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Establishment of Human Digital Liver Databank (HDLD) and Preliminary Report of Dong Q's Digital Liver Classification

Qian Dong, Chengzhan Zhu, Xianjun Zhou, Hong Zhang, Lin Su, Bin Wei, Gang Zhang, Xiwei Hao, Qiuye Yu, Ying Wu, Yujun Xia, Dongfeng Zhang, Kaiyue Cui, Geng Geng,

The Affiliated Hospital of Qingdao University, Qingdao, China, Institute of Digital Medicine of Qingdao University, Qingdao, China, Medical college of Qingdao University, Qingdao, China

Introduction: Modern imaging techniques such as multi-slice computed tomography (CT) or magnetic resonance imaging (MRI) now allow for three-dimensional (3D) reconstruction of the entire liver vascular structures, and offers an interactive platform for surgeons to decide preoperatively the best treatment options. Recent developments in liver surgery, with living donor transplantation or complex liver resection, has made mandatory the precise and reliable preoperative imaging of vascular anatomy.

Purpose: The purpose of our research is to establish the Human Digital Liver Databank (HDLD) and analyze the anatomic difference, including intrahepatic vascular variance and liver volume from neonates to elderly human beings.

Materials and Methods: 3D digital liver is reconstructed with Hisense Computer Assisted Surgery (Hisense CAS) system. We analyzed liver volume with 1116 cases and intrahepatic vascular variance with 662 cases of normal liver from neonates to adults.

Results: The liver volume gradually increases from neonates (226.35 ± 14.72 ml) to adults (1198.25 ± 175.57 ml). The maximum liver volume is about 1368.37 ± 182.57 ml at the age of about 40~50 years old. After 50 years old, the liver volume gradually decreases with age. Moreover, the liver volume of left lobe increase from 101.60 ± 16.47 ml to 504.25 ± 144.47 ml.

Intrahepatic vascular variance was analyzed based on the reconstructed digital liver. For the portal vein main branch, we found 5 types of variance, taking 76.1%, 13.7%, 7.3%, 1.8% and 0.9% respectively. We found 4 type of hepatic vein variance, taking 60.6%, 35.6%, 2.9% and 0.9%, respectively. Furthermore, there were much more variances for each segment of portal vein and their corresponding hepatic vein. Based on the analysis of the variance of portal vein and hepatic vein of 662 digital liver. We proposed a preliminary methods of liver classification with ten liver segments, named DONG Q's Digital Liver Classification.

Conclusions: With analyzing the intrahepatic vascular variance and liver segment volume based on the portal vein branch of thousands of digital livers, we would like to propose our DONG Q's Digital Liver Classification in the future. With the HDLD, we could understand more about the liver volume and the intrahepatic vascular variance, helping us make better surgical decision.

Fig 1. Human liver volume from neonates to adult.
Fig 2. The analysis of intrahepatic vascular variance based on digital liver.

Fig 3. The analysis of digital liver segments based on intrahepatic portal vein branches.
**BURKITT LYMPHOMA – THE DIAGNOSIS AND TREATMENT**

F. Selimi, V Grajqevci-Uka, Rufadie Maqastena-Maxhuni, B. Abrashi, V.Hasbahta

*University Clinical Center, Pediatric Clinic, Pristina*

**Introduction:** Lymphoma is the most common blood cancer. The two main forms of lymphoma are Hodgkin lymphoma (HL) and non-Hodgkin lymphoma. Burkitt lymphoma (BL) is an uncommon form of non-Hodgkin lymphoma. Burkitt's lymphoma is an aggressive B-cell form of NHL that occurs most often in children and young adults. Burkitt lymphoma is named after British surgeon Denis Burkitt, who first identified this unusual disease in 1956 among children in Africa.

The disease may affect the jaw, central nervous system, bone marrow, bowel, kidneys, ovaries or other organs. There are three main types of Burkitt lymphoma: (sporadic, endemic, and immunodeficiency related). Ly Burkitt affects the third most common childhood cancer. It occurs most often in children between the ages of 7 and 11, but can occur at any ages from infancy to adulthood.

Burkitt lymphoma may be treated with chemotherapy, radiation therapy, or autologous stem cell transplantation. Burkitt's lymphoma is potentially curable.

**Purpose:** Presentation of the case with Lymphoma Burkitt, which was presented to Hematology Oncology Unit at Pediatric Clinic and has received chemotherapy treatment.

**Materials and methods:** A male child, 6 years old, child comes to our clinic with abdominal pain, loss of appetite, fatigue, nights sweats and fever. After the examinations of: anamnesis, laboratory-hematology analysis, biochemical, RTG chest, USG and CT neck, chest, abdomen, pelvic. After Ct examination in conclusion: Ct thorax (which represents the mediastinal and axillary lymph nodes) and Ct abdominal (lymph nodes aortalis and trachealis), we prefer the biopsy and immunochemistry. The obtained results from pathology proves Lymphoma Burkitt.

**Results:** After the diagnosis it was indicated the treatment protocol of chemotherapy for Burkitt Lymphomas R-CHOP 21 (Rituximab, VCR, Doxorubicine, Cyclophosphamide, Prednisolon) for 6 cycles. The child was admitted in our ward, to start and continue chemotherapy, the treatment was continued by doctors in our ward. Monitoring of his disease, continuing chemotherapy, laboratory chest, radiological images (CT neck, chest, abdomen, pelvic), are made by our ward, institute of University Clinical Center of Kosovo.

**Conclusion:** The resection of the lymphonodes, application of protocol RCHOP -21, supportive care, monitoring of chemotherapy toxicity, has resulted in absence of minimal residual disease which confirmed by the follow up of his clinical status, laboratory tests, radiology images (PET scan), that resulted the absence of secondary deposits. Now the child is a good health condition, and visits our clinic to follow up his condition.
**Introduction:** Upper respiratory infection (URI) is the most common infectious disease in childhood, frequently followed by an episode of acute otitis media. The pathogenesis of both events is multifactorial, involving infection, environmental and immune response of the child.

**Purpose:** This study was designed to investigate whether single nucleotide polymorphisms (SNPs) in genes for tumor necrosis factor alpha (TNFα), interleukin 2 (IL2), interleukin 6 (IL6), interleukin 10 (IL10), and CD14, independently or in combination with host/environmental risk factors, contribute to URI susceptibility.

**Materials and Methods:** Two groups of children, at the peak age incidence of URI (6 to 72 months) were enrolled in study: children susceptible to URI and children not susceptible to URI. Both groups were exposed to similar environmental/host risk factors (day-care attendance, cigarette smoke exposure, breastfeeding, atopic manifestations). Genomic DNA was extracted from peripheral blood by Blood Prep™ Chemistry for ABI PRISM™6100 Nucleic Acid. Genotyping for SNPs in cytokine genes: IL2 -330; IL6 -597; IL10-1082; IL10-3575; CD14-159 and TNFα -308, was performed on 7500 Real Time PCR System, using TaqMan pre-designed assays, while genotyping for CD14 -159 was performed by using PCR and restriction enzyme digestion with Hae III.

**Results:** High-producing genotypes IL10-1082 (GA/ GG) were significantly more frequent in children susceptible to URI than in control group (p=0.047). A complete absence of IL10-1082 wild-type (AA) genotype was found among URI-prone males (p=0.015), URI-prone children with atopic manifestations (p=0.027) and susceptible to otitis media (p=0.005). Children with high-producing IL10-1082 (GA/GG) genotypes, exposed to cigarette smoke, day-care attendance, lack of breastfeeding and with atopic manifestations have a higher risk to develop susceptibility to URI. The logistic regression analysis shows that lack of breastfeeding in infancy was strongly associated with susceptibility to URI in childhood (p=0.007).

**Conclusion:** This study pointed out that high-producing IL10-1082 genotypes (GA/GG) are associated with susceptibility to URI in childhood, especially in presence of other environmental/host risk factors such as: male sex, lack of breastfeeding, day care attendance, cigarette smoke exposure and atopic manifestations. The lack of breastfeeding was found as an independent risk factor associated with development of susceptibility to URI.
FOREIGN BODY ASPIRATION IN THE PEDIATRIC POPULATION IN KUWAIT, A 7 YEAR STUDY: IS THERE A NEED FOR REFERRAL CRITERIA?

Essa Alqhunaim 1, Derar AlShehab 1, Adel Ayed 1, Jassim AlAbbad 2, Maha AlOtaibi 2

1 Thoracic & Foregut surgery, Chest Diseases Hospital, Kuwait
2 Surgery, Mubarak AlKaber Hospital, Kuwait

Objective: The aim of this study is to report our experience with pediatric foreign body aspiration. In addition, to identify referral criteria to facilitate prompt intervention in emergency cases and conserve resources for less urgent cases.

Method(s): A retrospective review of all pediatric patients (age < 18 years) who underwent rigid bronchoscopy for suspected foreign body aspiration. Data was collected from a national tertiary center in Kuwait from January 2009 until December 2015. The study was approved by our Institutional Ethics Committee.

Result(s): A total of 902 patients underwent rigid bronchoscopy for suspected foreign body aspiration. The mean age of the patients was 42.8 months (SD 45.7) and 517 patients (57.3%) were male. Foreign body was identified in 404 patients (44.78%).

The most common symptoms and signs associated with foreign body aspiration were: clinical suspicion (90.3%), non-productive cough (89.6%), witnessed aspiration or choking (49%), wheeze (20%), respiratory distress (27.2%), stridor (26.3%), reduced air entry (37.9%), and absent breath sounds (4.2%). Clinical suspicion, witnessed aspiration, respiratory distress, stridor, and reduced breath sounds on auscultation were significantly associated with foreign body aspiration. Foreign body extraction by rigid bronchoscopy was successful in 99.7% of patients and one patient underwent thoracotomy to extract it.

Conclusion: Clinical suspicion, witnessed aspiration, respiratory distress, stridor, and reduced breath sounds on auscultation can be utilized to aid in the decision to perform an emergency rigid bronchoscopy. Using those criteria to devise a scoring system is recommended to reduce unnecessary procedures and costs.
NEONATOLOGY

WSP-OP005

MICE LACKING THE NAP(P)H QUINONE OXIDOREDUCTASE (NQO1) OR NQO2 GENE DISPLAY INCREASED SUSCEPTIBILITY TO HYPEROXIC LUNG INJURY IN VIVO: PROTECTION BY BETA-NAPTHOFLAVONE (BNF) ADMINISTRATION

Bhagavatula Moorthy*, Lihua Wang1, Weiwu Jiang1

1Department of Pediatrics - Neonatology, Houston, United States

Introduction: Supplemental oxygen administration is frequently encountered in the treatment of infants and adults with pulmonary insufficiency. However, hyperoxia contributes to bronchopulmonary dysplasia (BPD) in premature infants and ALI/ARDS in children and adults.

Purpose: To test the hypotheses that mice lacking the genes for NAP(P)H quinone reductase (NQO1) or NQO2 will be more susceptible to hyperoxic lung injury in vivo, compared to wild type (WT) mice, and that pre-treatment of these mice with the cytochrome P4501A inducer beta-napthoflavone (BNF) will rescue this phenotype.

Materials and Methods: Ten-twelve week-old wild type (WT) (C57BL/6J) mice, NQO1-null, or NQO2-null mice were treated i.p. with vehicle CO or BNF (40 mg/kg), once daily for 4 days, and the animals were either maintained in room air or exposed to hyperoxia for 24-72 h. The lungs were fixed in buffered formalin, and were paraffin sectioned and stained with H&E. Lung injury and inflammation was assessed by measuring lung weight/body weight (LW/BW) ratios, histology, and neutrophil recruitment by immunohistochemistry. Gene expression of CYP1A1, Nrf2 and NQO1/2 genes was determined in lung by real time RT-PCR.

Results: The NQO1-null and NQO2-null mice were more susceptible to oxygen-mediated lung damage and inflammation than WT mice, as evidenced by increased lung weight/body weight (LW/BW) ratios, lung injury, neutrophil recruitment, and augmented expression of IL-6 and TNF-α, in these animals compared with those in WT mice. There was no significant difference in the extent of lung injury between NQO1- and NQO2-null mice. Pretreatment of WT, NQO1-null, as well as NQO2-null mice with BNF, followed by hyperoxia for 24-72 h, led to significant attenuation of lung injury. BNF treatment led to increased expression of CYP1A1 gene expression in lungs and liver, and of CYP1A2 gene in liver in each of the genotypes.

Conclusion: The fact that NQO1- and NQO2-null mice are more susceptible to hyperoxic lung injury suggests that these enzymes are protective against oxygen injury. That BNF-pretreated mice show attenuation of hyperoxic lung injury in WT, NQO1-null, and NQO2-null mice, and the fact that these mice display augmentation of pulmonary CYP1A1 and hepatic CYP1A1/1A2 support the hypothesis the BNF protected against lung injury by inducing the expression of CYP1A enzymes. Future research could lead to the development of novel strategies for prevention and/or treatment of BPD and ALI/ARDS.
PERCEPTIONS OF PARENTS HAVING CHILD WITH THALASSEMIA

Haydeh Heidari, Ali Ahmadi

Haydeh Heidari: Faculty of nursing and midwifery, Modeling in Health Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran

Background: Patients with thalassemia need to inject blood repeatedly and need to be treated with chelating. Thalassemia like any other chronic disease affects different aspect of person’s life and despite of therapeutic measure, the patient is faced with several physical and psychological problems. Therefore the purpose of this study was exploring perceptions of parents having child with thalassemia.

