founded facial abnormalities with microcephaly and bilateral microphtalmia, agenesis of the thumb,abnormal sexual differentiation and anal atresia. Sonographic exploration confirmed the HPE and showed polycystic kidney disease. The Karyotype confirmed the diagnosis of T13 by showing the formula of 46,XY,r(13). The infant was dead after 20 days.

Case 2:

Mrs H, 39 years old, 7th parity, with a first degree consanguineous marriage. She has no significant medical history. An obstetrical ultrasound was performed at 30WA showing a semi-lobar form of HPE associated at anophtalmia, polycystic kidney disease and short femur. Therapeutic abortion was also refused and the new born was delivered at 33week of gestation with a birth asphyxia leading to death within few minutes. The diagnosis of Patau syndrome was therefore confirmed after deathby a Karyotype.

CONCLUSIONS: Fetuses with trisomies 13 have a very poor outcome especially when combined with a HPE. It would be extremely helpful to recognize this diagnosis antenatally so that prenatal testing by amniocentesis or percutaneous umbilical blood sampling could be carried out to confirm the diagnosis cytogenetically.

KEY WORDS: Patau syndrome, Holoprosencephaly, Antenatal ultrasound, cytogenetic

FIGURES:
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ABSTRACT ID: 060

Outbreak of Stenotrophomonasmaltophilia, in a Tunisian Third Level Neonatalcare Unit

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INTRODUCTION: Stenotrophomonas maltophilia (SM), a multi-drug resistant gram negative bacillus is an increasingly common nosocomial pathogen.

It is considered as environment bacteria; nevertheless, its sources and reservoirs are often not readily apparent.

Few are the cases of S. Maltophilia infection that have been reported in neonatal populations.

Few are the cases of S. Maltophilia infection that have been reported in neonatal populations.

About 15000 neonates are born each year in the Center of Maternity and Neonatal care unit in Tunis (CMNT) , 2500 neonates, mostly premature and having a very low birth weight are admitted in to the 3rd level neonatal care unit.

An outbreak of Stenotrophomonas Maltophilia infection took place in this unit.

MATERIALS&METHODS: Study design: The study is retrospective and descriptive.

Place and duration: In a three month period (01/01/2014 till the 31st of Mars 2014),15 cases of new born neonates admitted in the 3rd level neonatal intensive care unit were isolated with Stenotrophomonas Maltophilia infection. Our study's objective is to report this fact and describe all its features (Situation, clinical, microbiological and epidemiological) and describe the measures that took place to manage this outbreak. All features were taken from the medical files and from the reports of the inquiry that took place on the onset of the outbreak.

RESULTS:

During the Stenotrophomonas Maltophilia infection outbreak in the neonatal care unit of the CMNT,15 neonates (4 girls and eleven boys) were diagnosed with this infection ; their average Gestational age was 33 GW+5 days ; their average weight was 2,2 kg with extremes varying between 1200gr to 4100g ; 2 neonates were born through vaginal delivery where as the 13 others were born by cesarean section. Infectious anamnesis was present in 7 cases; 13 patients were admitted for respiratory distress, CRP was initially negative in 11 cases where as blood count was pathological in 9 cases with low platelet count and/or leucopenia ; an initial antibiotherapy was given based on cefotaxime and gentamicine; the clinical evolution of all studied neonates was similar. It mainly expressed as a clinical deterioration: hemodynamic trouble (8 neonates), respiratory aggravation occurring between day 2 and day 4 of age, convulsions (2 neonates), digestive signs : vomiting and abdominal swelling (2 patients)

; Blood cultures were done the first and third day of life. Some came positive to a multi-resistant Stenotrophomonas Maltophilia at day 1 (2) and others at day 3 of birth(13). Clinical findings and the aggravation of biological findings les to the change in antibiotic treatment of all studied neonates. The antibiotics used were chosen on the basis that the acquired infections in our unit correspond often to Klebsiella Pneumoniae or Acinetobacter. Therefor imipeneme and ofloxacine and colistine were used. The issue was fatal for 9 neonates. Once the outbreak was notice, an emergency reunion with members of the surveillance of Hospital acquired infections took place. The members present in this reunion represented the hospital hygiene unit, the laboratory, and our unit. We here point out that the hospital does not have a bacteriology lab, the blood cultures are done in another hospital and direct studies of gastric samples are not done for this reason. An inquiry took place, we could not determine if the all bacteria involved came from the same stem but they all had the exact same sensitivities and/or resistance to antibiotics.

Bacteriological research by the hygiene unit took place in all 3 obstetrical units, the delivery room and the neonatal care unit. Samples were taken from water points, floor, patients's beds, incubators ,scales used to weigh neonates in the delivery room, directly from the hands of nurses and doctors Stenotrophomonas was found on the delivery room scales. Two weeks of hygiene measures took place all over the hospital, decontamination of rooms and the change of scales took place. Several reunions took place with medical and paramedical staff to insist upon hygiene rules, especially hand washing and the use of hydro alcoholic solutions. During a period of 6 months, no infection by Stenotrophomonas Maltophilia was noticed. And since, there has not been a new outbreak concerning this bacteria.

CONCLUSIONS: Today, Stenotrophomonas Maltophilia is being isolated more and more frequently as a health care associated infection and it can lead to major problems especially in neonates.

The respect of hygiene rules, the collaboration between different teams (bacteriologists and neonatologist) is important to prevent the spread of the infection.

In our hospital, the need for a bacteriology unit is urgent and measures have to take place.

KEY WORDS: Infection outbreak, neonatal care unit, prematurity, premature, neonate, hospital acquired infection, sepsis

ABSTRACT ID: 061

Effect of Preterm Premature Rupture of Membranes and Latency Period on Neonatal Outcome

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INTRODUCTION: PPROM complicated 3% of all pregnancies and is associated with 30-40% of preterm deliveries. The aim of the study was to compare outcome of babies born from pregnancies complicated with preterm premature rupture of membrane with babies born from spontaneous preterm deliveries.

MATERIALS&METHODS: Retrospective study during the period January 2013-January 2016. We included 2 groups.The study group,women with PPROM at gestational age 27 0/6 -36 6/7(n=700) and control group women with spontaneous preterm deliveries(n=1175).We excluded from our study pregnancies complicated with chorioamnionitis , fetal distress,preexlampsia,diabetes, multiple pregnancies.

Results: Neonates in study group has higher mortality (2%vs 0.7 P<.001),respiratory morbidity(40.1 vs 32.4 P<.001) and other(jaundice,hypoglycemia polycythemia,hypothermia 55%vs41% P<.001).

Neonatal adverse outcome was more likely seen in case with prolonged latency period over 7 days,oligohydramnios,nulliparity ,male babies.

CONCLUSIONS: PPROM increase the adverse neonatal outcome more likely in case with prolonged latency period, nulliparity .

KEY WORDS: PPROM, mortality,spontaneous preterm delivery

ABSTRACT ID: 062

Edward's Syndrome: a Great Clinical Polymorphism

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INTRODUCTION: Edward Syndrome (ES) or Trisomy 18 was first described in 1960 by Edwards et al, whoreported a newborn with multiple malformations and cognitiveimpairment. Its prevalence is estimated of 1: 3600–1:8500 live births with a female prevalence (sex ratio: ½). ES is characterized by variable clinical manifestations,with involvement of multiple organs and systems. More than130 different anomalies have been reported in the literature,which may affect virtually all organs and systems, none of whichis pathognomonic of trisomy 18.

MATERIALS&METHODS: We report 3 cases of Trisomy 18 with different clinical features admitted in our service these last three years

The first case: H.M; A male child born to a 42 year old mother from non-consanguineous marriage, by normal vaginal delivery at 35 weeks of gestation was referred to us at tire age of twelve hours with respiratory distress which started since birth. The baby was 1600g gr at birth with multiple congenital anomaliesincluding: spina bifida with hydrocephalus, omphalocele, Clenched fists with overlapping fingers and club feet. A Karyotype study has confirmed the diagnosis of Tisomy 18 and the baby has died at day 3 of life

The second case : A.J.A male child born to a 31 year old diabetic mother at 34 weeks of gestation by caesarian section was referred to us at birth with respiratory distress and difficulty in swallowing. The birth weight of the baby was 2 kg and he had different malformative clinical features that included: axial hypotonia,micrognathia, low set dysmorphic ears, short neck,single umbilical artery arthrogryposis withsyndactyly, and club feet. The newborn has also died at day 4 of birth.

In the thirdcase: D.M .A female child weighing 3300 gr born at full term by normal vaginal delivery to a 32 year old lady was referred to us for respiratory distress .the diagnosis of Edward syndrome was confirmed since 22 WA with fetal Karyotype performed after a pathologic antenatal ultrasonography but the interruption of the pregnancy was refused by the parents. Multiple facial abnormality was noted to have shortening of palpebral fissure, ocular hypertelorism, flat nasal bridge, severe cheilopalatognathus, hypogenetic ears, short and wide neck (Image 1). The abdominal ultrasound showed a horseshoe kidney and the echocardiography was normal. The newborn died at 10day of life.

CONCLUSIONS: The knowledge of the clinical features and prognosis ofpatients with ES is of great importance regarding the neonatalcare and the decision of performing invasive procedures.The early diagnostic confirmation is important for making medical decisions. Therefore many differential diagnoses with different prognosis exist, leading to the importance of the Karyotype even if the dysmorphic features are not great.

KEY WORDS: trisomy 18, Newborn, Karyotype, dysmorphic

ABSTRACT ID: 063

Spontaneous Perforation of Meckel's Diverticulum in a Newborn: Case Report

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INTRODUCTION: Meckel's diverticulum is the most common of the omphalomesenteric duct anomalies encountered in clinical practice. It may present with a wide variety of symptoms. It is usually found in infants orolder children, manifesting as lower gastrointestinal (GI) bleeding, small-bowel obstruction, and sometimes, with features suggesting acute appendicitis. Spontaneous perforation of Meckel's diverticulum in newborns is rare, and its complicated course makes preoperative diagnosis difficult.

MATERIALS&METHODS: We report a case of perforated Meckel's diverticulum (PM) with aseptic peritonitis during the firt 24 hours of life. It was a male baby weighing 1400g was born at 28 weeks gestation by Caesarian section because of chorioamnionitis to a 31-year-old primigravida mother. The Apgar score was 8 at 1min and 9 at 5min. The infant was transferred to our neonatal intensive care unit owing to his premature birth and mild respiratory distress. Routine plain film taken 10 h after birth showed a non distended stomach, most of the bowel gas, and a dilated intestinal loop beneath the liver edge in the right upper quadrant . Therefore, he was treated in nil-by-mouth status and was supplied with intravenous fluids.

Clinically, the abdomen was progressively distended but palpated softly without tenderness. An abdominal X-ray was performed again at 20 h of age and showed pneumoperitoneum. All vital signs were stable except for mild tachypnea. An emergency operation was performed 24 h after birth under a suspected diagnosis of gastrointestinal perforation. Before the operation, no meconium was passed .

At laparotomy, a wide-based Meckel's diverticulum was found located 12 cm above the ileocecal valve with several thin-walled irregular bulges in the antimesenteric side. A tiny perforation was found over one bulge . The perforation was a blowout-like lesion and the appearance of the surrounding bowel was healthy without any inflammatory reaction. A wedge resection of the intestine with end-to-end anastomosis was performed. The postoperative course was uneventful

CONCLUSIONS: Because PM in the newborn is very rare and the symptoms tend to vary, early recognition and prompt management with surgical intervention and intensive care depend on maintaining a high index of suspicion when the abdomen suddenly becomes distended. In our case, a congenital focal muscular defect of diverticulum and temporary elevation of intraluminal pressure due to bowel movement might thus have been the possible mechanism leading to perforation.

KEY WORDS: Meckel's diverticulum , newborn ,perforation,emergency

ABSTRACT ID: 064

Retinopathy of Prematurity: an Experience in an Intensive Care Unit In Tunisia

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INTRODUCTION: Retinopathy of prematurity (ROP) is a major cause of visual impairment in premature infants. It is characterized by an arrest in normal retinal vascular development associated with microvascular degeneration, followed by an abnormal hypoxia induced neovascularization. Recent studies point out that ROP is a multifactorial disease, implicating both oxygen-dependent and oxygen-independent mechanisms. The proportion of childhood blindness caused by ROP goes from 8% in high-income countries to 40% in middle-income countries.