Methods: The method applied in this study is content analysis. 10 participants was selected purposely in this study. Data collection was done deep, semi-structured, face to face and individual interviews.

Findings: 10 participants including 5 mothers, 1 grandmother, 2 fathers and 2 nurses participated in the study. The average age of mother was 33 years old and the average age of father was 44, the grandmother was 50, the average age of nurses was 45, the average work experience of nurses was 20 and the average work experience in thalassemia department was 4 years. Having analyzed data, the three following categories were specified: rejection of child’s disease, parents’ psychological problems, and psychological problems of family members.

Conclusion: The results of present study revealed that parents of child with thalassemia experience several psychological problems and they need to support from health system. It is also necessary that health authorities establish consulting nurses for parent with child having thalassemia to provide them with necessary consulting services.
RETROSPECTIVE REVIEW OF ADMINISTRATION OF CHILDHOOD PRIMARY VACCINATION SCHEDULE IN AN IRISH TERTIARY NEONATAL INTENSIVE CARE UNIT

Patrick McCrossan

**Introduction:** Premature babies are at increased risk of vaccination preventable infections. Despite this, studies have shown that premature babies are more likely to have delayed vaccines, probably due to a misconception that vaccination poses a risk to the premature child.

National guidelines recommend the ‘6in1’ vaccinations at two, four and six month’s chronological age in accordance with the ‘primary childhood immunization schedule.

**Purpose:** Quantify and evaluate administration of the routine childhood primary vaccination schedule in an Irish tertiary neonatal intensive care unit (NICU).

**Materials and Methods:** Study design: Retrospective review of paper record of vaccinations administered to inpatients in the NICU from 01/01/2001 – 30/11/2013.

**Methods:** Data were extracted from hospital records and institutional databases and analyzed using SPSS for Mac version 21. Analysis was made based on gestational age, chronological age at time of administration of vaccine and type of vaccine received.

**Results:** For all preterm (gestation <37 weeks) babies that received the first ‘6in1’ vaccination while an inpatient (n=344): mean gestational age= 27.3 weeks (sd=2.6 weeks); mean chronological age at time of vaccination= 9.4 weeks. For all preterm patients that received the second ‘6in1’ vaccination while an inpatient (n=19): mean gestational age= 25.6 weeks (sd=1.63); mean chronological age at time of vaccination= 18.4 weeks. For all term (gestation≥37 weeks) patients that received the first ‘6in1’ vaccination while an inpatient (n=9): mean gestational age= 40.1 weeks (sd=1.9); mean chronological age at time of vaccination= 9.8 weeks.

**Conclusion:** In our study we demonstrate that successful vaccination of babies admitted to the NICU is possible regardless of gestational age. In the studied population, the preterm babies received their 1st ‘6in1’ vaccine at the same chronological age as term babies.

As there were no documented adverse events following all 373 vaccinations, we also demonstrate the safety of administering vaccination to premature babies.

Based on our data, infants born at 27 weeks are likely to require vaccination in hospital and those born at 25 weeks gestation are likely to remain in hospital in time for their 2nd ‘6in1’ vaccination.

It would therefore be prudent for maternity hospitals to include administration of vaccinations as part of a care pathway/ management bundle for premature babies.
CORD BLOOD GLUCOSE AT BIRTH AS PREDICTOR OF NEONATAL HYPOGLYCEMIA IN INFANTS OF DIABETIC MOTHERS

Dean Angelo Dimaano*, Wilfredo Santos

Introduction: Infants of Diabetic mothers (IDM) are prone to develop neonatal hypoglycemia. That's why it is prudent to monitor their blood sugar as early as the first hour of life (HOL). For every heel prick, there is infliction of pain and a risk of developing some complications.

Purpose: Aims to determine if umbilical venous cord blood glucose (CoBG) at birth can predict neonatal hypoglycemia. If proven to be predictive, this can lessen the number of standard glucose monitoring and lessen the complications that heel-prick method of measurement carries.

Materials and Methods: Neonates born to diabetic mothers, with absence of a non-reassuring fetal heart rate, with an APGAR score of at least 7 at the 1st and 5th minutes of life, not needing neonatal resuscitation and oxygen support or intravenous fluid at birth were included in the study. After the delivery, the subjects underwent determination of umbilical vein cord blood glucose (CoBG) level immediately after cutting of the umbilical cord. The values were correlated with values obtained with the standard capillary blood glucose (CBG) monitoring protocol of the USTH Newborn Services Unit taken at the 1st, 3rd, 6th and 12th hours of life (HOL) via heel-prick method using a calibrated glucometer.

Results: Results showed that CoBG values were significantly associated with 1st HOL CBG values (p=0.003), but not with the 3rd (p=0.240), 6th (p=0.766) and 12th (p=0.461) HOL CBG values. The CBG at First HOL could be derived given a neonate’s CoBG using the regression equation obtained Y = 39.6 + 0.2949x(CoBG). Further studies with a larger sample size is ideal to validate this equation. There was also a note of the average drop of blood glucose values from CoBG to 1st HOL CBG, with a value of 18mg/dl. The two methods were comparable at some point, but the lower the value of the CoBG, the bigger the difference. Based on the results, the average drop of blood glucose levels is more predictive.

Conclusion: CoBG was not predictive of neonatal hypoglycemia in infant of diabetic mother. However, CoBG was correlated with 1st HOL CBG level, in which the average drop (difference in values) was more predictive of neonatal hypoglycemia. This may signify that CoBG determination may be alternative to the 1st HOL CBG monitoring, with an advantage of less pain and less risk for complications that come with the heel-prick method.
MORBIDITY AND MORTALITY OF PRETERM INFANTS LESS THAN 26 WEEKS OF GESTATIONAL AGE

Maria Inês Durães* and Filipa Flor-de-Lima; Gustavo Rocha; Henrique Soares; Hercílio Guimarães

Introduction: Extreme preterm infants have a high risk of morbidity and mortality. Newborns delivered between 23+0 and 25+6 weeks, are considered to be in the "gray zone" and have uncertain prognosis. For these children medical decision-making becomes complex and controversial.

Purpose: The present study intends to evaluate the neonatal morbidity and mortality of preterm infants born between 23 weeks and 25+6 weeks of gestational age.

Materials and Methods: A retrospective study was conducted including all inborn preterm infants, with a gestational age between 23+0 and 25+6 weeks, admitted to a level IIIC NICU, between 1st January, 1996 and 31th December, 2014.

Results: A total of 72 preterm neonates were included, 18.1% had a full cycle of antenatal steroids. The most frequent major morbidities were RDS (95.4%), patent ductus arteriosus (81.3%), sepsis (55.7%, being 19.7% early sepsis, and 36.1% late sepsis), intraventricular hemorrhage (34.4%), retinopathy of prematurity (21.9%) and necrotizing enterocolitis (10.9%). Fifty-four (75%) children died. The only factor adjusted to age associated with high mortality found was hypotension (OR=4.99, p<0.019). Morbidity at discharge was: severe bronchopulmonary dysplasia (77.8%), retinopathy of prematurity (72.2%), intraventricular hemorrhage (16.7%), cystic periventricular leukomalacia (11.1%) and necrotizing enterocolitis' sequelae (5.6%).

Conclusion: The survival rate was 25% and a high morbidity at discharge was observed, which leave us with the huge responsibility to improve this result in a near future. Extreme prematurity is still a very controversial and complex issue and particular challenge for neonatologists. The use of antenatal steroid in the more immature preterm infants should be encouraged.
EFFECT OF PALADY AND CUP FEEDING ON PREMATURE NEONATES’ WEIGHT GAIN AND REACHING FULL ORAL FEEDING TIME INTERVAL

Maryam Marofi¹, Fatemeh Abedini², Majid Mohammadizadeh³, Sedigheh Talakoub¹

¹ Department of Pediatric and Neonatal Nursing, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran
² Nursing and Midwifery Care Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran
³ Department of Neonatology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran

Background: Premature neonates' feeding is of great importance due to its effective role in their growth. These neonates should reach an independent oral nutrition stage before being discharged from the Neonatal Intensive care Unit. Therefore, the researcher decided to conduct a study on the effect of palady and cup feeding on premature neonates’ weight gain and their reaching full oral feeding time interval.

Materials and Methods: This is a clinical trial with a quantitative design conducted on 69 premature infants (gestational age between 29 and 32 weeks) who were assigned to cup (n = 34) and palady (n = 35) feeding groups through random allocation. The first feeding was administrated either by cup or palady method in each shift within seven sequential days (total of 21 cup and palady feedings). Then, the rest of feeding was administrated by gavage.

Results: Mean hospitalization time (cup = 39.01 and palady = 30.4; \( P < 0.001 \)) and mean time interval to reach full oral feeding (cup = 33.7 and palady = 24.1; \( P < 0.001 \)) were significantly lower in palady group compared to cup group. Mean weight changes of neonates 7 weeks after the intervention compared to those in the beginning of the intervention were significantly more in palady group compared to the cup group (cup = 146.7 and palady = 198.8; \( P < 0.001 \)).

Conclusions: The neonates in palady group reached full oral feeding earlier than those of cup group. Subjects’ weight gain was also higher in palady group compared to the cup group. Premature neonates with over 30 weeks of gestational age and physiological stability can be fed by palady.
THE EFFECT OF MELODY ON THE PHYSIOLOGICAL RESPONSES OF HEEL STICKS PAIN IN NEONATE
Maryam Marofi¹, Farzaneh Nikobakht², Zohreh Badiee³, Mehri Golchin⁴

¹ Master of Pediatric Nursing, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran
² Nursing Student Research Center, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran
³ Department of Pediatrics, Associate Professor of Neonatology, School of Medicine, Isfahan University of Medical Science, Isfahan, Iran
⁴ Department of Pediatric Nursing School and Midwifery, Isfahan University of Medical Science, Isfahan, Iran

Background: During health care in the neonatal intensive care unit (NICU), infants undergo extremely painful procedures, which may cause problems, if not controlled, such as changes in the pattern of respiratory rate, heart rate, and blood oxygen saturation. The present study aimed to find the effect of melody on the physiological responses of neonates' heel stick pain.

Materials and Methods: This quasi-experimental study was conducted in Alzahra Hospital (Isfahan, Iran) for 5 months. Fifty infants were selected through convenient sampling method and were randomly assigned in equal numbers to two groups (n = 25). In the melody group (intervention), a selected melody was played for the infants at a distance of 1 m from them, with a sound intensity of 65 dB, from 3 minutes before, during, and after the heel stick procedure, respectively, and their physiological responses were observed with a monitoring system and recorded at the afore-mentioned time periods. Physiological responses were also recorded in the control group (no intervention) 3 min before, during, and after the heel stick procedure, respectively.

Results: Means of respiratory and pulse rates in the melody and control groups showed a significant difference at different time points. But the mean blood oxygen saturation in the melody group showed no significant difference at different time points, although the difference was significant in the control group.

Conclusions: The results showed that melody could maintain more balance in some physiological responses of infants, such as the respiratory rate and pulse rate during the Guthrie test. Therefore, melody is recommended to be used to prevent the destructive effects of pain in infants during painful procedures.
A MANAGEMENT STRATEGY FROM THE FRONT LINE OF THE NEONATAL ABSTINENCE SYNDROME EPIDEMIC

Joseph Werthammer

Department of Pediatrics Joan C Edwards School of Medicine at Marshall University

Background: 200+ NAS neonates requiring treatment per year impeded our institution’s ability to admit preterm or ill infants into the Neonatal Intensive Care Unit (NICU). Our objective was to establish a management system to provide optimum care for NAS infants, while controlling costs and reducing NICU bed usage.

Methods: Analysis of data from neonates more than 35 week gestational age with the diagnosis of NAS (ICD9-CM 779.5), requiring pharmacologic treatment and discharged from 2010 through 2015. Chi-square trend analysis was used for trend analysis. Significance for hospital charges per patient was determined using Kruskal-Wallis and Mann-Whitney.

Results: NAS requiring medication treatment increased from 34.1 per 1000 live births in 2010 to 94.3 per 1000 live births in 2015 (p<0.0001 for trend). Median per patient hospital charges for NAS was $90,601.10 (IQR $64,489.50- $128,135.00) for NAS patients managed in the NICU, $68,750.50 (IQR $44,952.30- $92,548.80) for those managed in an in-hospital dedicated unit, and $12,400.00 (IQR $8,400.00- $18,500.00) for those cared for in an outpatient neonatal withdrawal unit. The percent of NAS patient population treated in the NICU was reduced from 100% to 22%.

Conclusions: In this cohort of infants a 208% increase in the number of infants with NAS overwhelmed the capacity of our traditional resources. Without this system NICU would be in a critical state of gridlock and diversion; instead we have efficient management of the NAS epidemic.
Using active fetal movements count in the event of prolonged pregnancy: Preliminary comparative cohort study before and after implementation of a written information.

Laura Chauveau MD, Aurélie Di Bartolomeo MD, Edouard Noblot MD, Cécile Fanget MD, Céline Chauleur MD, PhD; Tiphaine Raia-Barjat MD.

1 Department of Gynaecology and Obstetrics, University Hospital, Saint Etienne, France
2 INSERM UMR1059, University Jean Monnet, F 42023 Saint Etienne France.

Introduction: Prolonged pregnancies represent 15% of pregnancies in France. They lead to an increase in the risk of mortality and perinatal morbidity. The monitoring is based on discontinuous exams. The counting of AFM (active fetal movements) is a subjective assessment of the number of strokes experienced by the patient for a defined period of time.

Purpose: to compare the number of consultations with the consultation’s delay in relation with the sensation of having less AFM in case of late pregnancy, according to the fact if the patients use or not the AFM’s count. The secondary objectives were to compare perinatal morbidity defined by a composite score, the labor mode, and the reasons that led to the eventual labor induction and delivery modalities.

Materials and methods: We have compared a “control” group made up with 160 patients who received a classic information and observation (from December 18th 2013 to February 28th 2014) versus an “educated” group made up with 160 patients who have been educated to the AFM count (from March 1st, 2014 to August, 12th 2014).

Results: The consultations for the AFM decrease, were significantly more frequent in the “control” group than in the “educated” group (36 versus 8 p 0,0009). Regarding the criteria composing the composite score of perinatal morbidity, there was no significant difference in abnormal fetal heart rate, the Apgar <7 at 5 minutes, the pH <7.20 and the number of neonatal ICU mutation. Contrary, pediatricians were called for examination in the delivery room in a neonatal distress context in 21 patients in group "informed" (13.13%) versus 44 patients in the "control" group (27.5%). This difference was significant (p = 0.001). Thirteen newborn patient group "informed" had respiratory distress (ie 8.13%) versus 29 infants in the "control" group (ie 18.13%). This difference was significant (p = 0.008). Inducing labor due to the AFM reduction, was not statistically different between both groups (13 patients in the "educated group " versus 7 patients in the "control group " p=0.97).

Conclusions: Learning a count method seems to decrease the number of consultations for AFM reduction without increasing the perinatal morbidity.
CASE SERIES ON EFFICACY OF PARACETAMOL FOR PDA CLOSURE IN PRETERM INFANTS

Supriya Rastogi, Poonam Sidana, Gaurav Mandhan, Gaurav Garg, Vinod Kumar
Max Super Specialty Hospital, Shalimar Bagh, Delhi, INDIA

Correspondence to: Dr Supriya Rastogi, Consultant Neonatologist, QRG Central Hospital, Sector-16, Faridabad, Haryana, INDIA, 121002

Introduction: Persistence of Patent Ductus Arteriosus in preterm infants leads to serious clinical manifestations. We report here a case series of 15 preterm infants having hs-PDA, treated with paracetamol. Our series is unique because ibuprofen was used if PCM failed and finally surgical ligation/ device closure was done in whom ibuprofen also failed to close PDA. Also, there is a paucity of research papers on this from India.

Purpose: Primary aim is to see efficacy of paracetamol for PDA closure in preterm infants. Secondary aims are to analyze re-opening rate, safety profile of paracetamol, co-relation of PDA closure with paracetamol and gestation age, birth weight, age at presentation, size of PDA.

Material and Methods: Data was collected of a total of 15 preterm infants from January 2014 to June 2016. Paracetamol was given at a dose of 15 mg/kg/dose Q6H for maximum of 72 hours and maximum of two such courses were given. Those preterm babies in whom PDA was not closed even after two paracetamol courses, Ibuprofen was given at standard dose.

Results: Successful closure of hs-PDA after one course of PCM was done in 11 out of 15 babies (73%). Cumulative effect of PCM for ductal closure was 86.66 % after two courses. Regarding the safety profile of PCM, there was no significant increase in serum urea, creatinine, SGOT, SGPT and bilirubin levels after treatment with PCM. There was no significant co-relation found between successful closure of PDA with PCM and other factors, eg, size of PDA, gestational age, age at enrollment and birth weight.

Conclusion: The protocol that we used was effective and it can help to reduce the risk by exposing far fewer neonates to Ibuprofen/ Indomethacin.
SERUM ENZYMES CHARACTERISTICS OF LIVER IN CHILDREN WITH ACUTE RESPIRATORY DISEASES

*Nune Baghdasaryan, Gohar Ayvazyan, Lilit Avetisyan, Olya Asatryan

Introduction: The syndrome of cytolisis is played a central role in the diagnosis of liver parenchyma injury. Comparative analyze of liver functional state with clinical, laboratory, instrumental and statistically methods in children are indicated that in patient with pneumonia and bronchitis present liver microdestructive changes and characterized by elevation of liver –specific enzyme - ornithine carbamoyltransferase (OTC). Index OTC can used as marker of hepatocytolisis and has more sensitive, informative meaning for estimation functional state of liver. OTC levels signals about hepatocyte early injury and degree of activity pathological process.

According to the contemporary medicine chronic inflammation of liver is the clinical-morphological syndrome, which is caused by the various reason characterized by the hepatocellular necrosis and inflammation of various degree. Etiology of liver inflammation are

1) Hepatotrop viruses,
2) Toxins
3) Autoimmunity,
4) Septis
5) Biliary diseases,
6) Metabolic disorders.

The pattern of elevated serum enzymes in symptomatic or asymptomatic patients allows for an initial classification of liver diseases into cholestatic or hepatocellular diseases. Serum enzymes like AST and ALT allow for the assessment of hepatocellular integrity whereas alkaline phosphatase and GGT are indicators of cholestasis.

Purpose: Study of serum enzyme activity in respiratory diseases in children

Table:

<table>
<thead>
<tr>
<th>Serum enzymes activity</th>
<th>Control group, %</th>
<th>Control group, % Patients with pneumonia, %</th>
<th>Patients with acute bronchitis, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTC</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>AST</td>
<td>100</td>
<td>2.6</td>
<td>1.2</td>
</tr>
<tr>
<td>ALT</td>
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<tr>
<td>AP</td>
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</tr>
<tr>
<td>GGT</td>
<td>100</td>
<td>38</td>
<td>14</td>
</tr>
</tbody>
</table>
Materials and Methods: We are investigated 53 children with acute respiratory diseases. They are divided into 3 main groups according to the diagnosis. First group is consisted by the patients with pneumonia (n=20), II – group (n=23) acute bronchitis, III – group (n=10) patients with acute viral hepatitis.

Important investigations in suspected cases are:

1. Serum-standard biochemical tests, immunoglobulins, autoimmune markers, serology of viral infection.
2. Ultrasonography of liver and biliary tract, Doppler of vessels, X-ray examination, endoscopy.
3. Liver –specific enzyme investigation
4. Statistically analysis

Results: Our clinical estimation of liver injury is based on signs of intoxicity, dyspepsia, abdominal pain.

Enzymological status of patients:(see table)

Conclusion: Our data indicate of impairment the liver functional states in respiratory diseases that are characterised by the hepatocellular injure. We are also found that serum level OTC more sensitive, informative criteria of cytolisis than aminotransferases. Finally finding the paediatric injury’ of liver may play a role in adult hepatology.
"THE ROLE OF LACTOBACILLUS REUTERI DSM 17938 IN NUTRITIONAL RECOVERY AND TREATMENT OF CONSTIPATION IN CHILDREN AND ADOLESCENTS WITH ANOREXIA NERVOSA – A RANDOMISED, DOUBLE BLIND, PLACEBO CONTROLLED STUDY"

Orjena Zaja*, Maja Fiolić, Tatjana Lesar, Zlata Bradovski, Mikael Astrom

1 Pediatric gastroenterology, hepatology and nutrition, clinical hospital centre sestre milosrdnice, Zagreb, Croatia, 2Epidemiology & Register Center, Skåne University Hospital, Skane, Sweden

Introduction: Probiotics are live microorganisms which when administered in adequate amounts confer a health benefit on the host. Anorexia nervosa (AN) is a condition of self-induced weight loss, associated with an intense fear of gaining weight and a disturbance in body image that, in children and adolescent, can result in numerous metabolic complication. Dysmotility is one of the most frequent gastrointestinal disturbance.

Purpose: Since there is no paediatric study about the role of the probiotics in AN patients, we chose Lactobacillus reuteri DSM 17938 to investigate its role in nutritional recovery and treatment of constipation in children and adolescents with AN.

Table: Table 1. The secondary outcome - Normalization of body weight (90% premorbid BW or BMI ≥10.percentile; # = number of patients, % = percentage of patients) 3 and 6 months after initiation of treatment.

<table>
<thead>
<tr>
<th>Group</th>
<th>Category</th>
<th>3 months</th>
<th>6 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>1-L.reuteri</td>
<td>Yes</td>
<td>12</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>3</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>15</td>
<td>100%</td>
</tr>
<tr>
<td>2-placebo</td>
<td>Yes</td>
<td>11</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>5</td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>16</td>
<td>100%</td>
</tr>
</tbody>
</table>

P-value2 0.68 0.04

2Fisher’s exact test. 2-sided p-value

Materials and Methods: In total, our randomised, double blind, placebo controlled study included 31 female paediatric patients with AN and constipation (according to APA DSM-V and Rome III criteria) referred to gastroenterologist at the Department of Pediatric Gastroenterology, Hepatology and Nutrition, Clinical Hospital Center Sestre milosrdnice Zagreb. Patients, randomly assigned into the L.reuteri or Placebo group after being hospitalized, were taking L. reuteri or placebo for 3 months, along with the conventional nutritional rehabilitation and additional enteral nutrition. They were regularly measured and followed 6 months after initiation of treatment.
**Results:** The primary outcome was relief of constipation, assessed after 3 months, while secondary outcomes were normalization of body weight, stool frequency and consistency, relief of dyspepsia, weight gain and recovery of malnutrition regarding bone density and vitamin D3 serum levels, 6 months after initiation of treatment.

**Conclusion:** The results showed positive effects of L. reuteri DSM 17938 on the normalization of body weight and the stool frequency after 6 months compared to the Placebo group, but no significant effect on the rate of relief of constipation at 3 months and on the weight gain at 6 months. Although there was a positive trend considering the bone density recovery and vitamin D3 levels after 6 months, it was no significant which can be explained by the short period of observation.
GASTROESOPHAGEAL REFLUX DISEASE IN CHILDREN WITH GASTRITIS AND HELICOBACTER PYLORI INFECTION

Vasile Valeriu Lupu, Martin Burlea, Ingrith Miron, Anca Ignat

Paediatrics Department, University of Medicine and Pharmacy “Gr. T. Popa”, Iasi, Romania

Objectives and study: The relationship between Helicobacter pylori (H. pylori) infection and gastroesophageal reflux disease (GERD) is controversial. The aim of our study was to evaluate the prevalence of GERD in children with Helicobacter pylori infection.

Methods: A group of 1757 children, admitted in a paediatric gastroenterology regional center in northeast Romania, diagnosed with gastritis and/or peptic ulcer disease by upper endoscopy underwent gastric biopsy for H. pylori infection. Also, during the endoscopy, the children were evaluated for GERD.

Results: 542 children (30.85%) had H. pylori infection, while 1215 (69.15%) did not. Out of 1757 children with gastritis, 1017 (57.88%) had GERD. The average age of children with gastritis and GERD was higher (13.59 ± 3.244 SD), compared to children with gastritis without GERD (12.63 ± 3.764 SD). Out of 542 children with H. pylori infection, 315 (58.19%) had also GERD. We didn’t found a significant association between H. pylori infection and GERD (χ²; p>0.05).

Conclusion: If gastritis generally occurs at younger ages compared to gastritis associated with GERD, we can conclude that first appeared gastritis and subsequently the reflux that caused esophagitis, events independent of the presence of the H. pylori infection.
HEPATOCEREBRAL INVOLVEMENT IN A SAUDI INFANT WITH MITOCHONDRIAL DNA DEPLETION SYNDROME IN KING ABDULLAZIZ UNIVERSITY HOSPITAL: A CASE REPORT

Shatha Albokhari*

Introduction: Mitochondrial DNA depletion Syndrome (MDS) with Hepatocerebral involvement is an autosomal recessive disorder that is frequently hereditary, which is uncommon in the Middle East and Arab region. We report an Arab infant with Hepatocerebral form of (MDS) as a result of DGOUK gene mutation compared to similar cases reported from other regions.

Purpose: Our aim is to share our experience and challenges in managing this case and to compare the clinical, laboratory and radiographic findings of similar reported cases from other regions.

Materials and Methods: We report this 3-month-old female Yemeni infant who presented to us with jaundice which began in the second day of life, fever and vomiting. She was the second offspring of a first-degree related couple who had history of a baby who died at the age of 3 days due to unknown cause. She was found to have on examination horizontal nystagmus, jaundice and hepatomegaly that was progressive with time. Given the history of consanguinity and neonatal death of a previous sibling, the possibility of Genetic/Metabolic disorders was in consideration.

Results: The infant had markedly disturbed liver function including coagulation which was getting worse with time despite of conservative management and NG feeding due to failure to thrive. Her virology screen was normal as well as her metabolic screen (aminoacids), abdominal ultrasound showed hepatomegaly with normal kidneys. MRI brain was normal. Genetic analysis for DGOUK gene mutation with homozygous variant of uncertain significance c.427T>C (p.Ser143Pro). She passed away at the age of 7 months due to uncontrollable bleeding despite of conservative therapy.