The aim of this study was both, to identify the risk factors for retinopathy of prematurity (ROP), and to evaluate whether any new risk factors could explain the increase in the incidence of treatment-demanding for ROP over time in Tunisia.

MATERIALS&METHODS: A retrospective study conducted in neonatal intensive care unit of the Center for maternity and neonatal care in Tunis (CMNT) over a period of 4 years (January 1st 2012 to December31st 2015).

Premature neonates were recruited based on preset criteria such as: Gestational age less than <32 weeks and birth weight less than 1,5kg.

The first retina examination was done at 4 weeks post-delivery. The fundi were examined by an indirect binocular ophthalmoscope with 20D and 30D lenses.

Results:

About 60000 neonates were born during the study period in the CMNT, an average of 10000 neonates were admitted in neonatal intensive care unit. About 4000 (40%) of the admitted neonates are premature.

42 eyes of 21 neonates that met the selecting criteria were examined. Average maternal age was 33 years [24-39]. 48% of women had severe preeclampsia. Antenatal corticotherapy was administrated in 17 cases. Amniotitis was iditified in 5 new borns and those children had recieved antibiotherapy including cefotaxim and gentamycin for a medium period of 5 days for the first drug and 2 days for the second. A low Apgar score under 7 at the fifth minute was found in 3 patients. Average birth weight was 1340gr ± 210 g | [750 g _2200 g]. Patients were born at a medium gestational age of 29.8 ± 2.2 WA [27WA- 33WA]. 80% of cases had respiratory distress and 42% of them needed mechanical ventilation. Mean duration of the hospitalization of our patients was 36 days. Surfactant was administrated in 10 cases and nitric oxide in 4 cases. Neonatal infection was suspected in all the cases and it was feto-maternal infection in only 14% of the cases. Blood transfusion was performed in 18 patients. Hemodynamic issues were found in 18 neonates and 80% of them needed vasoactive drugs. Cerebral intra-ventricular hemorrhage was found in 42% of cases (Grade 1 in most cases). Avascularity in retina zones 2 and 3 was found in 16 eyes (76.2%) mostly among less than 30 weeks gestational age neonates and neonates with a birth weight less than 1250g. The retinopathy affected both eyes in 52% of cases. The challenges concerned co-ordination of follow-up visits and accessibility to treatment such as laser and newer treatment methods.

The main treatment has been laser and for about one year now, we have introduced the local treatment by Befazicumab. Only two neonates during this period of study have had severe visual impairment with blindness.

Since April 1st 2016, our department started a prospective study based on Retcam as a new screening method of ROP and both techniques will be compared. The results will be available in September 2016.

CONCLUSIONS: Neonatal reanimation in our country has evolved during the past years. Nevertheless, the number of ROP is still high. Constantly improving our reanimation methods should lessen this number and studies on genetic predispositions for ROP in our population are necessary.

Prerequisites for effective prevention of severe visual handicap in premature children are adequate screening and correct interpretation of the findings. National evidence-based guidelines have been developed from multicenter studies. Because of increasing knowledge with the natural course of the disease and the anatomical and functional outcome with actual treatment regimes, new treatment recommendations have recently evolved that eventually may modify actual guidelines.

KEY WORDS: retinopathy of prematurity, ROP, prematurity, retcam, neonatal care unit, laser treatment, Befazicumab

ABSTRACT ID: 065

Acute Intussusception in Pretrm Newborn: Case Report

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INTRODUCTION: Diagnosing acute intussusception in neonates is difficult because it is exceedingly rare in premature neonates. The commonest site for intussusception is usually ileoileal or ileocolic.

We report a case of intussusception in a premature neonate.

The Center for Maternity and Neonatal care in Tunis (CMNT) is a third level maternity. About 15000 neonates are born in this hospital. Most of them are premature. They are often sent to the CMNT for antenatal diagnosis in utero.

We report a case of intussusception in a premature neonate.

MATERIALS&METHODS: A premature neonate MZ born in the neonatal care unit in May 2016 was diagnosed with intussuction.

We report his case in order to discuss the antenatal findings, the clinical aspect, treatment managing and outcome of this neonate.

We studied the features based on his medical file.

He is currently still admitted in the neonatal care unit of the CMNT

MZ is a female preterm neonate, she was born at 32 weeks' gestation by urgent cesarean section, of dichorionic diamniotic twin pregnancy, with a birth weight of 1500gr. She had a respiratory distress syndrome treated by Nasal Continuous Positive Airway Pressure (NCPAP). with favorable evolution within 4 days of hospitalisation. First meconium was passed within 40 hours. Enteral feedings was begun via a nasogastric tube on day 5 , on day 20, MZ developed signs of intestinal obstruction. The diagnosis of necrotizing enterocolitis (NEC) was suspected and an abdominal X-ray showed few dilated loops with no gas in pelvis. Abdominal ultrasound showed intussusception as an occluding mass prolapsing into the lumen, giving the "coiled spring" at the ileocolic junction. Contrast enema was performed to reduce the intussusception with success. Control abdominal ultrasound showed expansion of the last ileal loop which suggested an intussusception since the antenatal period. Postoperatively, the patient recovered, was advanced to normal feedings and has a normal stool pattern.

CONCLUSIONS: Acute interssusception should be considered in neonates with signs of intestinal obstruction. This entity is often misdiagnosed as NEC. Early diagnosis can be done by ultrasound scan.

KEY WORDS: neonatal intestinal intessuction, prematurity, necrotizing enterocolitis

ABSTRACT ID: 066

Syndrome Apple-Peel: a Propos D'une Observation Neonatale

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INTRODUCTION: Le syndrome d'Apple Peel est une forme rare d'atrésie de grêle, due a une occlusion de l'artère mésentérique supérieure, se manifeste par un enroulement du grêle autour de l'axe vasculaire « en queue de cochon ».

MATERIALS&METHODS: Nous rapportons les aspects cliniques, radiologiques et thérapeutiques de cette affection à travers une observation:

Nouveau né de sexe féminin, issue d'un mariage non consanguin, mère âgée de 28 ans.

La grossesse était mal suivie, accouchement par césarienne le 24/07/2015 à un terme de 34SA pour pré-éclampsie sévère, Apgar 7/8/9. Le nouveau-né a été admis à la naissance pour détresse respiratoire néonatale, un retard de croissance harmonieux avec un poids à 1100 gr. Le nouveau né a été mis sous CPAP pour la détresse respiratoire puis rapidement mis sous ventilation mécanique suite à l'apparition de ballonnement abdominal, résidu vert avec retard d'émission de méconium. L'alimentation n'a pas été introduite. L'ASP montre un aspect en double bulles avec absence d'aération du tube digestif en aval.

Le nouveau-né a été opéré à j12 de vie pour suspicion d'atrésie du grêle avec découverte per-opératoire d'une atrésie du grêle type Apple-Peel syndrome. Une résection de la partie apéristaltique avec anastomose termino-terminale a été effectuée. La longueur du grêle restant a été estimée à 20 cm. L'évolution postopératoire : le nouveau-né n'a pas rétabli son transit, le régime n'a pas été introduit. Elle a été gardée sous antibiotiques à visée nosocomiale devant l'ascension de la CRP. Décédée à J3 postopératoire dans un tableau de choc septique

CONCLUSIONS: Le syndrome d'Apple Peel est une maladie rare. Il constitue 10 à 15% de toutes les atrésies de l'intestin grêle. Les anomalies associées constituent une source de morbi-mortalité non négligeable. Avec les progrès réalisés dans le diagnostic pré et post natal précoce, la chirurgie et la nutrition parentérale, le pronostic de cette affection s'est amélioré, mais reste sombre.

KEY WORDS: occlusion néonatale, atrésie du grêle, Apple-Peel, grêle court

ABSTRACT ID: 067

Lymphangiome Kystique Cervicale Enorme de Decouverte Antenatale

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INTRODUCTION: Le lymphangiome kystique est une tumeur vasculaire, bénigne, rare, d'origine lymphatique. Sa pathogenèse est inconnue. Cette malformation congénitale du système lymphatique est composée de formations kystiques développées à partir d'endothélium lymphatique et remplies de lymphe et du sang. La symptomatologie est fonction de la taille et de la topographie de la formation kystique. Le traitement est essentiellement chirurgical

MATERIALS&METHODS: Nous rapportons l'observation d'un nouveau-né d'origine libyenne issu d'un mariage consanguin de premier degré. La mère présente un rein ectopique avec un utérus bicorne, G9P3 avec 6 FCS, deux enfants vivants asymptomatiques.

A l'échographie anténatale, découverte d'une masse kystique cervicale hétérogène faisant évoquée un lymphangiome kystique.

L'accouchement est par césarienne pour utérus bi cicatriciel. Il s'est déroulé sans complications. Le nouveau-né est asymptomatique sur le plan respiratoire et hémodynamique présentant une masse cervicale droite de consistance molle et indolore sans signes inflammatoires locaux en regard.

L'échographie a été réalisée montrant une formation kystique liquidienne hétérogène multi cloisonnée avasculaire.

IRM cervicale: formation kystique mesurant 1214 cm dans le plan axial et 12 cm dans le plan cranio-caudal. Elle est cernée par une paroi régulière et siège de cloison fine. Cette formation présente des contacts intimes avec les structures vasculaires cervicales et la glande thyroïde. Elle s'insinue entre la veine jugulaire et l'artère carotide. Elle n'infiltre pas les structures vasculaires péri rachidienne. Les voies aériennes sont libres.

Le traitement chirurgical est prévu à l'âge de six mois devant la stabilité du nouveau-né et l'absence de retentissement sur le plan respiratoire.

CONCLUSIONS: Le lymphangiome kystique est une malformation lymphatique bénigne rare, mais peut être grave par ses caractères évolutifs et sa tendance disséquante. Le traitement de choix est la chirurgie d'exérèse. Elle est indiquée de première intention. L'exérèse doit être complète pour éviter les récidives

KEY WORDS: tumeur vasculaire, lymphangiome, tumeur kystique, tumeur cervical

ABSTRACT ID: 070

Impact of Gestational age at Pprom on the Short-Term Outcome of Children Born After Extreme and Prolonged Preterm Prelabor Rupture of Membranes in an Experienced Care Center

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INTRODUCTION: Neonatal survival after PPROM recently increased up to 90% in some tertiary neonatal centers. Known risk factors of poor outcomes are a lower gestational age at PPROM and a prolonged and severe oligohydramnios .

MATERIALS&METHODS: We performed a retrospective study including 14 pregnant women who experienced PPROM before 25 weeks of gestation, with a prolonged (>14 days) and severe oligohydramnios (AFI<5). Each alive neonate was matched with a control patient.

Results : Live birth rate was 70% and neonatal survival was 93%. Apgar scores at 5 minutes were lower in the PPROM group (p=0,01). Intubation was necessary for all babies with PPROM and for 38% of the control (p < 0,01). In a subgroup analysis of PPROM group, we found that all babies with PPROM < 20 weeks presented refractory hypoxemia and required iNO administration compared with one in the PPROM group > 20 weeks (p < 0,01) . We found no difference in the rate of BPD, NEC, ROP or intraventricular hemorrhage.

CONCLUSIONS: PPROM before 20 weeks of gestation exposes the neonate to a high risk of refractory hypoxemia. Initial evolution is difficult but these newborns quickly behave like their controls.

KEY WORDS: preterm prelabor rupture of membranes, oligohydramnios, pulmonary hypertension, pulmonary hypoplasia

FIGURES:
https://www.eiseverywhere.com/eselectv2/backendfileapi/download/105597?id=XggzLTEMqog%3D

ABSTRACT ID: 071

How Much Is Too Much? Establishing Good Practice For Documented Clinical Review In Northern Ireland's Teriary Neonatal Intensive Care Unit

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INTRODUCTION: In Northern Ireland's (NI) tertiary neonatal unit there is no standard regarding how often a patient should have a documented review in their clinical notes. Ward rounds and handovers occur three times daily but this does not equate to documenting in clinical notes. No guidance was noted on review of the British Association of Perinatal Medicine (BAPM) standards.

MATERIALS&METHODS: A retrospective audit was performed reviewing medical notes for infants within the Neonatal Intensive Care Unit (NICU) from 5/1/16 to 8/1/16. The numbers of hours between the morning review and the preceding timed entry in the medical notes was noted.

Intervention: One neonatal registrar had an established individual practice of documenting a clinical review in all intensive care patient notes during a twelve hour night shift. This came from their background in working in a tertiary paediatric intensive care unit where it was standard practice. As this practice was not the standard for the Northern ireland tertiary neonatal unit, this was seen as 'an intervention'.

Comparison: A re-audit was performed during these night shifts between 12/01/16 and 15/01/16 and any updates to the infants management plan were noted.

CONCLUSIONS: Notes were available for 20 neonates in the first period vs 21 neonates for the second period of review. The average number of hours between clinical documentation was 17.3 hours in the first cohort compared with 8.8 hours in the second cohort. Of the 21 neonates who were reviewed on a more frequent basis, thirteen had documented updated plans. The remaining 8 infants did not require any change in their ongoing management.

It is important to note that the updated management plans may have been made regardless of formal documentation. However it is essential to update medical notes regularly from a medico-legal and patient safety perspective. Ongoing evaluation of this intervention will allow analysis of the clinical effect of the increased frequency of review in terms of ventilator days, morbidity and healthcare associated infections.

It is felt that good practice would be to document in every intensive care patients' notes at least once per day and once per night shift. This will ensure that an on-going formal record of updated management plans is kept.

KEY WORDS: good clinical practice, neonates, documentation

ABSTRACT ID: 073

An Antenatal Discovery of a Huge Cystic Hygroma

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INTRODUCTION: The cystic hygroma is a rare and benign vascular tumor. Its pathogenesis is unknown.

This congenital malformation of the lymphatic system is composed of cystic formations developed from lymphatic endothelium and filled with lymph and blood.

The symptomatology vary with the size and topography of the cystic. Surgical excision is the main therapeutic method.

MATERIALS&METHODS: it is a newborn of Libyan origin, from a first degree consanguineous marriage.

The mother has an ectopic kidney with a partial bicornuate uterus. Gravidity : 9, parity : 3.

She has two asymptomatic healthy kids and six spontaneous miscarriage.

A Prenatal ultrasound showed an heterogeneous cervical cystic mass reminiscent of a cystic hygroma. The delivery was by cesarean section for bicicatriciel uterus. It went without complications.

The newborn is asymptomatic in the respiratory and hemodynamic plane. He has a right painless cervical mass of soft consistency and without inflammatory signs .

Ultrasonography was performed showing an heterogeneous multi partitioned and avascular cystic formation.

Cervical MRI: cystic mass measuring 12 14 cm in the axial plane and 12 cm in the craniocaudal plane. It is surrounded by a thin and regular wall. It presents intimate contact with cervical vascular structures and thyroid gland. It creeps between the jugular vein and carotid artery. It does not infiltrate the spinal vascular structures. The airways are free.

Surgical treatment is planned at the age of six months since the stability of the newborn and the absence of impact on the respiratory system.

CONCLUSIONS: The cystic hygroma is a rare benign lymphatic malformation, but can be serious by its evolutionary character. The treatment of choice is surgical resection. It is indicated for first-line. The removal must be complete to prevent recurrences

KEY WORDS: cystic hygroma, vasculor tumor, lymphatic malformation, benign tumor

ABSTRACT ID: 074

Who to Interrupt? Comparing Interruptions on Registrar-Led Ward Rounds VS Consultant-Led Ward Rounds in Northern Ireland's Tertiary Neonatal Unit

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INTRODUCTION: Ward rounds facilitate the communication of essential information to inform clinicians of developments impacting on clinical care. It is important for unnecessary interruptions to the ward round to be avoided. This observational study aims to review the number of interruptions in registrar-led ward rounds in comparison to consultant-led rounds. The hypothesis for this study was that registrars are more likely to be interrupted than consultants.

MATERIALS&METHODS: In the Northern Irelands tertiary neonatal intensive care there are up to three ward rounds per day. The ward rounds include a mixture of a consultant-led round in the morning and registrar-led rounds in the evening and or night. Over a period of five days the ward rounds were directly observed and a record was made of all interruptions including whether they were avoidable or not.

CONCLUSIONS: In total ten ward rounds were directly observed. Sixty percent of the ward rounds were consultant led and fourty percent were registrar led. There were nine interruptions in total with eight interruptions being deemed avoidable. Of the avoidable interruptions, sixty percent occurred during the registrar-led ward round in comparison with fourty percent being made during consultant-led rounds. The most common interruption was to request the prescription of a non-urgent medication for another patient.

The results of the observation support our study hypothesis that registrar-led rounds are more likely to suffer from avoidable interruptions. A larger scale study may help assess the impact of interruptions on communication and patient safety. The results of this study have been relayed to senior nursing colleagues to facilitate education on the importance of clinical handover on patient safety.

KEY WORDS: Neonatal Handover Communication

ABSTRACT ID: 075

Apple-Peel Syndrome: About a Neonatal Case

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INTRODUCTION: The Apple Peel syndrome is a rare form of atresia of small intestine.

It's due to an intrauterine occlusion of the superior mesenteric artery and is manifested by winding of the small bowl around the vascular axis like a « pigtail ».

MATERIALS&METHODS: S.R is a female newborn, from a non-consanguineous marriage.Her mother is 28 years old.

The pregnancy was poorly followed. The delivery was made by cesarean section on 07.24.2015 at a term of 34 weeks, for severe pre-eclampsia. APGAR score was estimated at 7 a first minute , 8 at fifth minute and 9 and the tenth minute.The newborn was admitted, for neonatal respiratory distress and harmonious growth retardation with birthweight of 1100 gr. She was put under CPAP for respiratory distress and quickly switched on mechanical ventilation for abdominal bloating, green residue and delay of issuance of meconium.

She was kept on diet. The abdominal x-ray showed bubbles of fluid and air in the stomach and duodenum or no air in other parts of the intestine.

The surgery was performed at age of 12 days. The operative report described a type 4 small bowel atresia known as apple peel syndrome. A resection of the segment without peristalsis, then an end-to-end anastomosis was performed. The length of the remaining hail was estimated to be 20 cm.

In the postoperative period, the newborn was on parenteral nutrition. Meconium was unissued.

She was kept on antibiotics for a nosocomial infection supposed to CRP rise.

She died at the age of 15 days, 3 days postoperative, in an array of a septic shock.

CONCLUSIONS: Apple Peel Syndrome is a rare disease. It represents 10 to 15% of all of the small intestine atresia.

Associated malformations are a significant source of morbidity and mortality.

With advances in prenatal and early postnatal diagnosis, surgery and parenteral nutrition, the prognosis of this disease has improved, but remains grim.

KEY WORDS: apple peel, small intestine atresia, short gut, delay of issuance of meconium

ABSTRACT ID: 076

Diastematomyelite Revelee Par un Prolapsus Rectal

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INTRODUCTION: La diastématomyélie est une forme rare de dysraphisme spinal. Les structures concernées par la malformation sont les vertèbres et le canal spinal, la moelle et les racines nerveuses, les méninges et la peau. La myéloméningocèle en représente la forme la plus grave. Le diagnostic anténatal de cette malformation est possible grâce à l'échographie et à l'IRM fœtale. Les troubles vésico-sphinctériens sont polymorphes et dépendent du siège et l'étendue de la malformation. Un prolapsus rectal est très évocateur et doit faire rechercher systématiquement cette affection. Un traitement micro neurochirurgical est systématique à l'âge de nourrisson.

MATERIALS&METHODS: Nouveau né de sexe masculin issu d'une grossesse mal suivie, né à terme par voie basse. Notion de spina bifida chez le frère. Hospitalisé à H1 de vie pour DRNN avec prolapsus recta. L'examen trouve un patient eutrophique, DRNN modérée, pas de dysmorphie, bon tonus axial et périphérique, voussure lombaire médiane basse de 8x4 cm ferme sans anomalies de la peau en regard, fossette coccygienne, prolapsus rectal de 8 cm avec mobilité des membres conservée. Le reste de l'examen est sans particularités. Le patient a subit une réduction manuelle du prolapsus sans incidents. Une échographie des parties molles du dos montre une collection liquidienne de 14x8 cm en regard des vertèbres lombaires communiquant avec la moelle. L'IRM médullaire montrant une diastématomyélite uni focale type II en regard de L2 associé à une myéloméningocèle, une moelle bas attachée et une spina bifida aperta. Le reste du bilan malformatif est sans anomalies. Le patient est adressé en neurochirurgie pour complément de prise en charge chirurgicale.

CONCLUSIONS: La diastématomyélite est une anomalie congénitale rare dont d'étiologie reste inconnue. Le diagnostic anténatal est possible. L'IRM est indispensable pour le diagnostic. Une prise en charge chirurgicale précoce assure un meilleur pronostic.

KEY WORDS: yacineanais

ABSTRACT ID: 077

Les Hypoglycemies Neonatales: Profil Epidemiologique, Etiologique et Evolutif

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INTRODUCTION: L'hypoglycémie est un problème métabolique fréquent en pédiatrie, en particulier chez le nouveau né. La fréquence des hypoglycémies néonatales en milieu hospitalier se situe entre 2,2 et 18 %. C'est une urgence diagnostique et thérapeutique du fait du pronostic vital immédiatement mis en jeu et du risque de séquelles neurologiques.

MATERIALS&METHODS: Objectif :

L'objectif de notre étude est de préciser le profil épidémiologique, étiologique et évolutif des hypoglycémies néonatales et de relever les difficultés de sa prise en charge dans l'unité de néonatologie de Bizerte.

Patients et méthodes :

Il s'agit d'une étude rétrospective sur une période de 3 ans allant de janvier 2013 à septembre 2015. On a inclus tous les nouveau-nés ayant présenté une glycémie aux talons inférieur ou égale à 0.5 g /L soit comme motif d'admission ou pendant leur hospitalisation.

Résultats :

Le nombre de cas d'hypoglycémie était de 75 cas dont l'âge moyen à l'admission en heures est de 6 .67 H .L'âge gestationnel moyen était de 38.29 SA, dont 45.5% sont des prématurés et 16,7 % ayant un dépassement du terme. La grossesse était gémellaire dans 5% des cas. L'accouchement était par voie basse dans la moitié des cas. Le pourcentage des macrosomes représentait 41,33% alors que le retard de craoissance intra-utérin représentait 12%.

Les nouveau-nés étaient asymptomatiques dans 26.67 % des cas, en détresse respiratoire dans 61% des cas. Les autres signes cliniques étaient un accès de cyanose dans 6,67% et sur le plan neurologique une mauvaise succion dans 40% des cas et des convulsions dans 4% des cas. La glycémie au talon était < à 0,4g /L dans 45,33% des cas avec une glycémie veineuse concomitante < à 0,3g/L dans 50,67%. Vingt pourcent des patients avaient une hypocalcémie associée. Les principales étiologies étaient la macrosomie (41.33%), l'infection materno-fœtale (41.23%), le diabète gestationnel (22.67%), la prématurité (4%), le retard de croissance intra-utérin (4%) et l'asphyxie périnatale (9.33%). L'évolution immédiate était favorable dans la majorité des cas. L'hypoglycémie était persistante dans 3 cas qui présentaient un lépréchaunisme, un déficit en acide propionique et le troisième en cours d'exploration.

CONCLUSIONS: Notre étude confirme que les étiologies les plus fréquentes des hypoglycémies néonatales sont représentées par le diabète maternel, l'infection néonatale, la prématurité, le retard de croissance intra–utérin et la souffrance néonatale. La fréquence peu élevée des hypoglycémies néonatales retrouvée dans nos résultat peut être due au caractère rétrospectif de l'étude et probablement un sous diagnostic de cette anomalie surtout que les nouveaux nés étaient asymptomatiques dans un quart des cas. L'évolution est le plus souvent favorable, mais devant une hypoglycémie persistante il faut penser rapidement aux maladies métaboliques.

KEY WORDS: yacineanais

ABSTRACT ID: 078

Bilateral Congenital Glaucoma: About a Case

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INTRODUCTION: Congenital glaucoma is a rare condition. It is due to the persistence of Barkan embryonic membrane responsible for an obstruction of the iridocorneal angle. Glaucoma is usually bilateral. The diagnosis and the treatment must be precocious, in the neonatal period, to improve the visual prognosis.