Conclusion: This report describes the clinical, laboratory and radiographic findings of our 3-month-old infant with mitochondrial DNA depletion syndrome with hepatocerebral involvement; DGOUK gene mutation a condition that is reported in few countries but uncommon in the middle east and Arab region. This Syndrome needs more attention in order to provide suitable management and precisely parental counseling in future pregnancies.
STEATOMETRY AND ELASTOMETRY AS THE METHODS OF NONINVASIVE DIAGNOSTICS OF PANCREATIC STEATOSIS AND FIBROSIS IN CHILDREN

Olha Lukianenko*1, Yuriy Stepanov1, Nina Hravyrovskak1

1"Institute of gastroenterology of the National academy of medical sciences of Ukraine", Dnipro, Ukraine

Introduction: Obesity is associated with ectopic accumulation of fat in parenchymal organs, including pancreas, with formation of its steatosis. Limitation of invasive studies in children causes need of development and implementation of advanced non-invasive methods in pancreatic study.

Purpose: To explore the possibility of ultrasound diagnosis of steatosis and fibrosis of the pancreas in children with the use of steatometry (estimation of ultrasound attenuation) and elastometry (shearwave elastography).

Materials and Methods: We examined 60 children aged 8 to 17 years. Distribution on groups took place on the basis of the body mass index: 1 group consisted of 44 patients with obesity and overweight, 2nd group consisted of 16 children who had normal weight. Sonological research, elastometry, steatometry of the pancreas was made using apparatus UltimaPAExpert (“Radmir”, Ukraine). When the function of elastometry and steatometry was conducted we performed 5 measurements in every part of gland with calculation of the average value.

Results: Pancreatic steatometry data showed that the average coefficient of attenuation of ultrasound was significantly higher in children of the first group comparing to the second group (p<0,05) and amounted (2,45 ± 0,39) dB/cm in 1 group and (1, 8 ± 0,23) dB/cm in 2 group. The average pancreas stiffness in children with normal weight group was higher comparing to patients with obesity and overweight, but the significance of differences was not sufficient and amounted (3,69 ± 0,78) kPa in 1 group and (3,78 ± 0,27) kPa in the 2 group.

Conclusion: We established that the average coefficient of attenuation of ultrasound in children with obesity and overweight during steatometry of the pancreas is significantly higher compared to patients with normal weight, that can be explained by the presence of pancreatic steatosis in children with obesity/overweight. We assumed that the relative decline in pancreas parenchyma stiffness during elastometry in children with obesity can be explained by the echo attenuation due to present steatosis. While the long course of steatosis associated with inflammation and fibrosis development, that characterized by changes in the elastic properties and rise of it stiffness. However, it is necessary to conduct further research with the morphological confirmation of the results.
MORPHOMETRIC PROFILE OF LARGE INTESTINAL NEURONAL PLEXUSES IN NORMAL PERINATAL AUTOPSIES AND HIRSCHSPRUNG DISEASE

Bhawana Badhe*, Hema Subramanian, Pampa Toi, Kumaravel Sambandan

**Introduction:** Hirschsprung disease is a surgically correctable neurocristopathy underdiagnosis of which leads to high morbidity and mortality and overdiagnosis results in unwarranted surgeries. Histopathological documentation of aganglionosis and hypertrophic nerve bundles clinches the diagnosis with identification and resection of the complete extent of the involved segment literally curing the patient of the disease. Morphological diagnosis in routine practice, however is tricky, and lack of objective diagnostic criteria causes high interobserver variation.

**Purpose:** To derive objective values for the diagnosis of Hirschsprung disease (HSCR) from a comparison of the morphometric profile of large intestinal neuronal plexuses in normal perinatal autopsies and surgical specimens of HSCR.

**Materials and Methods:** A cross-sectional comparative study with 40 subjects each in (i) non-HSCR perinatal group encompassing neonates and stillborn babies beyond 30 weeks of gestation on whom autopsies were conducted and (ii) HSCR group comprising all patients clinicoradiologically diagnosed as HSCR. The morphometric assessment was done on hematoxylin-and-eosin-stained sections.

**Results:** The morphometric profile in terms of average number of ganglia/linear mm of colon, interganglion distance, number of ganglion cells/ganglion, average ganglion cell length, ganglion cell nuclear area, ganglion cell nuclear diameter, nerve trunk thickness, and density has been outlined. On comparison with the neuroanatomically normal zone of HSCR, the cut-offs to identify hypertrophic nerve trunks (nerve trunk thickness of >37.85 μm) and reduced number of ganglia (number of ganglia/linear mm of colon <2.05 and interganglion distance of >229 μm) were derived.

**Conclusion:** The determined objective values, after testing on diagnostic rectal biopsies, may serve to formulate a diagnostic algorithm along with immunostaining for diagnosis of HSCR in colorectal specimens.
Precise Hepatectomy Aided by Application of HiSense Computer Assisted Surgery (CAS) System for Children with Giant Liver Tumors

Qian Dong (Qingdao)

Professor of Pediatric Surgery at Qingdao University, Chairman of National Academic Group of Pediatric Hepatobiliary Surgery of China, Director of Key Laboratory of the Digital Medicine and Computer-aided surgery in Shandong Province, and Chairman of Digital Medicine Branch of Shandong Provincial Medical Association, Qingdao - China

Aim: To evaluate the usefulness of a 3D visualization technology, Hisense Computer Assisted Surgery (CAS) System, for diagnosis and preoperative surgical planning in precise hepatectomy for pediatric patients with giant liver tumors.

Methods: Thirty-two pediatric patients with giant liver tumors involving the hepatic hilum underwent precise hepatectomy from April 2010 to December 2015 were enrolled. All patients received upper abdominal contrast-enhanced CT scanning before surgery. The 3D reconstruction of liver and intrahepatic blood vessels of 22 patients was generated using the Hisense CAS system, while 10 patients using the CT Workstation as the control group. The Hisense CAS system presents image or video of digital liver model, assisted diagnosis, preoperative planning and intra-operative navigation. The clinical outcomes were compared between the two groups.

Results: Hepatectomy of all 32 patients went well. The 3D reconstructing models clearly demonstrated the anatomic relationship of liver tumors and the intrahepatic vascular system, providing a better preoperative assessment and assisting surgeons in preoperative procedural planning. Anatomic hepatectomy was accomplished for all patients in the reconstruction group. The mean operation time was shorter in the reconstruction group (128.8 ± 17.8 min) than that in the control group (192.3 ± 37.6 min) (p<0.01). The mean intraoperative blood loss was less in the reconstruction group (24.8 ± 14.4 ml) than that in the control group (53.5 ±18.3 ml) (p<0.01).

Conclusion: 3D visualization technology provides better preoperative assessment and allows individualized surgical planning, assisting precise hepatectomy in pediatric patients with giant liver tumors.
**BREAST MILK PERCEPTION SCALE FOR ADULTS: DEVELOPMENT, RELIABILITY, AND VALIDITY STUDY**

Özge Eren¹, Nursan Cinar* ²

1Çarşamda State Hospital, Samsun, ²Department of Peadiatric Nursing, Faculty of Health Sciences, Sakarya University, Sakarya, Turkey

**Introduction:** Mothers should be supported by their spouses, friends, relatives and health professionals and the society’s awareness on the superiority and benefits of breast milk should be increasedin order to initiate and maintain a healthy breastfeeding process.

**Purpose:** This study aimed to develop an “Breast Milk Perception Scale for Adults” which can be used for determining adults’ perceptions of breast milk and to test the validity and reliability of the scale.

**Materials and Methods:** The draft scale, which included 33 items with 5 Likert type response categories prepared in accordance with the literature, was sent to 14 experts for content validity and their opinions were recorded. After obtaining permission from the institutions and ethical approval, the study was conducted between March and June of 2015 in three family health centers with similar socioeconomic levels located in Samsun, Carsamba. Data was collected by the researchers using the question form prepared by the researchers and the Breast Milk Perception Scale for Adults, which was tested for content validity. The sample included 350 adults. The test-retest study was conducted with 70 people. Validity and reliability of the scale was analyzed using the Lisrel software.

**Results:** Mean age of the participants was 34.63±10.84 (min. 19, max. 65). Among the participants, 71.8% were female (n=237) and 28.2% were male (n=63). The KMO value was 0.88, while the Barlett’s test of sphericity was also significant (p<0.01). Exploratory (EFA) and confirmatory factor analyses (CFA) were conducted in order to determine the construct validity of the Breast Milk Perception Scale for Adults. According to the EFA, the Breast Milk Perception Scale for Adults had 30 items and one factor. CFA was used to evaluate the construct validity of the single factor and 30-item scale. The path diagram yielded the following fit indices: χ²=1750.51, X²/sd= 4.32, RMSEA=0.072, CFI=0.90, NNFI=0.91, NFI=0.90 and GFI=0.88. The Cronbach’s alpha coefficient of the scale was found to be 0.93. Respondent consistency was examined using Inter Class Correlation (ICC) and a correlation coefficient of 0.859 was calculated, indicating acceptable test-retest reliability.

**Conclusion:** It was determined that the newly developed Breast Milk Perception Scale for Adults is a valid and reliable instrument.
DETERMINATION THE PACKAGED READY FOOD CONSUMPTION PATTERNS OF PARENTS AND THE FACTORS THAT AFFECT

Sibel Küçük¹, Dilek uludaşdemir*¹, Mihran küçük²

¹nursing, ankara yıldırım beyazit university, ²Nafiz Körez Sincan Public Hospital, ankara, Turkey

Introduction: Nutrition is important in childhood period as in every stage of life. Some reasons as changing in nutrition habits, being easy of reaching and buying, being packaged colorful, having good taste increase the consumption of ready food.

Purpose: This study was conducted to determine the packaged ready food consumption patterns of parents have less than 18 aged children and effective factors on this, as descriptive.

Materials and Methods: The sample of the study was composed of 1007 parents who lived in Ankara city, have 0-18 year old children and accepted to participate to the study. Data was collected with a questionnaire form included in 31questions related to sociodemographic characteristics and nutrition habits between 01.09.2015-01.09.2016. For data analysis, mean, standard deviation and chi-square tests were used.

Results: Average age of the parents was 33.91+-7.78, number of children was 1,84+-0.83, of them; 69.7% were women, 46.9% graduated from high school and 67.1% of their children was attending to school. It is found that of the parents; 80.3% had ‘junk food drawer’, 90.3% bought packaged/junk food because of their children wanted (%46.7), 77.3% thought that these food were harmful, 54.8% bought because of label’s effect, 54.1% read the label of product, 67.4% looked its expiration date. Again, of the parents; 40.6% stated that their children consumed packaged/junk food every day, 51.0% thought that they were impressed by their friends, and 58.6% let them to consume these food after meal. However, they stated that their children consumed some food as chocolate, ready fruit juice, crisps, fermented food as pepperoni/salami and packaged ice-cream twice a week, most frequently; opened ice-cream and packaged sweets once a week and they didn’t consume fizzy drink. A significant relation was found firstly between age, gender, education, having children and taking packaged/junk food, secondly, between gender, education, income, number of children and causes of taking packaged/junk food , thirdly, between age, working statute and considered points during taking packaged/junk food (p<0.05).

Conclusion: As a result of; it is suggested to conduct required studies to raise awareness about the effects of ready/junk food and extend of these studies in all regarding units nationwide.
EFFICACY OF THE PRESCRIPTION OF PHYSICAL ACTIVITY IN OBESE CHILD POPULATION

Edgar Debray Hernandez* 1, Maria Victoria Valero Bernal2, Erica Mabel Mancera Soto3

1Corporal Human Movement, National University of Colombia, 2Public Health, National University of Colombia, 3Corporal Human Movement, National University of Colombia, Bogota, Colombia

Introduction: Child obesity is a priority in public health programs and is considered a public health problem worldwide. For the Pan American Health Organization (henceforth PAHO), overweight and obesity rates have increased disproportionately throughout the world, especially in the Americas, with greater impact on children.

Purpose: Determine the effectiveness of prescription of physical activity in overweight and obese child population according to the levels of evidence through a systematic revision in randomized controlled clinical trials in children under 16 of the physical activity programs, considering as result variables body mass index (BMI), BMI Z score and % fat.

Materials and Methods: For findings pertaining to intervention of physical activity in children with overweight and obesity 4 data bases were used electronically: Pubmed, Embase, Cochrane and Lilacs. The search was conducted with a cut-off date of June 2012. Randomized controlled clinical trials of intervention programs of physical activity in overweight and obese children were selected. Two independent researchers revised and evaluated the quality of the studies, extracted intervention and result data, revised the publications that were issued until June 2012.

Results: A total of 204 studies were identified. 19 randomized controlled studies which complied with inclusion and exclusion criteria were included; these studies evaluated the impact of physical activity among obese children in different types of intervention based on exercise and diet or combined with the objective of reducing weight in obese children. The result variables were BMI, BMI Z score and % fat. 3 schemes of intervention were identified: a) exercise versus no exercise, 9 studies; b) exercise and diet versus diet, 6 studies and c) exercise versus counseling, 3 studies. The studies included presented high heterogeneity levels of I2 of 73% Chi² of 18,82 at 5 degrees of freedom with a value P of 0,002, which explain why they were presented in an explanatory manner.

Conclusion: The data obtained, though they are the result of high statistical heterogeneity, clinically show the impact of overweight and obesity reduction. It is important to highlight as better intervention due to its effectiveness, the scheme of exercise and diet versus diet, which enable us to suggest that the integral program composed by structured exercise with clear prescription variables such as intensity,
DETERMINANTS OF IRON DEFICIENCY ANEMIA AMONG HOSPITALIZED CHILDREN AGED 6-59 MONTHS IN ARMENIA: A CASE-CONTROL STUDY

Anush Mnatsakanyan*, 1, 2, Anahit Demirchyan2, Haroutune Armenian3, Kristina Akopyan2

1Department of Pediatrics, Yerevan State Medical University, 2School of Public Health, American University of Armenia, Yerevan, Armenia, 3Fielding School of Public Health, UCLA, Los Angeles, California, United States

Introduction: Anemia has a global prevalence of 32.9%. Preschool children and pregnant women are the most vulnerable groups for anemia. Iron deficiency is responsible for 60% of anemia cases. Iron deficiency anemia (IDA) has many long-lasting health consequences for children. According to the available estimates, the rate of anemia among 6-59 months old children in Armenia is between 16-32%. No data is available for the rate and risk factors of IDA in Armenia.

Purpose: This study sought to identify independent risk factors of IDA among hospitalized children aged 6-59 months in Armenia.

Materials and Methods: The study utilized a case-control design. Cases and controls were selected from the same population of hospitalized children aged 6-59 months with cases having laboratory confirmed IDA and controls being free from any type of anemia. Three major referral hospitals in Armenia located in Yerevan (two pediatric hospitals and a specialized hematology center) served as the study settings. We conducted hospital record reviews followed by telephone interviews with mothers of sampled children. The study applied descriptive analytical techniques and bivariate comparisons, followed by fitting a logistic regression model of independent risk factors of IDA among the study population.

Results: Overall, 213 participants – 71 cases and 142 controls were included in the study. The study identified six independent risk factors of IDA. Age (OR=0.89; p

Conclusion: This study identified a number of well-known risk factors of IDA among hospitalized children aged 6-59 months in Armenia. Many of these factors can be modified through appropriate interventions. The study findings indicate the need to pay more attention to preventing iron deficiency among younger children and those born with low birth weight and to completely treat any identified anemia among children. Counseling of mothers on child nutrition, which should include promotion of diverse diet and avoidance of cow’s milk, could have positive reflection in preventing IDA.


**PEDIATRIC PSYCHOLOGY AND BIPOLAR DISORDERS**

**WSP-OP026**

**ADOLESCENTS LIVING IN RESIDENTIAL YOUTH CARE INSTITUTIONS: CHILDHOOD MALTREATMENT, MENTAL DISORDERS, QUALITY OF LIFE/WELL-BEING AND SELF-ESTEEM**

*Thomas Jozefiak*, Nanna S. Kayed¹ ², Hanne K. Greger¹

¹Department of Mental Health, ²The Norwegian University of Science and Technology, Trondheim, Norway

**Introduction:** Adolescents in Norway are placed in Residential Youth Care Institutions (RYC) by Child Protection Services because of neglect, abuse, or severe behavioural problems. There is only limited research available regarding these youths’ prevalence of mental disorders and their quality of life (QoL) and well-being. We previously found a prevalence rate of 76% for any psychiatric diagnosis, many adolescents had attachment problems and substance use disorder, and 71% had experienced child maltreatment. Further, the adolescents reported significant lower QoL compared to their peers in the general population. The role of self-esteem for QoL/well-being has never before been investigated in this high-risk population.

**Purpose:**

1. To investigate the mediator role of global self-esteem, attachment difficulties and substance use in the link between childhood maltreatment and well-being.
2. To investigate whether self-esteem in specific domains substantially adds to the explained variance in QoL in this population over and beyond psychopathology.

**Materials and Methods:** All young people in RYC were invited to participate in the study. Eightysix RYC institutions with 601 eligible adolescents were included and 400 adolescents, 12–20 year olds, participated in the study, yielding a response rate of 67%. The adolescents’ psychiatric diagnoses and history of childhood maltreatment were obtained by trained interviewers with the Child and Adolescent Psychiatric Assessment interview (CAPA). Quality of Life/Well-being and Self-esteem was assessed by youth self-reports with the Questionnaire for Measuring Health-related Quality of Life in Children and Adolescents (KINDL-R) and the Self-Perception Profile for Adolescents (SPPA). The Child Behaviour Checklist (CBCL) was completed by employees at the institutions. Mplus, version 7.31 was used for the structural equation modeling (SEM) analyses.

**Results:** Global self-esteem significantly mediated the link between Childhood Maltreatment and Well-being. After adjusting for psychopathology, age and gender, self-esteem domains other than Global self-esteem uniquely explained 42% of the variance in QoL, where "Social Acceptance" and "Physical Appearance" domains significantly predicted concurrent QoL. More detailed results will be presented at the World Pediatrics Summit.

**Conclusion:** For adolescents living in RYC Global self-esteem and two specific domains of adolescent’s self-esteem, "Social Acceptance" and "Physical Appearance", could be targets for enhancing QoL over and beyond psychopathology.
INFANT SENSORY PATTERNS: LINKS WITH PRENATAL AND POSTNATAL MATERNAL-CHILD ATTACHMENT

Grace Branjerdporn*, Pamela Meredith, Jenny Strong

Introduction: The manner in which a child modulates, and responds to sensory information is known as sensory processing, and may be conceptualised as four sensory patterns: Low registration, Sensation seeking, Sensory sensitivity, and Sensation avoiding. Given that atypical scores of these sensory patterns have been associated with less optimal engagement in daily life, understanding the factors that may be associated with a child’s developing sensory processing patterns may be beneficial. Although attachment relationships may feasibly be associated with infant sensory patterns, no papers were identified that have examined this link. Maternal-foetal attachment describes the relationship between a pregnant woman and her unborn child; while the relationship between a mother and her infant is known as maternal-infant attachment.

Purpose: The aim of this research is to investigate the associations between infant sensory patterns and both maternal-foetal and maternal-infant attachment.

Materials and Methods: Using a longitudinal cohort design, 57 women were assessed during pregnancy and again within eleven months postnatally. Women were recruited from antenatal clinics at the Mater Mothers’ Public Hospital in Australia. Questionnaires completed by mothers were used to measure maternal-foetal attachment (Maternal Antenatal Attachment Scale), maternal-infant attachment (Maternal Postnatal Attachment Scale), and infant sensory patterns (Infant/Toddler Sensory Profile). Infant sensory patterns were coded into three groups (e.g., less than others, same as others, more than others) based on normative data. ANCOVA models were completed.

Results: Poorer quality of maternal-foetal attachment was associated with higher than typical levels of all four infant sensory patterns. More hostility in postnatal maternal-infant attachment was also linked with atypical infant sensory patterns for Sensory seeking, Sensory avoidant, and Sensory sensitivity. Less pleasure in interacting with the infant postnatally was associated with higher levels of infant Sensory seeking and Sensory avoidance than was normal.

Conclusion: The study provides preliminary evidence of associations between a mother’s relationship with her child before and after birth, and the child’s sensory patterns under one year of age. While further research is needed to improve confidence in the results, the results point to the potential benefit of understanding infant sensory patterns using an attachment framework related to the mother-child relationship.
INFANT TEMPERAMENT IN IBQR VSF FOR CZECH POPULATION

Petra Potmesilova*, Milon Potmesil1

1PALACKY UNIVERSITY OLOMOUC, CZECH REPUBLIC, Olomouc, Czech Republic

Introduction: Objective: To develop a functioning Czech language-based IBQR VSF (The Infant Behavior Questionnaire – Revised - Very Short Form) as a tool to describe the child’s temperament during the period of the age of 3-12 months.

Purpose: Background: The child’s temperament is considered as a relevant personal variable in child developmental pathways. The purpose of the adaptation process was to translate and modify the Czech version of the temperament assessment instrument – IBQR VSF – based on Rothbart’s theoretical approach.

Materials and Methods: Methods: An original translation was modified, based on feedback by professional translators, three bilingual psychologists, and a sample of 15 Czech mothers. A back-translation by a professional translator was then assessed by the authors of the original (English language) instruments. For the final version of the measure, the authors of the original instrument judged that 100% of the items were consistent with the original items, and a second sample of 15 collaborating mothers identified no problems with the Czech items.

Results: Results: The reliability of the adapted questionnaire was verified by calculation of the Cronbach's alpha.

Conclusion: Conclusion: The results obtained will be offered as the IBQR VSF functional tool to psychologists specializing in evaluating children in early age groups. We also expect interest on the part of specialists working with the parents of prematurely born or handicapped children.
ENVIRONMENTAL STRESSORS CONTRIBUTE TO DYSREGULATED STRESS RESPONSES AND BEHAVIORAL DEFICIENCIES INITIATED BY RELATIVELY SHORT EXPOSURE OF NEONATAL RATS TO ETOMIDATE

Anatoly Martynyuk*, Ling-Sha Ju1, Jiao-Jiao Yang1, Nikolaus Gravenstein1, Christoph Seubert1, Timothy Morey1

1University of Florida, Gainesville, United States

Introduction: Every fourth newborn is exposed to general anesthesia during the first year of life in the United States. Many studies evaluating neurocognition in humans who had procedures under anesthesia early in life found long-term deficits even though the typical anesthesia duration normalized to the human life span is much shorter than that shown to induce developmental abnormalities in rodents.

Purpose: We investigated whether in rodents environmental stressors after anesthesia may contribute to developmental abnormalities, initially programmed by a relatively short exposure to etomidate anesthesia.

Materials and Methods: Postnatal days (P) 4, 5, or 6, Sprague-Dawley rats received the Na⁺-K⁺-2Cl⁻ (NKCC1) inhibitor, bumetanide, or saline prior to 2 h of etomidate anesthesia. To simulate subsequent stress, a subgroup of the animals was also subjected to a single episode of maternal separation for 3 h at P10.

Results: Two hours of etomidate exposure increased hypothalamic NKCC1 mRNA (F(2,23) = 13.826, P < 0.001) and corticotropin releasing hormone (CRH) mRNA (F(2,24) = 4.330, P = 0.0248) and decreased K⁺-2Cl⁻ (KCC2) mRNA (F(2,24) = 7.337, P = 0.003) levels 3-7 days after exposure to the anesthetic (P9-P11). When etomidate exposure was followed by stress (maternal separation) these changes persisted into adulthood. Increases in NKCC1/KCC2 ratio and CRH mRNAs were greater in males than in females. Adult rats in the etomidate plus subsequent maternal separation group exhibited extended corticosterone responses to restraint stress with increases in total corticosterone concentrations more robust in males (F(8,141) = 2.234, P = 0.023). Male and female rats in this group had reduced prepulse inhibition of startle responses, but only male rats spent a shorter time in open arms of the elevated plus maze. Bumetanide ameliorated most of these abnormalities.

Conclusion: Post-anesthesia stressors may exacerbate/reveal neurodevelopmental abnormalities even after a relatively short anesthesia protocol with etomidate in young rodents. Amelioration by bumetanide suggests a mechanistic role for etomidate-enhanced gamma-aminobutyric acid type A receptor-mediated depolarization in the initiation of long-lasting alterations in gene expression that are further potentiated by subsequent maternal separation, leading to an increased hypothalamic NKCC1/KCC2 mRNA ratio, CRH mRNA levels, abnormal stress responses and neurobehavioral deficiencies in adulthood.
POST TRAUMATIC STRESS DISORDER IN CHILDREN RELATED TO CHILD ABUSE NEW CLINICAL, GENETIC AND EPGENETIC EVIDENCES

E. Parano MD PhD, G. Pappalardo, Pavone MD, Ruggieri MD PhD, and S. Cavallaro MD PhD

Institute of Neurological Science (ISN), The National Research Council of Italy, CNR, Catania, Italy
Unit of Pediatrics, University Hospital “Policlinico-Vittorio Emanuele”, Catania, Italy
Department of Pediatric, University of Catania, Italy

In children or adolescents who experiences severe traumatic stress events, including situations where someone's life (themselves and/or parents’ lives) is threatened, or when major injuries occur, or being victims of physical/sexual abuse, or victims of a car accidents or natural disasters, the risk of developing a Post Traumatic Stress Disorder (PTSD) becomes more likely. The American Academy of Child & Adolescent Psychiatry, has recently suggested that PTSD related to child sex abuse, can manifest with unique clinical patterns, including specific signs and symptoms of varying clinical severity such as loosing interest in social activities, age-inappropriate behaviors, and loss of talking skills; other leading hallmarks are the tendency, in young and adult life, to repeat some forms of behavior perpetrated before against themselves. In addition, molecular genetic studies have recently demonstrated that abused children who develops PTSD, might develop distinct genomic alterations and unique epigenetic DNA methylation profiles. Finally, during the last few years, increasing evidence of the changes in brain structure and function occurring in abused children suffering from PTSD have been recorded by neuroimaging (MRI, fMRI, PECT) and neurophysiological (EEG, ERP) studies on large cohorts of children; main changes observed affect the frontal-limbic networks, the hippocampus and the amygdale.