The general prognosis depends on associated diseases .

MATERIALS&METHODS: We report the case of a newborn whose diagnosis of glaucoma was made postnatally.

Feriel is a female newborn, from a first degree consanguineous marriage.

Her mother is 30 years old, gravidity =2 and parity =2.

The pregnancy was poorly monitored.

She was born via a vaginal approach, on 24.08.2015, at a term of 39 weeks.

The APGAR score was 7 in the first minute, 8 in the fifth minute and 8 in the tenth minute.

Her birth weight was 3600 grams. The initial examination showed a buphthalmos with a white cornea.

She needed oxygen for her respiratory distress and antibiotics for a probable bacterial maternal-fetal infection.

The ophthalmologist examination showed bilateral megalocornea with opaque cornea evoking bilateral congenital glaucoma.

The evolution was marked by the persistence of respiratory distress with pulmonary hypertension, intubated and put under Alprostadil for suspicion of a congenital cardiopathy.

She died at the age of ten days in an array of septic shock

CONCLUSIONS: Congenital glaucoma can be isolated or associated with eye defects or general diseases.

It is sometimes hereditary and hence the interest of the interrogation and genetic investigation.

The visual prognosis is poor.

Undiagnosed, it is mandatory blindness; even diagnosed and operated earlier, some children will be deficient because unfortunately visual optic atrophy has already constituted in utero.

The vital prognosis depends on the general disease.

KEY WORDS: congenital glaucoma, blindness, white cornea, visual optic atrophy

ABSTRACT ID: 081

Effectiveness of Single Dose Salbutamol Nebulization in the Treatment of Transient Tachypnea of the Newborn: a Double Blind Randomized Placebo Controlled Trial

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INTRODUCTION: Transient tachypnea of the newborn (TTN) is a self-limiting disease, but may lead to multiple diagnostic studies, prolonged hospitalization with NICU admission and increased healthcare costs, separation from the parents and parental anxiety. Salbutamol increases lung liquid clearance through its action on sodium ion transport in alveolar type II epithelial cells, and decreases duration of tachypnea. We aimed to compare TTN duration and severity among term neonates who received salbutamol compared to placebo.

MATERIALS&METHODS: We conducted a parallel, superiority RCT among term neonates with transient tachypnea of the newborn. They were randomized to receive single dose nebulization with salbutamol or saline. Outcomes of interest were time to resolution of tachypnea, TTN scores, heart rate and respiratory rates, admission to NICU, duration of oxygen support, and adverse events.

CONCLUSIONS: A single dose salbutamol nebulization for neonates with TTN did not have any adverse effects. However, we had insufficient evidence to demonstrate a difference in duration and severity of tachypnea between neonates who received single dose salbutamol versus placebo. Further investigations with larger sample and control over the timing of administration and frequency of nebulization is needed before recommending this as part of standard therapy.

KEY WORDS: Transient tachypnea of the newborn, neonatal Respiratory Distress Syndrome, Salbutamol, nebulization

ABSTRACT ID: 083

Comparing Therapeutic Impact of Bubble Cpap With Variable Cpap in Premature Infant With Respiratory Distress

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INTRODUCTION: Respiratory distress syndrome (RDS) occurs mainly in preterm infants due to surfactant deficiency and its incidence inversely related with gestational age and birth weight. Continuous Positive Airway Pressure (CPAP) is a non invasive method of treatment which to prevent to collapse of alveoli and distal airways, especially during expiration. Today CPAP is applied in two ways: continuous flow and variable flow. Continuous flow CPAP applied by the ventilator or Bubble. This study was designed to investigate the efficacy of Bubble CPAP and Variable CPAP in preterm infants with RDS.

MATERIALS&METHODS: this was a randomized clinical trial with the sample size 112 Preterm infants with moderate RDS and gestational age of 28 to 34 weeks and birth weight 1000 to 2400 g, whom were born from January 2013 to March 2014 and admitted to NICU. These infants required FIO2>%21 and their respiratory score based on Silverman Anderson table were 5-7. They were randomized to one of the bubble CPAP or variable CPAP groups. Data were analyzed using SPSS version 17.

CONCLUSIONS: This study was performed on 112 infants. Treatment duration with CPAP and mechanical ventilation in variable CPAP was significantly less than bubble CPAP. (P = 0.044 and P = 0.043 respectively). Duration of oxygen therapy in bubble CPAP and variable CPAP were 5.38±4.31 and 5.37±4.55 days respectively but there was no significant difference between them (P =0.772). The rate of complications was not different between the two groups significantly. Median of hospitalization was not significantly different 19 days in bubble CPAP and 18days in variable CPAP. The mean weight at discharge in bubble CPAP was 1720±259 g and in variable CPAP 1755±261 g. In the bubble CPAP group, 30 cases (55.6%) and in the variable CPAP group 22 cases (43.1%) received surfactant and there was no significant difference between two groups (P= 0.243). This study showed that duration of CPAP and mechanical ventilation were shorter in variable CPAP method than the bubble CPAP.

KEY WORDS: Premature Infant, Respiratory Distress Syndrome, bubble CPAP, variable CPAP

ABSTRACT ID: 084

Prenatal Echocardiography - The Impact on Neonatal Management

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INTRODUCTION: Congenital heart disease (CHD) results in significant neonatal morbidity and mortality.

Prenatal diagnosis of CHD is increasingly common, varies from 16-65% depending on the experience of the center and physician. But some of severe CHD as coarctation of the aorta remains one of the most difficult disease to detect before birth. Prenatal diagnosis allows to refer the parents to a tertiary medical centers and prepare for planned delivery, as well as to establish an appropriate perinatal and postnatal therapeutic plan.

Babies born in low-risk level sites with unexpected CHD, may have significantly poorer outcomes due to lack of immediate access to appropriate speciality care.

Prenatal suspicion of CHD, even if it turns out false positive, always arouses parental anxiety and requires detailed pediatric cardiac evaluation.

The purpose of this study was to compare results of fetal echocardiography (FECHO) to postnatal findings, and to assess the impact of antenatal suspicions of CHD on postnatal management.

MATERIALS&METHODS: Medical records of mother-infants pairs with CHD or other cardiac diseases admitted to the Neonatal Intensive Care Unit (NICU) of the Medical University of Gdansk from 01.01 - 31.12.2013 were reviewed.

We analyzed if the defect was detected pre- or postnatally, and if the diagnosis was made by the obstetrician from low-risk level sites (level I) or from a tertiary care center (level II sonography).

Fetuses referred to our tertiary perinatal care center had been scanned by a perinatologist specialized in fetal medicine.

Postnatal confirmation was obtained on the basis of neonatal echocardiography (NECHO), performed by pediatric cardiologist before discharging the infants home or transferring to surgery center. Late outcomes were obtained by reviewing medical records of pediatrics cardiac center.

The overall incidence of CHD in neonates hospitalized in our facility (2008 infants) over the study period was 68 (3,4%). Critical congenital heart defects (CCHD) were found in 24 neonates (1,2% of the series, 35,3% of all CHDs), 21 were diagnosed prenatally at our center, 3 were transferred from 1st level units. All infants with antenatal suspicion of cardiac lesions were admitted to the NICU and obtained cardiac assessment.

Fetuses in which an obstetric scan suggested cardiac lesions were 88.

Of them 65 were verified at our center, CHD were excluded in 2 cases referred from level I facilities, NECHO revealed normal heart anatomy, they were true negative diagnosis. In 3 cases there were major variations between antenatal and postnatal findings. Correlation between prenatal diagnosis made at our center and postnatal findings was achieved in 49,2% of cases (32 infants). Among 23 babies referred from level I facilities in only 1 case clinically non significant CHD (ASD2) occurred. Accuracy in all prenatal and postnatal findings was achieved in 36,4% of cases.

The prenatal and postnatal findings in the study population are shown in Table 1.

There were major differences in the disproportion of the great vessels and postnatal confirmation of CoAo (7,1%). There was a much closer correlation between FECHO and NECHO of HLHS, DORV, ToF, TGA, AVSD, PS and other complex lesions - the detection rate was 76%.

It should be emphasized that infants born at our center (21) had prenatal diagnosis of CCHD, in contrast to those born at other sites (3), what affected postnatal management and late outcomes.

Defects diagnosed postnatally are shown in Figure 1.

CONCLUSIONS: The prenatal diagnosis has significant impact on neonatal management, allowing appropriate medical care and planning surgery immediately after birth.

We confirmed increasing diagnostic rates when the diagnostics is performed at a tertiary care center. The results of our study are in agreement with literature which states that prenatal detection of CoAo is still challenging.

Despite the high rates of misdiagnosis, majority of infants benefited from prenatally diagnosed CCHD. Improved accuracy in fetal diagnosis can be achieved through better organisation of perinatal care.

Abbreviations: AS Aortic stenosis, ASD2 secundum atrial septal defect, AVSD atrioventricular septal defect, tAVC transitional atrioventricular canal, BAV bicuspid aortic valve, CoAo coarctation of the Aorta, DORV double outlet right ventricle, HAA hypoplastic aortic arch, HLHS hypoplastic left heart syndrome, IAA interrupted aortic arch, IAS intact atrial septum, IVS intact ventricle septum, LVOTO – left venticular outflow tract obstruction, PAPVR partial anomalous pulmonary venous return, PDA patent ductus arteriosus, PFO patent foramen ovale, PA pulmonary atresia, PS pulmonary stenosis, PLSVC persistent left superior vena cava, ToF tetralogy of Fallot, d-TGA dextro-transposition of the great arteries, c-TGA corrected-TGA, l-TGA levo-TGA, VSD ventricular septal defect,

AVB Atrioventricular block, HF heart failure, SUA single umbilical artery. CP cerebral palsy.

KEY WORDS: congenital heart disease, prenatal diagnosis, neonatal outcomes

FIGURES:
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TABLES:
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ABSTRACT ID: 086

Suggested Criteria to Write a Structured Radiologic and Ultrasonographic Report in Order to Improve Its Clarity For Patient's Attending Physician And Family.

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INTRODUCTION: In healthcare, radiological investigations are performed to obtain a diagnosis based on symptoms reported by the patients or their families or to confirm pathologies detected in screening programs. After having studied and interpreted the images, the radiologist writes his opinion in a document called medical report, which is delivered to the patient and his attending physician for the purpose of seeking the best treatment as soon as possible. The so-called "Structured report", a radiologic report that is of easier and more rapid comprehension by the newborn's attending physician and his/her family, is still not in common use. According to Italian Deontologic Code, the physician must give comprehensible and complete information to the patient on his diagnosis in order to protect both the patient and physician work [1]. Even though it is well known the impact of healthcare technology on healthcare costs, thanks to the last century scientific progress and development, it has been possible to get early diagnosis and lengthen medium survival in developed Countries. The role of Health Techonology Assessment (HTA) is to improve the use and performance of medical devices, including medical reporting. In this paper we suggest new criteria apply in the written form of radiologic and ultrasonographic report so that it is more clear to understand by the newborn's attending physician and his/her family. These criteria can be easily introduced in every day clinical practice by all Radiologists and can increase the efficacy of medical devices in use [2,3].

MATERIALS&METHODS: We built up a working group made up of Radiologists belonging to University, Hospital and Residency Program and the Medical Director of HTA of University Hospital of Trieste. First we carried out a bibliographic research. Then we obtained opinions by clinicians from surgery, medicine and oncology units belonging to a 900 beds hospital in order to understand their needs and verify the comprehension of radiologic reports realized in the hospital. Furthermore we compared the radiologic reports realized in our Institution with other radiologic reports from another university hospital [4,5].

CONCLUSIONS: It is well know how radiologic and ultrasonographic reports, realized by the radiologists, have to be comprehensible by other people, clinicians and newborn's families. They must understand it clearly, without any doubts. Furthermore, these reports represent one of the fundamental supports to decide future treatment for the patients. For instance, it is very important to include the clinical question at the beginning of the report and clear conclusions at its bottom, otherwise, in case of a more complex text, the correct diagnosis may be missed. Even though the newborn's attending physician receives a compact disk (CD) with radiologic images, sometimes he/she is not able to interpret them. It is suggested that the newborn's medical multidisciplinary group discusses the radiologic images in the hospital. Moreover, as reported by some papers in literature, clinicians prefer the use of a check list to structure the report because it improves diagnosis communication, attracting the attention on principal findings. However, we did not find any guidelines in Italy about structured radiologic and ultrasonographic reports. Report Categories offer immediate comprehension to the reader, especially if they are clear and not in contradiction. It is possible to attach a drawing with the lesions localization. Our working group realized 1 table (here attached) reporting criteria to write a structured report, approved by both the working group and physician from the various clinical units [6,7,8]. A more efficacious diagnosis formulation favours prompt treatment for the newborn patient and avoids exams repetition, with consequent better control of healthcare costs. References: [1]FNOMCO, Codice di Deontologia medica 2014; [2]Weiss DL, Langlotz CP. "Structured reporting: patient care enhancement or productivity nightmare?" Radiology, vol. 249(3), pp. 739–747, 2008; [3]Stroili M "Il Referto radiologico o ecografico strutturato con disegno. Il valore aggiunto della standardizzazione della forma della diagnosi per il chirurgo e l'internista nell'health technology assessment" Poster in SIA, Congresso triveneto ,Trieste,aprile 2016; [4]M.Stroili,G.DelConte,M.Malagoli,G.Pieri,A.Guglielmi,M.Ukmar,M.Cova "I quesiti clinici del medico oncologo al medico radiologo e il valore del referto radiologico strutturato: i tumori dell'apparato urogenitale maschile e femminile in Risonanza Magnetica", Poster in SIA Congresso Triveneto,Trieste,aprile 2016; [5]Radiology AOU Padua "report RM" in 2015; [6]American College of Radiology. ACR Breast Imaging and Radiological Data

System Birads. 3rd ed. 2003. Reston, VA, USA; [7]ESUR prostate MR Guidelines PI-RADS score 2012; [8]UICC "TNM Classification of Malignant Tumours", 2012.

KEY WORDS: radiological structured report, HTA, Health documentation, ultrasonographic structured report,

TABLES:
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ABSTRACT ID: 089

Urinary Ascites in the Newborn Male With Posterior Urethral Valve

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INTRODUCTION: The source of ascites in most of cases is not known and remains a controversial subject. The posterior urethral valve is rare and usually fatal because of antenatal bladder obstruction, manifested either as urinary ascites or a perirenal collection. It's a rare entity first described in 1894, often associated with significant mortality can reach 70 %. Contributory factors to this mortality are concurrent uremia, acidosis, sepsis, and respiratory compromise. Early detection and better neonatal care can significantly improve survival.

MATERIALS&METHODS: The patient, male, was born at 35 weeks' gestation with ascites and bilateral pyelectasis diagnosed prenatally. He was hospitalized at birth for respiratory failure and was noted on examination to have significant ascites, abdominal distention and hydrocele. Abdominal ultrasonography showed pelvicalyceal bilateral dilatation with kidney damage, ascites and thick-walled bladder. The urethrocystography retrograde showed an urétéral perforation. No evidence of portal hypertension or congenital heart disease was found as the cause of the ascites. A peritoneal puncture was made and yielded 140mL of clear fluid. Serum creatinine on the first day after birth was 130 umol/L, and the ascites creatinine was 55umol/L. Placement of a urethral catheter was successful. During the next 4 days, the serum creatinine fall to 64 umol/. The patient was taken to the operating room, a cystoscope was passed into the urethra and he had valve fulguration. During opération, significant bladder hypertrophy was noted with wide ureteral meatus. At 4 months of follow-up, the patient was doing well with normal serum creatinine.

CONCLUSIONS: Néonatal urinous ascites may be secondary to posterior urethral valve, an exceptional case, hence the importance of prenatal diagnosis of malformations uropathies by obstetric ultrasound which allows the diagnosis and taking early treatment.

KEY WORDS: yacineanais

ABSTRACT ID: 090

Neonatal Neuroblastoma: a Poor Outcome

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INTRODUCTION: Neuroblastoma, an embryonic tumor arising from the sympathetic nervous system, is the most common neonatal malignancy accounting for more than 20% of neonatal cancers.

MATERIALS&METHODS: Case report:

Y.A. was a 2480g male neonate, delivered at 34 weeks' gestational age by cesarean section due to fetal bradycardia. No fetal ultrasound was performed. At birth he had severe respiratory distress related to respiratory distress syndrome that had needed surfactant replacement. The physical examination showed a huge abdominal mass located in the left flank and hypochondriac region.

The abdominal ultrasound showed that the mass depends on the adrenal gland and contains multiple calcifications. The diagnosis of neuroblastoma was highly suspected and urinary catecholamine metabolites levels were therefore elevated. The serum Neuron Specific Enolase level was also high. Unfortunately the newborn died at day 4 of life with refractory hypoxemia. The autopsy was afterwards performed and confirmed the diagnosis.

CONCLUSIONS: Neuroblastoma is the most frequent malignancy of the neonate and usually has a very good prognosis with a highlikelihood of spontaneous regression. In some cases the outcome can be poor

KEY WORDS: neonatal; neuroblastoma; outcome; abdominal ultrasound

ABSTRACT ID: 092

Neonatal Jaundice- an Audit on Investigation and Management Against National Guideline Recommendations in The United Kingdom (Nice CG98)

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INTRODUCTION: Jaundice is a common problem in neonates. High levels of unconjugated bilirubin may cause toxicity to neural tissue (bilirubin encephalopathy) and chronic neurological sequelae. Clinical assessment of jaundice can be very difficult and the consequences of missing significant jaundice can be severe; therefore it is important to follow consensus and evidence based guidelines to provide the best level of care.

We audited our adherence to United Kingdom national guidelines on neonatal jaundice (National Institute for Health and Care Excellence or NICE) at our large district general hospital in the Greater London area. The aim was to look for areas where we could improve the quality of care.

MATERIALS&METHODS: The NICE guidelines in the United Kingdom specify set standards to be followed: www.nice.org.uk/guidance/cg98/resources. 100% compliance is expected. We also audited some additional standards related to the practical management of jaundice, which we felt were indicators of good quality care. We collected data retrospectively from hospital notes for babies born between June to September 2015. 34 patients were audited and data was collected on a Microsoft excel proforma.

CONCLUSIONS: Some areas of good clinical practice were demonstrated. There was prompt measurement of bilirubin in jaundiced babies and prompt initiation of phototherapy where indicated (100% compliance); however monitoring whilst on phototherapy fell short of NICE standards.

The identification and assessment of patients at high risk of jaundice was poor and not seen as part of routine care. Parents were not routinely given written information about jaundice. Medical review of patients with jaundice was often delayed beyond recommended timings. Transcutaneous bilrubinometer usage was low (likely because of lack of training and equipment).

Significant variation in practice was seen, likely because jaundice is usually physiological and very common in neonates. It is important to follow consensus guidelines to avoid missing severe and pathological jaundice.

Recommendations from this audit:

1. Patient information leaflet (as produced by NICE)
2. Checklist for jaundice risk factors in neonatal notes.
3. Addition to phototherapy threshold graphs of a table for recording bilirubin levels and threshold treatment table for >38 weeks gestation (as recommended by NICE).
4. Consider business case for further transcutaneous bilirubinometer usage.
5. Re-audit of progress in 12 months' time.

KEY WORDS: neonatal jaundice, bilirubin, hyperbilirubinaemia , phototherapy, NICE guidelines, audit

TABLES:
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ABSTRACT ID: 093

Severe Autosomal Recessive Form of Hydrocephalus: a Case Report

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INTRODUCTION: Hydrocephalus is defined as an increase in the cerebral ventricular size and/or subarachnoid space. It is caused by an imbalance between the production, circulation and resorption of cerebrospinal fluid (CSF). Congenital hydrocephalus, most commonly involving aqueduct stenosis, has been linked to genes that regulate brain growth and development.

We report a case of a recurrent non-syndromic hydrocephalus

MATERIALS&METHODS: Case report:

Newborn H.L is a result of a second degree marriage, born to a 41 year-old healthy mother 4th gravida 2nd para. She had a first female baby born in 2008 with a congenital non-syndromic hydrocephalus, still alive with frequent seizures. The second pregnancy was medically interrupted in 2011 because of an important hydrocephalus but the autopsy of the fetus was not performed. Then mother had an early miscarriage in 2014. Our patient HL was diagnosed with hydrocephalus in the 22th week's gestation but the parents refused the interruption of pregnancy. An amniocentesis was performed showing a normal karyotype 46 XY. The baby was born at 36 WA, with a birth weight of 4400g. The physical examination showed a very large head circumference measuring and a sunset eye sign with correct neurological features. The cranial ultrasound showed a quadri-ventricular hydrocephalus. The cranial tomodensitometry showed laminated brain parenchyma .The patient was proposed to the neuro-surgery section for a palliative external ventricular derivation.

CONCLUSIONS: Non syndromic genetic hydrocephalus is a rare affection that appears to have a poor outcome.. Further findings are required to elucidate the genetic bases of this disease.

KEY WORDS: hydrocephalus , neonate , autosomal , cranial ultrasound

ABSTRACT ID: 095

The Modern Therapy of Pulmonary Hypertension In Newborns with Congenital Diaphragmatic Hernia in Perinatal Center

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INTRODUCTION: Study the effectiveness of therapy pulmonary hypertension (PH) in the group of infants with congenital diaphragmatic hernia (CDH).

MATERIALS&METHODS: During the period from 2010 to 2015 in the department of neonatal surgery FSBI "Research Center for Obstetrics, Gynecology and Perinatology" Ministry of Healthcare of the Russian Federation treated 102 infants with CDH.

All infants in the first 6 hours after birth echocardiography was performed. In 42 children diagnosed with PH. The degree of PH distribution by pressure level at LA - subsystem PH 12 children (28%), system PH 5 (12%), suprasystem PH 25 (60%). All children underwent complex therapy is PH, including strict medical protective regime, respiratory therapy, cardiotonic therapy. In the group with subsystem PH, vasodilators therapy was not carried out, all the children survived. In the group with systemic and suprasystem PH used a first-line drug nitric oxide (NO) and subsequent titration of oral sildenafil. Duration of inhalation NO 6,0±2,2 days, dose 22,7±5,4 ppm, sildenafil length - 47,5±12,5 days, dose 2,8±1,4 mg/kg/day. Mortality in these groups were respectively 1 (23%) and 11 (44%) children. Under suprasystem PH in 12 newborns resistance to treatment with NO, therefore applied alternative vasodilators - alprostadil in 12 infants, bosentan at 8, prostacyclin at 2. In 4 cases with intractable PH crises connected to VA ECMO.

CONCLUSIONS: The use of the combined therapy of PH in newborns with CDH in a perinatal center with modern vasodilators possible to reduce mortality in children with system and suprasystem PH.

KEY WORDS: pulmonary hypertension, congenital diaphragmatic hernia

ABSTRACT ID: 096

Epidural Anesthesia as Part of The Treatment of Pulmonary Hypertension in Infants With Congenital Diaphragmatic Hernia

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INTRODUCTION: Assess epidural analgesia (EA) in the postoperative period in newborns with congenital diaphragmatic hernia (CDH) as part of the treatment of pulmonary hypertension.

MATERIALS&METHODS: For the period 2015 - 2016 a prospective analysis of the 25 patients with CDH at the age of 3 hours up to 21 days of life, a gestational age of 36 to 38.5 weeks in the department of neonatal surgery FSBI "Research Center for Obstetrics, Gynecology and Perinatology" Ministry of Healthcare of the Russian Federation. For the purpose of post-operative pain relief to children in the first days of life was placed epidural catheter Bbraun (needle 20G, catheter 24G) of the lumbar access (L3-L4) to a depth of 6.5±0.8 cm. In addition to the standard set of studies conducted ultrasonic testing children posing epidural catheter. Ultrasound was performed on the unit Siemens ACUSON S2000 using a linear encoder. We estimate the location and depth of the state of the catheter. The duration of the procedure was 144 ± 20 maximum hours.

It was found that all the children who received EA decreased the need for necessary use of narcotic analgesics (fentanyl, morphine) by 37% during surgery and at 78% in the postoperative period. All children received the standard complex therapy of pulmonary hypertension - inhalation of nitric oxide 15.8 ± 3.6 ppm and sildenafil orally at a dose 2.1 ± 0.9 mg/kg/day. In the group of children who received postoperative prolonged EA, a marked decrease in pulmonary artery pressure at 26,8 ± 5,7 mm Hg. Also in this group there is a decrease in the need for a ventilator 3,8 ± 0,7 days.