According to these new evidences reported by separate teams of researchers, we have recently proposed that for a better and more accurate clinical and diagnostic evaluation and understanding of the clinical phenotype, the overall manifestations and symptoms caused by child abuse should be better regarded as a specific and distinct entity, grouped under the term of “Child Abuse Syndrome” (CAS). Finally, we have also started a Pilot Multicenter Research’s Study from the Institute of Neurological Science (ISN), the National Research Council of Italy (CNR), involving several experts on this topic, including molecular genetists, pediatrician and pediatric neurologists, child neuropsychiatrists, and psychologists. Main purpose of the study is to evaluate genetic and especially epigenetic influences in developing long-term neurobehavioral disorders and pediatric psychology disturbances related to the child abuse. In order to evaluated effect of epigenetic in PTSD related to child abuse, patients have been subdivided into three major class:

1) minors victims of child abuse who developed PTSD;
2) minors victims of child abuse who did not develop PTSD; and
3) minors who developed PTSD from other causes rather the child abuse. Based on RNA and DNA analysis from blood and saliva specimen, the experimental strategy consists of two parts:
   i. the genetic screening to evaluate the role of specific risk allelic variants of Single Nucleotide Polymorphisms (SNPs) and Variable Numbers of Tandem Repeats (VNTRs) found in FKB5 and MAOA genes and other crucial genes related to PTDS;
   ii. the detection of DNA methylation status of promoters and the quantitative measurement of gene expression. Our preliminary data seem to identify a strong correlation with epigenetic changes in both genes implicated in risk of PTSD.
MEDIA AND MENTAL HEALTH: WHAT DO WE NEED TO KNOW?

WSP-OP031

PREVENTING AGGRESSION AMONG HIGH-RISK PRE-SCHOOL CHILDREN THROUGH PARENTAL EDUCATION AND GUIDANCE USING SOCIAL MEDIA

Marie Leiner* 1 on behalf of Marie Leiner, PHD

1 Pediatrics, Texas Tech University Health Sciences Center, El Paso, Tx, United States

Introduction: During preschool years most children will learn to use socially appropriate behaviors to regulate their aggressive tendencies. However, these skills, which include conflict resolution and negotiation, are rarely learned without instructive contact and modeling between a child and others, especially parents, siblings, and peers. If aggressive behaviors are left unmodified, these children will be at higher risk for developing increasingly violent conduct during adolescence and adulthood, with potentially problematic longer-term consequences.

YouTube can be a valuable platform to provide preventative health education among children. However, during production of educational material, it is important to seriously consider that the competition for views on social media is strong and that educational material should be designed utilizing theoretical frameworks.

Purpose: To determine the effect of this educational material presented in social media

Materials and Methods: In this study, after uploading educational material that was created using our proposed theoretical-based model, and which was intended to modify behaviors among children, we reviewed users’ comments (1749) and views (~8,000,000) of five vignettes between August and December 2015.

Results: Comments were categorized by two independent reviewers and suggested behavioral changes occurred as a result of viewing in at least 477 (23.7%) of the comments.

Conclusion: The popularity of this media platform cannot be ignored because, in doing so, we may miss the opportunity to reach young people and provide health education. Theoretical frameworks of production have the potential to become popular and capture viewers’ attention, thereby resulting in behavioral changes.
HEALTH EDUCATION MODELS FOR PEDIATRIC INPATIENTS: THE ROADMAP FOR SUCCESS

Indu Pathak*1, Marie Leiner1 and This is a working group presentation

1Pediatrics, Texas Tech University Health Sciences Center, El Paso, Tx, United States

Introduction: Healthcare professionals should take advantage of any opportunity to provide inpatients or outpatients with an educational experience to encourage children and parents/caretakers to see education as a positive experience. A successful educational production should be able to: 1) educate patients with different levels of literacy, education, and language proficiency; 2) compete with entertaining material by capturing viewers’ attention; and 3) be in a high-quality digital format that can be presented in any hospital information technology system. Strategies for successful educational productions must consider the unique aspects of health education. Health education differs from traditional education in that it requires behavioral modification and knowledge acquisition. Therefore, a theoretical foundation must be considered during the design and production of the material.

Purpose: To describe challenges involved when presenting educational material to inpatients

Materials and Methods: This is a discussion about challenges involved when presenting educational material to inpatients

Results: These strategies were used in an educational production which showed they can successfully compete for viewers’ attention in the digital world. The material shown in a popular social media outlet, seemed to compete successfully with popular entertainment productions directed to children/parents/educators.

Conclusion: It is worthwhile to consider that success in preventive care and health education may require theoretical-based models of production. The possibilities for these types of presentations to be integrated into patient care systems are unlimited and should not be missed.
PATTERNS OF MEDIA USE AMONG PARENTS OF PEDIATRIC PATIENTS:
HEALTH INFORMATION VS. ENTERTAINMENT

Maria Theresa Villanos* 1, Marie Leiner 1 and This is a working group presentation

1Pediatrics, Texas Tech University Health Sciences Center, El Paso, Tx, United States

**Introduction:** While it is important to reduce media-usage time among children, it can serve as an important tool to educate patients in the clinical setting. Electronic media usage in excess has shown to have a detrimental effect on children’s health including sleeping habits, access to inappropriate material for their age, violence exposure, etc. Media popularity however, is undoubtedly present in the life of most people independently of their educational or socio economic status. While the production of non-reviewed information is very predominant in the media, the use of health information is spreading everywhere.

**Purpose:** To determine patterns of media use among parents of pediatric patients: Health information vs. Entertainment

**Materials and Methods:** Social media and web pages are becoming the firsthand access for health care users to find information and for self-education [1]. For example, YouTube is a global social network that enables users to communicate through posting video clips, comments, messages, images, etc. It receives millions of page views every day and has over a billion users. YouTube was first launched in 2005 and was originally planned as a way for people to post video clips online [2]. YouTube surpasses any cable network in the United States (U.S.) for viewers aged 18 to 49 years old, according to a YouTube fact sheet [3]. This social media can be the first source of information for patients with potential repercussions to how they perceive and act towards specific medical conditions.

**Results:** Despite all the negative outcomes that social media can have, it is a very important source for free information to those that can have access to the internet and can become a potential ally for health providers.

**Conclusion:** While the general viewer’s access information is based on their specific needs and interests, it is not known if health providers can have an influence on the information accessed by patients.
MENTAL AND EMOTIONAL HEALTH OF CHILDREN EXPOSED TO MEDIA: NEWS, VIDEO GAMES AND SOCIAL MEDIA.

Cecilia De Vargas*1, Marie Leiner2 and This is a working group presentation

1Psychiatry, 2Pediatrics, Texas Tech University Health Sciences Center, El Paso, Tx, United States

Introduction: Viewing extreme violence and terrorism, either directly by witnessing acts or indirectly by watching them in the media, affects children’s mental and emotional health, and some children are at a higher risk for negative effects than others. Indirect exposure to terrorism acts and threats through the media affects the mental health of children, in both short- and long-term ways that differ completely from the effects in adults. Children’s vulnerability, immaturity, and developmental state change their perspective, and the tools used to confront these issues do not affect each child equally. Additionally, emotional problems might not surface immediately; instead, they can remain latent until they surface eventually. How and when this occurs depends mostly on additive effects generated by the environment in which the child develops and additional disparities in which the child confronts.

Purpose: To discuss the effects of mental and emotional health of children exposed to media: News, videogames and social media.

Materials and Methods: This is a discussion about the available scientific evidence

Results: Early intervention services to improve outcomes for children have a tremendous impact on children’s lives as well as the lives of their families and society as a whole. Treatment for those at a higher risk is a recognized challenge, especially among those from a lower socioeconomic status or minority backgrounds. Referrals, if necessary, for follow-up may not occur in many cases due to economic, cultural, health literacy, language proficiency, and educational disparities. Therefore, an additional counseling is required to inform parents and youth about the benefits of follow-up therapy.

Conclusion: Opportunities to help families mitigate the harmful effects of adversity, inequalities, and exposure to violence need to be considered and nurtured to help make a difference in the life of a child. While the direct effect that wars have on children is well understood, the indirect effects that unrestricted access to terrorism views have on children is not only less understood but also important to understand. Dismissal of the detrimental mental and emotional effects on children, despite the available evidence, will only add to the societal burden from the emotional stress and suffering. With better awareness and proper measures to monitor children’s access to violent acts, we can improve their quality of life and the future of our society.
IS THE UNITED KINGDOM DEPARTMENT OF HEALTH RECOMMENDATION OF VITAMIN D SUPPLEMENTATION ADEQUATE FOR NEONATES?

Catherine Baker, Chloe Ann Cheang & Mando Watson

Introduction: In England, approximately 1 in 6 children and 1 in 5 adults are Vitamin D deficient. A consequence of this in children and neonates includes rickets, seizures, tetany and cardiomyopathy. In July 2016, the United Kingdom Department of Health (DoH) recommended the following: “Babies from birth to one year old who are exclusively breastfed should receive supplements containing 8.5 to 10 micrograms” (of Vitamin D daily).

Purpose: To use the opportunity offered by a cohort of well neonates (with prolonged jaundice) to explore whether the above recommendation was adequate for the population group studied.

Materials and Methods: Two data-sets were analysed (April 2016-June 2016 and January 2013-December 2014). In total 251 neonates seen in prolonged jaundice clinic in a central London hospital had Vitamin D levels measured.

Results: 99.56% (250) had suboptimal levels of Vitamin D (less than 75nmol/l). 28.29% (71) had critically low levels of less than 10nmol/l. Treatment with Vitamin D was given in accordance with local guidelines, and followed by a daily supplement dose.

Conclusions: This study highlights that the DoH recommended dose of Vitamin D may be insufficient in neonates as these babies require treatment of the Vitamin D deficiency prior to starting the recommended supplementation dose. We recommend that patients in the ‘at-risk’ groups, including the exclusively breastfed babies, should receive a treatment or higher dose of Vitamin D prior to starting the currently-recommended supplementation dose.
IMPLEMENTATION OF PEDIATRIC EARLY WARNING SCORE; ADHERENCE TO GUIDELINES AND INFLUENCE OF CONTEXT

Ann-Charlotte Almblad1, Petra Siltberg1, Gunn Engvall1, Mats Målqvist1

1 Department of Women’s and Children’s Health, Uppsala University, Uppsala, Sweden

Background: Early recognition of severely ill children and the subsequent appropriate intervention is necessary to prevent deterioration and cardiac arrest. The Pediatric Early Warning Score (PEWS) is a scoring system (0-9) developed for children.

Aim: To describe data of PEWS registrations and to evaluate the implementation of PEWS by examining adherence to clinical guidelines based on measured PEWS, and to relate findings to work context.

Method: PEWS, as a part of a larger concept called Early Detection and Treatment- Children, (EDT-C) was implemented at three wards at a Children’s Hospital in Sweden. The Promoting Action on Research Implementation in Health Services (PARiHS) framework was used as a model for the implementation. Data was collected from the Electronic Patient Record (EPR) over a study period of 10 months after implementation. The Alberta Context Tool (ACT) was used to assess work context among healthcare professionals (n=110) before implementation.

Results: Majority of PEWS registrations in EPR were 0-2 whereas 10% were 3-9. Adherences to ward-specific guidelines at admission and for saturation in respiratory distress were high whereas adherence to pain assessment was low. There were significant differences in documented recommended actions between wards. Some differences of leadership and evaluation between wards were identified.

Conclusion: Evaluation of the implementation of PEWS indicated frequent use of the tool despite most scores being low, signifying that the majority of hospitalized patients are in a stable condition according to PEWS. Documentation of the consequent recommended actions was however incomplete and there was a large variation in adherence to guidelines. Contextual factors, such as leadership and evaluation, may have an impact on adherence.
VIRTUAL REALITY AND VACCINATION: SEE THE SEA AND BE PAIN-FREE?

Authors Zoë Silverberg, Mark Silverberg MD, FAAP, John La Puma MD, FACP Affiliation: Sansum Clinic (ZS, MS), Chef Clinic (JL), Santa Barbara, CA USA

Introduction: Views of nature have been shown to lower stress levels in children, and Virtual Reality (VR) goggles are an accessible, imaginative technology.

Purpose: We created a pilot program using VR goggles displaying ocean scenes to improve kids’, parents’ and clinic staff experiences during routine influenza vaccination.

Methods: In a pediatric influenza clinic, consecutive children (and their parents) were randomized into separate rooms to receive either their vaccinations wearing goggles (VR group), or usual care (control). Patients in the VR group watched 3-D ocean scenes for approximately 30 seconds total, before and during vaccination. After vaccination, a self-administered questionnaire (face/pain scale range 0-10) was distributed to parents, children, and staff in each group. Children unable to self-administer the questionnaire were read the questions by their parents. Outcome measures included: fear, pain, desire for future VR, VR relaxation, and staff ease in administering the vaccine.

Results: 244 children (range 2-16 years, VR group mean age 8.4 +/- 3.7, control mean age 7.0 +/-3.9) received vaccines and completed the questionnaires. 112 kids were in the VR group, and 132 in the control (63 control girls, 69 control boys, 54 VR girls, and 58 VR boys. Children using VR reported 48% less pain (1.54) than controls (2.95)(p<0.01). VR children reported 52% less fear (1.97) than controls (4.12)(p<0.01). Parents’ perception of their child’s pain (1.50) in VR group was 45% less than that of parents of controls (2.70), p<0.01. Parents’ perception of their child’s fear (2.01) in VR group was 52% less than that of parents of controls (4.16)(p<0.01). Staff reported VR children had 74.7% less pain (0.82) than controls (3.24), p<0.01, and 71.3% less fear (1.26) than controls (4.39)(p<0.01). Staff noted 85% improved ease giving vaccinations to VR group children (0.43) compared to controls (2.76)(p<0.01). In VR group, parents, children, and staff noted improved relaxation (89.2%, 86.9%, 94.8% respectively) compared to prior vaccinations. 93% of children and parents in VR group desired VR for future vaccinations.

Conclusions: For children and parents, ocean scenes viewed through VR goggles significantly decreased pain and fear in pediatric patients receiving influenza vaccine. VR use significantly eased the vaccination process for staff.
HIGH CAPABILITY OF PREDICTION FOR THE ECHO-COLOR-DOPPLER IN PAEDIATRIC VARICOCELE

Giorgio Bolla

Department of Paediatric Urology - O.C. Dolo - Italy

Introduction: The diagnosis of left idiopathic varicocele has to be instrumentally confirmed, especially in lower degrees of varicocele and for a careful anatomic settlement.

Purpose: The diagnostic study by echo-color-doppler with pulsatory peculiarities, in case of supposed left paediatric varicocele, could reveal itself highly sensible for prediction?

Methods: We have employed a linear probe – 7,5 MHz.

Results: To most boys – 87% - with varicocele at stage 0 – or in the presence of instrumental positiveness, alone – and at stage 1 the echographic verification of inside reflux of the spermatic cord had been developing, subsequently, to outside reflux of the funiculus (the mean follow-up was 8 m. and 14 d.).

Conclusions: Therefore we believe the careful employment of the echo-color-doppler, in absence of the functional spermatic study, as a meaningful therapeutical indication and, furthermore, an efficient method of screenings.
LEEDS RECAP INITIATIVE: 5 STEPS TO FEWER CARDIAC ARRESTS

Khurram Mustafa

Introduction: The incidence of cardiac arrest in paediatric intensive care is 2% to 3% (1) with a mortality of 35% to 40% (2). Long term consequences include neuro-disability, prolonged hospital stay and increased demands on financial and human resources. Between August 2015 and July 2016, at least 7% of admissions in PICU at LTHT had a cardiac arrest with return of spontaneous circulation achieved in 87.7% and 70% survived to hospital discharge.

Purpose: An innovative quality improvement project aimed to reduce the number of cardiac arrests and consequently reduce morbidity and mortality at paediatric intensive care at Leeds children’s hospital.

Materials and Methods: Intensive care is an extremely vigilant and controlled environment, where deterioration is recognized early and in some cases, can also be anticipated. We reviewed recent cardiac arrests and conducted a team working and safety climate survey to identify common themes and areas for improvement.

Based on input from the front line team, we have designed the ReCAP initiative (Reviewing Cardiac Arrests in PICU) with a multi-dimensional approach, in order to address gaps in knowledge and experience, encourage a learning culture and support clinical staff.

There are five arms to this project including a novel concept of pre-brief, de-brief, uniformity in documentation, timely reporting and simulation based training for staff based on learning from previous episodes of cardiac arrest.

Pre-brief has been used in aviation industry to discuss anticipated complications and check understanding of staff involved. In PICU, if a child is considered to be at risk of cardiac arrest on admission or during safety huddles, a senior clinician will lead a group pre-brief to discuss pathology, awareness of deterioration, immediate plan and role allocation in case of a cardiac arrest as well as check understanding among team members.

Results: The project was formally launched on 1st January 2017. So far we have managed 27 days without a cardiac arrest, which is the longest run in the studied period of 12 months. From initial feedback, nursing and junior medical teams already feel more empowered and confident about their responsibilities.

Conclusion: This will improve the knowledge and skills among staff and foster a culture of more proactive clinical management and escalation of treatment for deteriorating patients. This can be spread to wider population and other areas can follow the lead with necessary modifications according to setting and patient cohort.
ANTIEPILEPTIC MEDICATIONS USED FOR CHILDREN WITH EPILEPSY AND THE IMPORTANCE OF NURSING APPROACH IN MEDICATION ADMINISTRATION

Şerife Tutar Güven*, Ayşegül İşler Dalgıç

Introduction: Epilepsy is a condition that results from various pathological processes in the brain. Long term antiepileptic medications are generally used in the treatment of epilepsy when it is a frequent, chronic neurological disease in childhood.

Purpose: The purpose of this collection is to emphasize antiepileptic medications that are commonly used in the treatment of children with epilepsy and the importance of nursing approach in the medication administration.

Materials and Methods: This research is literature review article.

Results: Nurses have important roles in the management of antiepileptic medication treatment, as well as the nursing interventions related to evaluation, patient and family education and providing emotional support. The side effects of long term use of antiepileptic medications may cause considerable stress for the child and family. The side effects of most antiepileptic medications are temporary and related to the dose. However, medication reactions require emergency action. The dose-related side effects such as vertigo, headache, ataxia, and sleepiness disappear over time, or when the dose is reduced. Medication reactions require clinical assessment, and it may be necessary to monitor the serum drug level. In particular, the combination treatments with barbiturate and carbamazepine may increase medication levels in the blood. Taking the antiepileptic medications as prescribed is important in order to maintain a medication blood level in children with epilepsy. The nurse should help the family to establish a medication schedule to avoid disrupting the daily routine of the family. The doses should be planned considering the half-life of the medication and the age of child. The medications with a longer half-life are administered less frequently and the missing doses have fewer negative effects than medications which have a short half-life. The aim is to establish a medication routine that fits with family life. This can increase drug compliance. Experts believe that the best times to take medications are before bedtime or at meal times. The antiepileptic medications should be administered regularly, and it is important that the family understand and apply this.

Conclusion: Pediatric nurses have important responsibilities in respect to the effective management of the treatment process and reducing the risk of side effects. The management of the antiepileptic treatment process is an important part of the care provided to the child with epilepsy.
PROFESSIONAL VALUES, JOB SATISFACTION LEVELS AND AFFECTING FACTORS OF PEDIATRIC NURSES IN TURKEY

Ayla Kaya*, Derya Çelik, Ayşegül İşler Dalgıç

Introduction: Professional values in nursing much significance in regard to developing quality nursing care. It is of utmost importance to encourage nursing professionals to acquire professional values and job satisfaction so as to ensure the development of a professional identity and improve nursing practices.

Purpose: This descriptive and cross-sectional study investigated the perceptions of professional values and job satisfaction levels of pediatric nurses and the factors affecting them in Turkey.

Materials and Methods: In this research, pediatric nurses who agreed to participate (N=134) were studied in the children’s clinics of three hospitals in Turkey, without sampling method between the February-August 2016. In collecting the data, a questionnaire that determines the characteristics of nurses, Nurses’ Professional Values Scale and Minnesota Job Satisfaction Questionnaire were used. The data analysis was conducted with frequency and percentage distribution, arithmetic mean, variance analysis (ANOVA), t test, Tukey test and Pearson correlation analysis. It has been obeyed to the ethical principals in the research.

Results: The mean score was found to be 3.87±0.58 for the Professional Values Scale. It was further noted that professional values scores were higher among pediatric nurses if they were single, with a nursing high school education, with a professional experience 11-15 years in children’s clinics, working as clinical responsible nurse, working at day shift steadily (p<.05). The average scores for job satisfaction were 3.40±0.71 for overall satisfaction. It has been found that in this study, job satisfaction of pediatric nurses who married, with a nursing high school education with a professional experience 11-15 years in children’s clinics, working as clinical responsible nurse and working at day shift steadily was significantly higher than the other (p<.05). The results also indicated a positive and high correlation between pediatric nurse’ perception of professional values and job satisfaction levels.

Conclusion: The study results suggested that nurses appreciated the significance of professional values. It was also pointed out that nurses had a job satisfaction at a moderate level and the levels of professional value and job satisfaction varied in relation with certain demographic ana professional characteristics. Furthermore, the researchers concluded that that pediatric nurses had higher levels of perception of professional values would certainly result in higher levels of job satisfaction.
Introduction: Diagnosis of pulmonary tuberculosis (TB) rests on the demonstration of acid fast bacilli (AFB) in respiratory samples. Since children usually do not expectorate sputum, national and international guidelines recommend examining two gastric lavage (GL) specimens to confirm the diagnosis. However, pediatric TB is paucibacillary and AFB are shed intermittently; hence two GL samples may be inadequate for diagnosis.

Purpose: To examine whether additional gastric lavage specimens increase diagnostic yield in childhood tuberculosis.

Materials and Methods: In our institution, children with suspected pulmonary TB (based on clinical and/or radiographic grounds) are offered GL on two consecutive mornings, followed by broncho-alveolar lavage (BAL) if both samples are smear negative. We changed this practice for 12 months, obtaining multiple GL specimens. Bronchoscopic BAL was reserved only for children in whom multiple GL samples were negative. Once a sample showed AFB, no further samples were taken.
Results: Of 287 children admitted to the Pediatric Pulmonology Unit, TB was suspected in 94. AFB was detected in 40 children- 27 in GL samples, 10 in BAL samples, 2 in lymph node aspirates, and one in pleural fluid sample. The median number of GL samples obtained was 5 (range 1-9). Figure 1A shows the cumulative yield of AFB with each additional GL sample obtained. Only 11 of 27 (40%) samples tested positive in the first two GL samples; thus 60% cases were diagnosed by obtaining additional GL samples. Among 44 children in whom multiple GL samples were negative, BAL demonstrated AFB in 10 (Figure 1B). Obtaining additional GL samples resulted in avoidance of bronchoscopy in 16 children.

Conclusion: The diagnostic yield was more than doubled by obtaining additional GL samples (beyond the two recommended). There were small increments after the fifth GL sample, suggesting that 5-6 samples may be optimal in children. BAL in children with multiple negative GL samples further increased the diagnostic yield. We suggest that at least five GL samples should be obtained to confirm pulmonary tuberculosis in children, followed by BAL if all GL samples are negative.
EPSTEIN-BARR VIRUS - UNDERESTIMATED PATHOGEN IN CENTRAL NERVOUS SYSTEM PATHOLOGIES IN CHILDREN.

Katarzyna Mazur-Melewska, Magdalena Figlerowicz, Anna Mania, Paweł Kemnitz, Wojciech Służewski

Department of Infectious Diseases and Child Neurology, Karol Marcinkowski University of Medical Sciences Poznań, Poland

Introduction: Epstein-Barr virus (EBV) infection is known as infectious mononucleosis (IM) with classical symptomatology: lymphadenopathy, hepatosplenomegaly. The central nervous system is not the prime location for viral pathology, the neurological complications are reported rarely as: encephalitis, meningitis, cerebellitis, myelitis, radiculitis.

Purpose: The aim of this study was to evaluate EBV encephalitis taking into account: the spectrum of neurological symptoms, abnormalities found in magnetic resonance imagination (MRI) and electroencephalography.

Materials and Methods: Retrospectively we analysed the documentation of 210 children (aged 1–18 years, mean 5.05±2.33) with EBV infection hospitalized in the Department of Infectious Diseases and Child Neurology in Poznań, Poland in 2011–2016. Among them we found 8 children (3.8%) with EBV-related encephalitis. They were 2 girls and 6 boys (aged 1.5–17 years; mean 6.87±2.78). Three of them had been chronically ill before contracting EBV-encephalitis: two had epilepsy and developmental disability, one had cystic fibrosis. Two others had head malformations: Joubert syndrome and frontal sinus aplasia. EBV infection was confirmed by the presence of the viral capsid antigen IgM antibody, then negative and/or positive cerebrospinal fluid polymerase chain reaction (PCR). All patients were treated with intravenous acyclovir with a dosage of 30mg/kg/ day. The average therapy lasted for 14–21 days.

Results: Encephalitis was diagnosed in 3.8% chidren with EBV-related infection. Three patients presented classic IM with lymphadenopathy, hepatosplenomegaly. All children presented non-specific prodrome, such as fever, headache and loss of consciousness. Six children had seizures. All patients demonstrated cerebrospinal fluid lymphocytic pleocytosis and increased protein concentration. MRI examinations performed immediately after admission revealed pathologic lesions in six patients (mainly disseminated, hyperintensive lesions located in the white matter). These lesions disappeared after 3 months in one child. The remaining children presented different pathologies, such as ventriculomegaly or brain atrophy [Fig1].

Only one of the eight patients was free of neurologic sequelae at the 6-month follow-up. In two patients who had been diagnosed with epilepsy before encephalitis, the EEG re-examination showed no progression. Their MRI did not reveal EBV-related pathology. The rest of the children presented very severe consequences including epilepsy, encephalopathy, four limbs paralysis and optic nerve atrophy.