CONCLUSIONS: The use of the extended EA in the postoperative period in newborns with CDH in the complex therapy of pulmonary hypertension reduces the degree of pulmonary hypertension of 45.8% compared with standard therapy.

KEY WORDS: pulmonary hypertension, epidural analgesia, congenital diaphragmatic hernia

ABSTRACT ID: 098

Frequency of Cakut in Term Healthy Infant with Antenatal Pelvic Dilatation: a Single Center Experience

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INTRODUCTION: Objective: to examine the association of antenatal pelvic dilatation detected on midtrimester ultrasound screening with the presence of CAKUT in healthy newborn infant.

MATERIALS&METHODS: Materials and method: term healthy infant with diagnosis of antenatal pelvic dilatation (PD) on midtrimestrer ultrasound and with postnatal evaluation in peadiatric nephrology office in Ascoli Piceno Hospital from January 2012 to December 2015 were retrospectively reviewed. According to antenatal hydronephrosis grading of Society For Fetal Urology, unilateral and or bilateral fetal renal pelvic anterior-posterior (AP) diameter > 9 mm was considered abnormal and two subgroup were identified. Postnatal ultrasound was performed 7 days to 1 month old

Results: 53 cases with antenatal renal pelvic dilatation were studied: 30 male (56, 4%) and 23 female 43,4%); 29 (55%) cases had renal pelvic AP < 9 mm (subgroup 1) and 24 (45%) had renal pelvic AP > 9 mm (subgroup 2). Post natal pyelocaliceal dilatation was found in 29 infant (54 %): 9 (31%) in subgroup 1 and 21 (87,5%) in subgroup2. CAKUT was diagnosed in one infant (3,4%) in subgroup 1 and in 11 infant (46%) in subgroup 2. The abnormalities detected were hydronephrosis, vescico–ureteral reflux, duplex collecting system, megaureter, uretero-pelvic junction obstruction in descending order of frequency.

CONCLUSIONS: Conclusion: Kidney and urinary tract anomalies can be accurately diagnosed and classified in the antenatal period using ultrasound screening. A mild antenatal hydronephrosis on midtrimester ultrasound screening is predictive of postnatal pyelocaliceal dilatation and or CAKUT and help in establishing post natal care to reduce or delay the progress of kidney damage.

KEY WORDS: TERM INFANT, CAKUT, ANTENATAL PELVIC DILATATION

ABSTRACT ID: 099

Neonatal Patients in the Paediatric Intensive Care: the Neonatal Checklist

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INTRODUCTION: The neonatal population admitted to paediatric intensive care is a unique one with their own individual issues, diagnostic complexities and management particulars. Neonatal patients often require routine referrals, investigations and interventions that are not necessarily pertinent to their acute management in intensive care. These issues are however important to the overall holistic approach to the patient and will undoubtedly be important in their future long-term management. Observational practice within paediatric intensive care suggests that when neonatal patients are managed outside the traditional neonatal unit these issues are not always in the forefront of peoples' minds and investigations or referrals are easily overlooked. Given these observations we felt it necessary to look at the neonatal population within the paediatric intensive care setting and adopt a failsafe way of ensuring no aspects of management were missed. We felt the ideal way of the clinical team avoiding this were to compile a neonatal checklist.

MATERIALS&METHODS: A neonatal checklist was complied with local, regional and national guidelines in mind and details four main areas of neonatal management: growth parameters, screening and investigations, immunisations and multidisciplinary referrals. The checklist was introduced into the paediatric intensive care with it being included in all neonatal patients notes upon admission. Both medical and nursing staff have been engaged in the introduction of the checklist and all have responsibility for completing the checklist. It has been designed to be reviewed on a regular basis, routinely on ward rounds.

CONCLUSIONS: The introduction of the neonatal checklist into the paediatric intensive care setting represents an important improvement in the care of neonatal patients outside a specialised neonatal unit. With the introduction of this checklist we are ensuring that no aspects in the management of the neonatal patient are overlooked or neglected. It ensures a safe, effective and patient centred approach to management that can be adopted through various areas of clinical paediatric care.

KEY WORDS: neonatal, paediatric intensive care

TABLES:
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ABSTRACT ID: 100

The Secret of Success of Non-Invasive Ventilation Among Preterm Infants Compared with Cpap

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INTRODUCTION: It still remains unclear whether non-invasive ventilation is more effective than nasal CPAP in premature infants. Short inspiratory time can lead to ineffectiveness of non-invasive ventilation when device with open exhalation circuit such as Infant Flow SiPAP is used in Biphasic mode. Optimal inspiratory time could compensate circuit leakage and improve the efficiency of non-invasive ventilation

MATERIALS&METHODS: Three modes of non-invasive respiratory support of Infant Flow SiPAP were evaluated in prospective comparative trial.148 premature babies born at 25-35 weeks were included. After initial stabilization in delivery room they were randomized immediately after admission to our NICU and divided into three groups. 48 newborns formed group 1 where BiPhasic mode with inspiratory time 1sec and frequency 30 was used. 43 newborns formed group 2 BiPhasic mode with insp time 0,5 second and frequency 60 per minute. Group 3 included 57 premature babies on CPAP mode with peep 5-6cm H2O. Mean airway pressure was similar on BiPhasic groups 1 and 2. Incidents of non-invasive support failure were evaluated. The failure criteria were the increase of FiO2>0,4 (FiO2> 0,3 for babies <1000g) and/or increasing of severe respiratory distress, hard work of breathing equivalent to more than 3 points by Silverman scale. In case of start respiratory support failure babies were switched to higher level of respiratory support

CONCLUSIONS: In Group 1, where the respiratory therapy was provided by BiPhasic mode with inspiratory time of 1 second, the criteria of failure were met significantly two times less than in Group 2 and Group 3: 25% vs 58% vs 53% p = 0,0006. Respiratory support failures in group 2 and 3 were similar.

CONCLUSION: Infant Flow SiPAP on BiPhasic mode has advantage over CPAP when insp time is about 1 second to compensate the leakage and create an optimal peak inspiratory pressure. BiPhasic mode with inspiratory time 0.5 sec or less has the same efficiency as CPAP mode and has no advantages over CPAP

KEY WORDS: Infant Flow SiPAP, Non-invasive respiratory support, Premature babies, Inspiratory time, CPAP, BiPhasic

TABLES:
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ABSTRACT ID: 101

Laboratory Parameters of Blood Coagulation and Platelet Functional Activity in Premature Neonates

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INTRODUCTION: Premature birth is associated with significant risks of mortality and morbidity due to hemorrhage and thrombosis. However, the status of hemostatic system in premature neonates is very poorly known, and almost all data are obtained with cord blood.

MATERIALS&METHODS: We characterized platelet-dependent hemostasis and blood coagulation in blood samples from four premature (33-34 weeks gestation) neonates at the 1st and 3rd days after birth. All patients received heparin at 50 units/kg/per day. Venous blood was collected into sodium citrate. Platelet functional activity was characterized by flow cytometry before and after activation with SFLLRN and collagen-related peptide. Levels of CD42b, CD61, CD62P, PAC1, annexin V binding, and mepacrine release were determined. Blood coagulation was characterized using thrombodynamics assay.

CONCLUSIONS: Our results indicate essential hypercoagulation and severe deficiency of platelet function in all premature neonates involved in our case series. These changes are sufficiently significant to be possibly associated with bleeding and thrombotic risks. Flow-cytometry-based characterization of platelets and integral assays of blood coagulation could be sensitive to the disturbances of hemostasis in neonates, and their further clinical utility should be evaluated in further trials with clinical outcomes.

The study was supported by the RFBR grants 15-34-70014 and 15-54-45036

KEY WORDS: hemostasis, preterm neonates, platelets, thrombodynamic, coagulation

ABSTRACT ID: 102

Implementation of a Standardized Enteral Feeding Protocol, Including Accelerated Rate of Feeding Advancement, Improves Short-Term Outcomes in Vlbw Infants

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INTRODUCTION: Optimal regimen of enteral feeding initiation and advancement after birth in VLBW infants, including very premature and growth restcicted babies, is still under debates.

The objective of our study was to compare short-term efficacy and safety of standardized enteral feeding protocol, including early initiation of feeds, preference of oral colostrum and own mothers unpasterized breast milk as a substrate and accelerated feeding advancement rates in VLBW infants (including very premature and growth-restricted babies).

MATERIALS&METHODS: This was a prospective single center study with retrospective historical control (before vs after comparison), performed in Federal State Scientific Center for Obstetrics, Gynecology and Perinatology by V.I.Kulakov, Moscow, Russia between September 2014 and April 2015. In September 2014 a new feeding protocol was implemented. Basic principles of this protocol were standartisation of feeding initiation, use of colostrum and breast milk from first hours of life if availible, defining initial single-feed volumes and advancement rates according to bithweight and clinical condition of the baby. The main difference of new protocol from previuosly used was accelerated advancement of feeding volumes.

53 patients were included. 24 infants in the prospective group were compared with 29 infants in the retrospective control group, treated before the implementation of new protocol between April 2014 and September 2014.

Multiple outcome measures were evaluated: time to 100 ml/kg enteral feeding, time to full enteral feeds, duration of antibiotic treatment, duration of IV central and peripheral catheters indwelled, incidence of any stage necrotizing enterocolitis (NEC) and surgical NEC. Data are presented as medians (range). Fisher's exact and Mann–Whitney U-tests were used. Statistical analysis was performed with STATISTICA 8 software.

Infants in progressive advancement enteral feeding group reached the enteral volume of 100 ml/kg 5 days faster than controls. Statistically significant improvements were seen in other outcome measures: duration of central venous catheters inserted were 5 days shorter and duration of peripheral venous acsess was 2-fold less in progressive advancement group. Broad-spectrum2-nd line antibiotics, reserved for nosocomial infections, were used 1,5 times less and the diagnosis of any stage (NEC) was seen 3,3 times rarely in the main study group, than in controls. One case of surgical NEC occurred in the slow advancement group and no surgical cases were registered in the standardized progressive group.

CONCLUSIONS: A standardized approach to nutrition in VLBW infants, including accelerated rate of feeding advancement, shortens time to full enteral feeds, reduces the use of parenteral nutrition (PN) thereby reducing costs and risk of nosocomial infection. This could potentially contribute in reduction of infant morbidity and mortality, caused by late onset bloodstream infections and other neonatal complications, related to prolonged use of parenteral nutrition. No significant increase in NEC was seen in our study. Due to the small sample size, results must be cautiously extrapolated to the whole population of VLBW infants, especially on those of highest risk of NEC and feeding intolerance: extremely premature and growth-restricted babies. Further research is needed.

KEY WORDS: infant, very low birth weight, enteral feeding, short-term outcome

TABLES:
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ABSTRACT ID: 103

Persistent Fetal Circulation Occurring in Neonatal Acute Myeloid Leukaemia

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INTRODUCTION: Neonatal leukaemia is rare, with a high mortality rate and many associated complications. This case describes an infant with neonatal acute myeloid leukaemia (AML), who developed severe persistent pulmonary hypertension of the newborn (PPHN).

MATERIALS&METHODS: A male neonate was born at 37 weeks gestation via emergency Caesarean Section due to abnormal CTG and reduced fetal movements. At delivery he was noted to have widespread petechiae, ecchymoses and 'blueberry muffin' cutaneous nodules, with hepatosplenomegaly, tachypnoea and cyanosis (Figure 1) . There were no clinical features of trisomy 21.

He had severe cyanosis and low oxygen saturations despite continuous positive airway pressure with FiO2 100%, and therefore required intubation in the delivery suite. The baby was transferred to the neonatal unit, and quickly developed a high oxygen requirement, despite maximal ventilation settings on high frequency oscillatory ventilation, inotropes and intravenous fluid. Initial peripheral blood film showed hyperleucocytosis (WCC 420 X 109/litre) with a high blast count (96%). Flow cytometry revealed myeloblasts in keeping with a diagnosis of acute myeloid leukaemia.

Due to active bleeding he was given packed red cells, fresh frozen plasma, vitamin K and cryoprecipitate. Chest xray showed bilateral pleural effusions, with pulmonary infiltrates . An echocardiogram was performed which was in keeping with persistent pulmonary hypertension of the newborn (PPHN).

Proposed initial management strategies included exchange transfusion to reduce the hyperviscosity associated with the hyperleucocytosis, followed by hyperhydration, rasburicase and ADE chemotherapy. However due to the severity of the PPHN and hypotension, he was too unwell for exchange transfusion to be performed, and he passed away at 7 hours old before chemotherapy could be initiated.

CONCLUSIONS: This case illustrates an association between PPHN and neonatal leukaemia. The proposed mechanism of this is via both pulmonary infiltrates and hyperviscosity, leading to right to left shunting through the patent ductus arteriosus. The presence of PPHN is an additional challenge to the initial stabilisation and management of such patients.

KEY WORDS: neonatal leukaemia AML PPHN

FIGURES:
https://www.eiseverywhere.com/eselectv2/backendfileapi/download/105597?id=a%2Fn4N4EHtes%3D

ABSTRACT ID: 104

The Role of Debrief in a Tertiary Neonatal Intensive Care Unit

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INTRODUCTION: Debrief after resuscitation is beneficial for improving outcomes following resuscitation and can also be an opportunity to provide learning, feedback and emotional/psychological support for the team involved. Despite these benefits, debrief is not routinely performed following neonatal resuscitations/deaths. Our aim is to explore the opinions of the medical and nursing team regarding the role of debrief in a tertiary neonatal unit

MATERIALS&METHODS: An online survey of neonatal consultants, junior doctors and nursing staff was conducted to explore the role of debrief following neonatal deaths/resuscitations in a tertiary neonatal unit. All respondents stated that they thought debrief was beneficial following a neonatal death/resuscitation, but not all had been involved in formal or informal debriefing. Many benefits of debrief in the neonatal setting were acknowledged, including clinical learning, psychological/emotional support and working well as a team. There were a variety of views on who should lead the debrief, including clinical psychologist, consultants and senior trainees. The preferred timing of the debrief also received varied responses including: immediately after the event, within 1 day of the event or up to 1 week following the event.

CONCLUSIONS: This survey illustrates a positive view of debrief amongst the neonatal multidisciplinary team, with the majority of staff seeking to be involved in debriefing. As a result of these findings, we intend to set up a regional protocol for regular debrief of the multidisciplinary team following neonatal deaths/resuscitations in the neonatal unit.

KEY WORDS: neonatal NICU debrief supporting teamwork

ABSTRACT ID: 105

Outcomes Of Newborns Born By Mothers With Early Onset Severe Preeclampsia

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INTRODUCTION: Preeclampsia a severe condition which complicates pregnancy in 2-8% of cases and doesn't have the downward trend and plays the leading role in maternal and perinatal mortality. Early onset preeclampsia develops between 24-34 weeks of gestation and significantly differs from late onset preeclampsia by the severity and time of prolongation.

The aim of this study was to analyze the health of newborns from mothers with early onset severe preeclampsia.

MATERIALS&METHODS: We analyzed the health of 15 newborns in mothers with early onset severe preeclampsia. The 1 group contained 8 children with intrauterine growth restriction (IUGR) and the 2 one was created from 7 newborns without signs of IUGR. The complex assessment of newborns' health contained physical, clinical and laboratory studies.

RESULTS: All children in both groups were born prematurely. The average gestational age in groups was 30,13 ± 2,59 and 33,14 ± 1,95 weeks, respectively. The main reason for the preterm delivery in the 1 group was fetal distress diagnosed by functional methods and in the 2 group – worthening of preeclampsia symptoms. In the analysis of anthropometric data the average value of the newborns' weight was 1041,75±388,54 g in the 1 group and 1778,57±474,87 g in the 2 one. The median Apgar score in the 1 group on the 1 minute was 6,5±0,8, on the 5 minute – 7,3±0,8, in the 2 group – 7,3±0,5 on the 1 minute and 8,3±0,5 on the 5 minute. The duration of treatment in the intensive care unit was 8,9±7,3 days in the 1 group and 31,6±27,9 in the 2 one.

The respiratory support by various methods (NCPAP, BIPHASIC, conventional mechanical ventilation) was performed in all newborns from the 1 group and in 85% (6 children) - in the group 2.

CONCLUSIONS: The morbidity of newborns from mothers with early onset severe preeclampsia is associated with gestational age in preterm delivery, morphological and functional immaturity and prematurity. Thus, further studies of childrens' health born from mothers with early onset severe preeclampsia are required to optimize the management of pregnancy and its prolongation.

KEY WORDS: newborn,preeclampsia,preterm delivery,prematurity

ABSTRACT ID: 106

Outcomes of Newborns Born by Mothers with Cancer

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INTRODUCTION: Women of reproductive age more often suffer from lymphomas and breast cancer, and sometimes the onset of the disease is diagnosed during pregnancy. In women with pregnancy associated breast cancer (PABC) and active lymphomas, chemotherapy during pregnancy involves the same modes as in the treatment of nonpregnant women.

OBJECTIVE: The aim of this study was to analyze the health of newborns from mothers with PABC as well as with lymphomas during chemotherapy (CT).

MATERIALS&METHODS: We analyzed the health of 100 newborns in mothers with lymphomas (Hodgkin lymphoma, Non-Hodgkin lymphoma) and with PABC. The 1 group consisted of 69 children whose mothers received CT during pregnancy, 2 group contained 31 newborns whose mothers did not receive CT during pregnancy. The complex assessment of newborns' health contained physical, clinical and laboratory studies.

RESULTS: In the 1 group 28 (40,6 %) children were born prematurely, in the 2 – 19 (61,3%) children were born preterm. The average gestational age in groups was 35,74±0,27 and 35,75±0,48 weeks, respectively. In the analysis of anthropometric data the average value of the newborn weight was 2665,55±90,19 g in 1 group and 2734,04±140,42 g in the 2 group. The 1 group contained 14 (20,3 %) children born in the asphyxia, while in the 2 group there were 9 (29,0%) of them. The 2 group contained 1 child (3,2 %) born with pulmonary atelectasis. The most often respiratory diseases in children were: respiratory distress syndrome (RDS) (in 15,9% and 22,7% cases – in the 1 and 2 groups respectively), congenital pneumonia (in 17,4% and 16,1% cases), transient tachypnea (in 2,8% and 12,9% cases), bronchopulmonary dysplasia (in 2,9% and 3,2% cases). Fetal growth restriction was diagnosed in 1 (1,4%) child in the 1 group. Hemorrhagic syndrome was presented only in the 1 group: cutaneous hemorrhagic syndrome - in 1 case (1,4%), subependymal hemorrhage – in 1 (1,4%), intraventricular hemorrhage grade I – in 1 (1,4%). The analysis of blood gases was performed. It was found that the mean pH in the 1 group was 7.27 ± 0.03, in the 2 group - 7.30± 0.01. The use of surfactant therapy was made in 3% of cases in the 1 group and in 9,1 % of cases in the 2 group. The respiratory support by various methods (NCPAP, BIPHASIC, conventional mechanical ventilation) was performed in the 1 group in 33,3% cases, in the 2 group – in 41 %. The cardiovascular system study showed one child with open oval window and other - with atrial septal aneurysm in the 1 group.

Among CNS examinations there were 2 cases of subependymal cysts in the 1 group, the syndrome of CNS depression in 2 cases in the 2 group. One child from the 1 group developed gastric bleeding. Congenital malformation was diagnosed in 1 (1,4%) newborn in the 1 group. There were no statistically significant myelosuppression signs in both groups (p> 0.05).

CONCLUSIONS: The morbidity of newborns from mothers with lymphomas and PABC with and without treatment during pregnancy is associated with preterm delivery, morphological and functional immaturity and prematurity. Thus, further studies of childrens' health whose mothers received chemotherapy are required to optimize the management of pregnancy and reduce the incidence of premature delivery without worsening prognosis for the mother.

KEY WORDS: pregnancy, newborn, Hodgkin lymphoma, non-Hodgkin lymphoma, breast cancer, chemotherapy

ABSTRACT ID: 107

New Approach Of Intensive Care Of Very Premature Babies. Results Of Introduction

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INTRODUCTION: In 2014 we implemented new approach of first day stabilization of preterm babies. Sustained inflation followed by prolong CPAP instead of intubation or mask ventilation, less invasive surfactant administration if necessary, non-invasive ventilation after surfactant instead of CPAP, volume control instead of pressure control ventilation if necessary, cord milking and colostrum within first hours, tolerance approach for PDA treatment within first days are the most important keys of new approach.

MATERIALS&METHODS: We evaluated and compared respiratory support, survival and outcomes among 116 preterm babies: 47, 33, 36 babies 24-29 week gestation admitted to our NICU in 2013,2014 and 2015 respectively.

CONCLUSIONS: On non-invasive respiratory support from birth were 41,6%,72,2%,70,2% 24-29 week gestation babies in 2013, 2014 and 2015 years respectively. Among starters with non-invasive support 26,6%, 34,6%,21,2% of babies required mechanical ventilation within first 5 days of life in 2013,2014,2015 respectively. Poractant alfa required 83%,84% and 76% of 24-29 week gestation babies in 2013, 2014 and 2015 yrs respectively. Survival of 24-26 g. week babies was: 55,5%, 80% and 75% in 2013, 2014 and 2015respectively. Survival of 27-29 g. week babies was:77,7%, 92,8% and 96,7% in 2013, 2014 and 2015respectively. IVH 2-3 among 24-26 had 0 in 2013, 40% (2 babies)in 2014 and 25%(2 babies)in 2015(In 2015 were IVH2 only). IVH 2-3 among 27-29 had 9,5% in 2013, 7,6% in 2014 and 6,6% in2015. 24-26 weekers had BPD 40%(2 babies) in 2013, 50%(2 babies) in 2014, 50%(6 babies)in 2015. 27-29 weekers had BPD 14,2% in 2013, 7,7% in 2014, 3,3% in 2015. ROP (laser coagulation) had zero in 2013, 6,6% in 2014, 4,7% in 2015 among babies 24-29 week. New protocol led to less mortality among very prematures, however increasing of survival 24-26 g. week babies led to higher rates of adverse outcomes, as anticipated. Conversely, the increase of survival 27-29 week gest. babies is accompanied by the decrease of adverse outcomes. New protocol significantly improved outcomes among the most tiny babies

KEY WORDS: Sustained inflation, CPAP, premature babies, surfactant, non-invasive ventilation, PDA,

TABLES:
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ABSTRACT ID: 114

Comparisons of Clinical Characteristics Affecting Readmission between Late Preterm Infants and Moderate Preterm Infants or Full-term Infant

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INTRODUCTION: Purpose: Late preterm infants accounted for 71.4 % of all preterms infants and outcomes of these infants were known to be poor as compared to term infants but favorable to moderate- preterm infants. We aimed to describe the differences of clinical characteristics affecting readmission between late preterm infants and moderate-preterm infants or full-term infants.

MATERIALS&METHODS: The medical records were reviewed for 938 patients with more than 31 weeks of gestational age who admitted to neonatal intensive care unit (NICU) or nursery at Inje University Sanggye Paik Hospital from January 2013 to December 2015. We investigated readmission and ER visits during 1 year after discharge

RESULTS: Nine hundred thirty-eight infants were collected as group of full-term infants (n=677), late preterm infants (n=180) and moderate-preterm infants (n=81) respectively. The rate of re-hospitalization was 16.2% in full-term infants, 18.9% in late preterm infants and 22.2% in moderate-preterm infants. Hospital stays of readmission are 9.71 days in late-preterms and 6.31 days in full-terms(p-value 0.003). Frequency of readmission of late preterm is higher than full-terms (0.311, 0.195, respectively, p-value 0.039) Proportion of ER visits was 28.4 % in moderate-preterms, 21.7% in late preterms and 18% in full-terms. Air-leak syndrome and abnormal white blood cell count of initial admission are independent risk factors in full-terms for re-hospitalization [odds ratio (OR) 4.452, 5.352; 95% confidence interval (CI) 1.334-14.856, 1.523-18.813; P-value 0.015, 0.009, respectively]. Presence of NICU admission, need of oxygen apply and duration of initial hospital stays are independent risk factors in late preterm for readmission (OR 2.755, 3.056 and 1.059; 95% CI 1.251-6.067, 1.414-6.602,1.007-1.112 P-value 0.012. 0.004, and 0.024, respectively). And history of positive pressure ventilation at birth is risk factor of readmission in moderate-preterms (OR 5.300, 95% CI 1.687-16.650, P-value 0.004). The only protecting factor is the human milk feeding in full-term (OR 0.67, 95% CI 0.429-1.045, P-value 0.078).

CONCLUSIONS: There was statistically significant difference between the late preterm and full-terms in re-admission duration and frequency . Independent risk factors for re-hospitalization of late preterm infants are duration of initial hospital stays, presence of NICU admission and need of oxygen apply.

.012. 0.004, and 0.024, respectively). And history of positive pressure ventilation at birth is risk factor of readmission in moderate-preterms (OR 5.300, 95% CI 1.687-16.650, P-value 0.004). The only protecting factor is the human milk feeding in full-term (OR 0.67, 95% CI 0.429-1.045, P-value 0.078).

There was statistically significant difference between the late preterm and full-terms in re-admission duration and frequency . Independent risk factors for re-hospitalization of late preterm infants are duration of initial hospital stays, presence of NICU admission and need of oxygen appl

KEY WORDS: Late Preterm Infants, Readmission, Neonatal intensive care unit, Oxygen

ABSTRACT ID: 115

Paths of Causal Influence from Prenatal Inflammation and Preterm Gestation to Childhood Asthma Symptoms

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INTRODUCTION: Long-lasting respiratory symptoms have a huge impact on the quality of life in prematurely born children. The aim of the present study was to investigate paths of assumed causality leading from Foetal Inflammatory Response Syndrome (FIRS) to asthma symptoms in formerly preterm infants.

MATERIALS&METHODS: This is a prospective cohort study, with demographic, antenatal, delivery and outcome data collected from 262 infants with less than 32 completed weeks of gestational age, in over a 10-year period. The primary outcome measure was the presence of symptoms of asthma beyond the age of 5 years.

CONCLUSIONS: Results: our findings and a graphic representation of the path flows are depicted in Fig.1. FIRS (OR 4.7) and subsequent chronic lung disease (CLD) (OR 7.7) and early childhood wheezing (ECW) (OR 9.5) were the most important risk factors for development of asthma symptoms in children born with less than 32 weeks of gestational age. The path analysis showed that FIRS has a large direct (0.59), medium indirect (0.11) and large overall (0.70) effect on CLD; large negative direct effect on ECW (-0.34) and a large positive indirect effect (0.74), mediated by CLD. On the occurence of asthma symptoms, FIRS has a medium negative direct effect (-0.18) and a medium positive indirect effect (0.26), mediated by CLD and ECW.

Our study suggests that prenatal inflammation plays an important role in the development of chronic respiratory disturbances in preterm infants. We speculate that this influence is mainly related to structural and developmental lung abnormalities initiated in utero as a consequence of FIRS, resulting in CLD of prematurity, and overcoming the protective mechanisms of chorioamnionitis. The long term effect of foetal inflammation is actually mediated by CLD, leading to childhood wheezing and asthmatic phenotype.

The path analysis for presumed causal relationships in the development of asthma symptoms has provided additional insights toward understanding the complex pathogenetic mechanisms and identifying high-risk infants.

ABSTRACT ID: 116

Early-Onset Thrombocytopenia in Small-For-Gestational-Age Neonates: a Retrospective Cohort Study

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INTRODUCTION: Background: Thrombocytopenia is a common finding in small for gestational age (SGA) neonates and is thought to result from a unique pathophysiologic mechanism related to chronic intrauterine hypoxia.

Objective: to estimate the incidence and severity of early-onset thrombocytopenia in SGA neonates, and to identify risk factors for thrombocytopenia.

MATERIALS&METHODS: Methods: We performed a retrospective cohort study of all consecutive SGA neonates admitted to our ward, and we compared them with a control group of appropriate for gestational age (AGA) neonates matched for gestational age at birth. Main outcome measures were incidence and severity of thrombocytopenia, hematological and clinical risk factors for thrombocytopenia, and bleeding.

CONCLUSIONS: Results: A total of 330 SGA and 330 AGA neonates were included, with a mean gestational age at birth of 32.9 ± 4 weeks. Thrombocytopenia (<150x109/L) was found in 53% (176/329) of SGA neonates and 20% (66/330) of AGA neonates (relative risk (RR) 2.7, 95% confidence interval (CI) [2.1, 3.4]). Severe thrombocytopenia (21-50x109/L) occurred in 25 neonates (8%) in the SGA and 2 neonates (1%) in the AGA group (RR 12.5, 95% CI [3.0, 52.5]). Platelet counts <20x109/L were not recorded. Within the SGA group, lower gestational age at birth (p=<0.01) and erythroblastosis (p<0.01) were independently associated with decreased platelet counts, and these last positively correlated with birth weight centiles.

Conclusions: Early-onset thrombocytopenia is present in over 50% of SGA neonates and occurs 2.7 times as often as in AGA neonates. Thrombocytopenia is seldom severe and is independently associated with lower gestational age at birth and erythroblastosis

ABSTRACT ID: 117

Thrombocytopenia in neonatal sepsis due to Gram-negative versus Gram-positive bacteria

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INTRODUCTION: Objectives: To estimate the incidence and severity of thrombocytopenia during neonatal sepsis, comparing sepsis caused by Gram-positive and Gram-negative bacteria. N27:Q27

MATERIALS&METHODS: Methods: A cohort study was carried out among all neonates with proven sepsis diagnosed through positive blood culture that were admitted to a tertiary neonatal intensive care unit (NICU) in the Netherlands between 2006 and 2015. The occurrence and severity of thrombocytopenia was recorded, as well as platelet counts, clinical course, major bleedings and potential risk factors for thrombocytopenia.

Results: Sepsis was diagnosed in 461 of 6551 neonates (7%) admitted to the NICU. A Gram-positive bacteria was found in 420 (91%) septic neonates compared to 41 (9%) Gram-negative bacteria. Thrombocytopenia (<150109/L) was detected in 224 (49%) of the 461 septic neonates. In Gram-positive sepsis, 47% (197/420) of the neonates showed thrombocytopenia, compared to 66% (27/41) of those with Gram-negative sepsis (p=0.021). Severe to very severe thrombocytopenia (≤50109/L) was found in 39% (16/41) of neonates with Gram-negative sepsis, compared to 19% (76/420) of neonates with Gram-positive sepsis (p=0.001)

CONCLUSIONS: Conclusions: The risk for development of thrombocytopenia is more than two-fold increased in Gram- negative sepsis compared to Gram-positive sepsis. In our study, a linear association was found between the severity of thrombocytopenia and the occurrence of Gram-negative sepsis.

Gram-negative sepsis is a strong independent risk factor for thrombocytopenia in septic neonates.

ABSTRACT ID: 118

Early Hyperglycaemia and Risk of Infections in Preterm VLBW Infants in NICU: Data From a Multicenter, Randomized, Placebo-controlled Trial

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INTRODUCTION: Hyperglycaemia in the early days of life has been occasionally reported as a possible risk factor for development of Candida infections in preterm ELBW neonates. Additonal data are needed to assess the relationships between early hyperglycaemia and late-onset sepsis in preterm neonates.

Objective: This is a secondary analysis of data from a multicenter RCT in Italy and NewZealand, whose original protocol was previously published. The trial aimed at assessing effectiveness of bovine lactoferrin (LF) supplementation (100 mg/day, alone or in combination with the probiotic LGG [106 CFU/day] vs. placebo) in prevention of late-onset sepsis (Manzoni et al, JAMA 2009) and NEC (Manzoni et al, EHD 2014) in VLBW infants. We tested the hypothesis that early (within the 5th day of life) hyperglycaemic (>200 mg/dl) spells can be associated with the occurrence of proven late-onset infections in preterm VLBW neonates.

MATERIALS&METHODS: Design/Methods: We analyzed the data of all infants enrolled in the RCT, and then separately for treatment groups (LF vs.placebo). Per the original protocol, daily surveillance and monitoring of glycaemia levels were performed and recorded. Management of hyerglycaemia followed institutional protocols and clinical judgement of attending physicians.

Multivariable logistic regression was performed to assess whether hyperglycemia was associated with late-onset culture-proven infections, and separately with infections by Gram-positives, -negatoves and fungal agents.

CONCLUSIONS: Results: Among 740 VLBW infants enrolled, 86 featured at least an episode of microbiologically confirmed late-onset infection, and 34 had at least one episode of early hyperglycaemic spell recorded. After controlling for all variables significantly associated with infections (i.e., LF exposure, birth weight, gestational age), occurrence of at least one episode of early hyperglycaemic spell retained a significant and independent association with the occurrence of infections only by Gram-positives (OR. 5.45; 95%C.I. 1.92-15.42;p<0.001) and fungal agents (OR 3.37; 95%C.I. 1.01-11.97;p=0.04), but not by Gram-negatives.

Of note, the day of onset of infections occurred significantly earlier in hyperglycaemic infants compared with normoglycaemic: 13.9 mean days vs 20.1 (p= 0.03), regardless of the pathogen.

Conclusions: Early hyperglycaemic spells are significantly predictive of development of LOS by Gram-positives and fungal microorganisms in preterm infants. Prophylactic strategies and reinforced monitoring should be addressed to these infants.

ABSTRACT ID: 119

Randomized Pharmacokinetic Study of Fluconazole and Micafungin in Preterm Neonates with Suspected or Proven Fungal Infection

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TINN consortium.

INTRODUCTION: Introduction. Neonatal Candida infection requires urgent treatment because of high risk disease with possible central nervous system infection. Fluconazole prophylaxis is recommended in NICUs with a high incidence in fungal infections. Both fluconazole and micafungin are used for treatment in preterm and term

neonates with proven or only suspected fungal infection, as candida infection is difficult to prove. Although fluconazole dose recommended in the marketing authorization is 6 mg/kg/day in neonates, maintenance doses currently used in NICUs in Europe is often higher, between 6 and 12 mg/kg. For Micafungin, the available data support the idea that only dosages greater than recommended (2 to 4 mg/kg/day) may ensure adequate coverage of the CNS. The drug-exposure target recommended for fluconazole is at least 400 mghr/L and for micafungin is at least 166.5 mghr/L. In this context, the current study is designed to further elucidate the pharmacokinetics of the two drugs in preterm neonates.

MATERIALS&METHODS: Methods. Drug dosages were administered as 2h infusion: fluconazole: 25mg/kg loading dose and 12mg/kg or 20 mg/kg daily according to gestational and postnatal age, micafungin: 15 mg/kg loading dose and 10mg/kg daily. For both drugs, sampling strategy included stratification by corrected gestational age and by sampling time with 2 samples in neonates <32 weeks and 3 in neonates ≥ 32 weeks. Pharmacokinetic samples (200 µL each) were drawn at days 1 (D1) and 5 (D5). Concentrations were measured by a highly sensitive HPLC-MSMS method. The study obtained ethic and regulatory approvals in France (5 centers) and Spain.

CONCLUSIONS: Results. A total of 36 patients (22 boys and 14 girls) were randomized after parental consent: gestational age at birth and post-natal age were 29.5 ± 5.1 weeks and 2.9± 3.7 weeks respectively, birth and current weight were 1417 ± 952 g and 1736 ± 1144 g respectively (mean±SD). They received fluconazole (n=18) or micafungin (n=18) at doses defined by the protocol. A total of 164 concentrations (4.6 ±1.2 and 4.5 ±1.2 samples per patient for fluconazole and micafungin respectively) were available for analysis. Concentrations after the first and fifth administrations are presented below.

Conclusion. Population PK was conducted after administration of doses that were higher than currently used in order to optimize efficacy and the concept of a loading dose present in antifungal treatment strategies for adults was applied for both drugs.

Analysis is ongoing using NONMEN to determine population PK parameters and optimize dosage. The results will also allow to evaluate the tolerability and to describe short-term safety of fluconazole and micafungin in neonates with suspected or culture-proven Candidiasis.

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	Fluconazole			Micafungine		
	Time (h)	N	Concentration-mg/L	Time	N	Concentration-mg/L
D1	2.4 ± 0.2	18	25.9 ± 2.5	2.4 ± 0.2	18	42.8 ± 10.8
D5	2.3 ± 0.2	15	42.3 ± 12.3	2.3 ± 0.2	13	34.8 ± 17.9