Conclusions: The risk of contracting encephalitis in EBV-encephalitis measured at 3.8%. Pathogen seems to be underestimated in CNS infections pathology, because the patients do not present IM symptoms at the same time.
SIDEROGENIC ANAEMIA AND INFECTIONS DISEASE IN CHILDREN

V. Grajcevci-Uka, R. Maxhuni, B. Abrashi, F. Selimi

UCKK, Pediatric Clinic, Hemato-Oncology Department

Background and aims: The body needs iron to make hemoglobin. If there isn't enough iron available, hemoglobin production is limited, which in turns affects the production of red blood cells (RBCs). A decreased amount of hemoglobin and RBCs in the bloodstream is known as anemia. Because RBCs are needed to carry oxygen throughout the body, anemia results in less oxygen reaching the cells and tissues, affecting their function. Aim of the study. To present the patients with sideropenic anaemia associated with other diseases.

Methods: In our study we have included 200 children of different group-ages with sideropenic anaemia hospitalized in Hemato-Oncology Department of Pediatric Clinic. The diagnose is made based on history, physical examination and laboratory data.

Results: Anemia associated with any other disease was present in 117 cases (58.5%) while as the main disease was present in 83 cases (41.5%). Sideropenic anaemia as a main disease has showed significant difference (Chitesti = 5.78). In the total number of our patients with sideropenic anaemia the most frequent associated diseases were gastrointestinal diseases with 30 cases (25.6%), followed by respiratory diseases in 27 cases (23.1%), haematological disease with 21 cases (17.9%), with urogenital disease 13 cases (11.1%), cardiovascular diseases with 5 cases (4.3%) and malnutrition with 4 cases (3.4%).

Conclusions: The most common diseases that have followed sideropenic anaemia were respiratory infections, gastrointestinal and hematological diseases. Repeated infections has an impact on the appearance of sideropenic anaemia in children. Key words. Sideropenic anaemia, iron, associated factors.
CLINICAL AND GENETIC FEATURES OF SCHWARTZ-JAMPEL SYNDROME IN A CHINESE CHILD: A FOLLOW UP AND LITERATURE REVIEW

Lifang Dai*, Dai Lifang*, Fang Fang, Huang Yu, Cheng Hua, Ren Changhong

Introduction: Schwartz-Jampel syndrome is a rare autosomal-recessive hereditary disease caused by GALC gene mutations.

Purpose: To investigate the clinical and genetic features of a Chinese girl with Schwartz-Jampel syndrome (sJs).

Materials and Methods: Reports on Schwartz-Jampel syndrome published until November of 2016 were searched and the clinical and genetic characteristics of reported case were summarized.

Results: At 8 months after birth, the girl showed myotonia: at 1 year old when she was walking alone she had myotonia of lower limbs, both feet evaginated, walked slowly and was prone to fall. At 2 years of age, she could not climb up stairs, at 3 years she could not jump continuously. At 3 years and 7 months of age when the girl was on examination in hospital, she had a dull facial expression, rigid lips and could not fully open her mouth, a micromandible, low-set and prominent ears, systemic muscle rigidity, there were muscular nodes formation on the limbs and gait stiffness. She had high level of creatine kinase and atlantoaxial joint subluxation on cervical CT reconstruction. She also had spontaneous myotonia-like discharges on needle electromyography (NEMG). X-ray of limbs showed metaphyseal dysplasia. The patient was treated with neurologic rehabilitation and carbamazepine. The myotonia at the last follow-up at her 9 years 4 months of age was the same as at the onset. On her HSPG2 gene, two heterozygous mutations c.10776delT on exon 78 and C.5702-5G >A on intron 45 were found. This is the first Chinese patient diagnosed as Schwartz-Jampel syndrome with HSPG2 gene mutations, while 8 reports were found in English literature. The total 36 mutations were known in reviewed reports. Which included eleven deletion or insertion, twelve splice site, ten missense, and three nonsense mutations.

Conclusion: Schwartz-Jampel syndrome is a rare autosomal-recessive hereditary disease appears to be slowly progressive, in which distinctive clinical features were induced by HSPG2 gene mutation. This is the first report of Schwartz-Jampel syndrome of which genetic mutations was identified in a Chinese child reported by us before.
THE EFFECT OF HYALURONIC ACID IN CHILDREN WITH UPPER AIRWAY INFLAMMATION

M. Casale 1, V. Grimaldi 1, P. Vella 1, L. Sabatino 1, A. Moffa 1, M. Lopez 1, P. Baptista 2, P. Ferrara 3 and F. Salvinelli 1.

Affiliation: 1-Unit of Otolaryngology University Campus Bio-Medico, Rome, Italy, 2-Department of Otolaryngology, University of Navarra, Pamplona, Spain, Unit of Pediatrics University Campus Bio-Medico, Rome, Italy

**Introduction:** Inflammatory disease of upper airway in pediatric population represents a social problem for both the pharmaco-economic impact and a burden for the family. 20% of children < 5 years of age suffered from upper respiratory tract infections (URTI). The 90% of the infections is viral but despite the recommendations of the pediatric scientific societies against the prescription of antibiotics in routine clinical practice for acute and chronic upper airway inflammations (UAI) in children, the total antibiotic consumption in children remains high. Evidence suggests an irrational and often excessive consumption of antibiotics in this age group can leading to antibiotic resistance, and in turn the prescription of newer, broad-spectrum antibiotics, with resulting increases in health care expenses.

**Purpose:** The purpose of our research was to analyze the previous studies based on the use of Hyaluronic Acid (HA) in children and evaluate its potential effectiveness in the treatment of UAI in pediatric population.

**Materials and methods:** Recent evidence suggests that topical therapies have become an integral component in the management of UAI, allowing drug delivery directly into diseased tissue with higher local drug concentrations and minimizing systemic absorption. It’s proven that low molecular weight HA protects the airway epithelium against injury induced by bacterial products during infection by acting as a lubricant at the airway epithelium surface and thus suggesting that HA may plays a therapeutic role in a variety of respiratory diseases. Formulations of HA have recently been developed as a coadjuvant treatment in clinical cases of acute and chronic UAI and in tissue healing after upper aero digestive tract (UADT) surgery.

A systematic review of the recent literature regarding on the potential therapeutic effects of topical HA, alone or in association, in the UAI in the pediatric population will be presented, included children affected by cystic fibrosis (CF). We also perform a special focus on the most common devices currently used to administer substances in nasal and sinus cavities.

**Results and Conclusions:** Nebulized HA, thanks to its antibacterial and immunostimulant properties, could have a potential role in children affected by recurrent upper respiratory tract infections, also in CF patients to prevent acute exacerbation, with a significant improvement of their quality of life and limiting the abuse of antibiotics.

The device for nebulization should be tailored to patient and UADT disease to guarantee a better delivery of high concentrations of pharmacologic agents to the mucosa of the UA and optimize child’s compliance.
PARENTAL UNCERTAINTY ABOUT CHILD GROWTH AND DEVELOPMENT

Helen Mulcahy* 1

1School of Nursing and Midwifery, University College Cork, Cork, Ireland

Introduction: Preventative child health services in Ireland are underpinned by a progressive universalism model, staffed primarily by Public Health Nurses (PHNs) and Community Medical Doctors. Delays in child growth or development present significant problems for children, their families and population health. Eliciting parental concerns as early as possible to promote child growth and development requires close collaborative working with parents. There is evidence that parents delay expressing concern and that health care professionals (HCPs) are not always effective at eliciting and attending to parental concerns.

Purpose: The aim of this study was to understand the experiences of parents of pre-school children who had expressed a child growth or development concern.

Materials and Methods: An Interpretative Phenomenological Analysis (IPA) study design was used with a purposive sample of parents of 15 pre-school children. Semi-structured interviews were used to collect data. Data were managed using NVivo 10 and analysed using IPA. Rigour was established.

Results: The sample varied on: socio-economic status, type of developmental concern; when parents first experienced a concern about their child; and when they expressed that concern to a HCP. Four superordinate themes were identified, namely; Uncertainty – ‘a little bit not sure’, Parental Knowledge, Triggers to action and Getting the child’s problem checked out. One key superordinate theme - Uncertainty – ‘a little bit not sure’ captured how parents made sense of their concerns about their child’s growth and development. This main theme emerged from two subordinate themes of ‘appraising the concern’ and ‘wondering about the cause’. In addition to watching, comparing and wondering, parents assessed whether their child could ‘do other things’ or if something in particular could have caused the growth or development problem.

Conclusion: Parents, particularly mothers, grappled with uncertainty in their efforts to make sense of what is happening with their child. Parents’ concerns may be verbalised subtly or obliquely therefore HCPs should not reassure inappropriately. If no abnormalities are evident then a strategy needs to be put in place in collaboration with parents to monitor for a specific period and then review and/or refer. It is vital for HCPs to facilitate parents in expressing concerns at an early stage to expedite early intervention for child growth or development concerns.
Introduction: In all over the world, child neglect and abuse is an important social problem that has got a lot of dimensions. Especially, in child sexual abuse cases, health professionals take an important place in determining case, symptoms, starting legal process and studying for the children’s not affecting from event.

Purpose: This study was conducted to determine general overviews and knowledge of health professionals related to medical, legal, announcement and social processes in child sexual abuse.

Materials and Methods: The study was conducted with 216 professionals worked at a child hospital in Ankara city center between 01.10.2014-30.04.2015, as descriptive. Data was evaluated by using mean, frequency, percentage and chi-square tests.

Results: The average age of professionals was 31.33±6.72 (19-55), working year of them was 9.18±7.24 (1-35) and most of them were married, graduated from university, nurse and worked at a clinic. All of them stated that they heard about abuse but 30% of them took education about this subject and 40.3% them met with sexual abuse. It is found that their knowledge level about abuse symptoms and things that should be done, first announcement unit, punishes when it isn’t reported, legal and social process was low.

It is found that men perceived physical and emotional abuse less and perceiving level of physical abuse increased with increased education level (p<0.05). Professionals who haven’t got any child knew the children at risk, better (p<0.05). It is determined that with increased working year, health professionals knew the risky children, understood sexual abuse and knew its legal responsibilities and dimensions, better (p<0.05). The professionals who have children knew better that men and any person from every distinct of society could be abuser, (p<0.05). Again, it is found that professionals who took education about abuse knew determination of abuse symptoms, legal responsibilities and dimensions (p<0.05). Also, the difference between increased age and knowing level of legal responsibilities and dimensions was found as significant (p<0.05).

Conclusion: It is determined that knowledge levels of health professionals about diagnosis, announcement, legal and social processes in child sexual abuse were low. It is suggested that their awareness should be increased with regular educations about subject.
HOW DO VIOLENCE AND TOXIC STRESS AFFECT THE DEVELOPING BRAIN – EXPERIENCES OF CHILD NEUROLOGIST

Vanja Saftic

Introduction: The effects of negative environmental factors (abuse and neglect) in childhood result in neuro-biological changes, which consequently may cause changes to the cytoarchitecture of the brain, and reduce or converge the capacities and potentials of the child. Exposed to powerful, frequent and/or prolonged negative factors (physical, and emotional abuse, neglect, and parental mental illness or dependency) without adequate support from adults, prolonged hyperactivation of the neurological and endocrinological system occurs. This state is known as toxic stress. It causes short-term consequences, which are manifest in neuro-developmental disorders, and cognitive and psychosocial deficit. The long-term consequences occur through the multi-organ response to toxic stress, and acceleration of risk factors for premature death and morbidity in adulthood. Children exposed to toxic stress have specific neurodevelopmental disorders significantly more frequently. The clinical picture may frequently imitate ADHD, with emphasis on the fact that in these children the hyperactive component is significantly less expressed, but there is more impulsiveness. In the EEG results there is a significant number of dysrhythmic, irritative changes, and in especially brutal forms, epileptogenic activity.

Purpose: The aim of this study was to estimate preliminary results of a multi-disciplinary clinical assessment of patient came to our institution because of adverse childhood experiences.

Materials and Methods: In Child Protection Centre Zagreb we monitored 694 children came because of abuse and/or neglect, prospectively during 2015, 2016. Our multidisciplinary team of psychiatrist, psychologist, social worker and child neurologist evaluate tests.

Results: Performing EEG we found that children with adverse childhood experiences had changes in EEG. In case of hard trauma, EEG showed dysrhythmic activity in 43.2%, and pathological changes in 23.2%. Also with severe forms of abuse and neglect children had a BMI above 85 in 51% of cases. Learning and behavior problems we detected in 56%.

Conclusion: In order to understand better the processes of the effects of toxic stress on the developing brain and identify forms of intervention, we have to apply several levels of study - scientific and theoretical, empirical and professional. An integrative paradigm in an approach to neurodevelopmental disorders caused by negative environmental factors provides the conceptual framework for further insight.
DETERMINATION SOCIAL ACCEPTANCE LEVEL OF DISABLED PEER BY THE STUDENTS AT PRIMARY SCHOOL SECOND DEGREE AND SECONDARY SCHOOL INSTITUTES

Elif Koyuncuoğlu*1, Sibel Küçük2

1Nursing, Bezmialem Vakif University Health Science Faculty, Istanbul, 2Nursing, Yıldırım Beyazıt University Health Science Faculty, Ankara, Turkey

Introduction: Disabled children can face many problems, especially pity, ridicule, avoidance or excessive protective behavior at school.

Purpose: This study was conducted to determine social acceptance level of disabled peer by the students at primary school second degree and secondary school institutes.

Materials and Methods: Total 580 students who studied to primary school second degree and secondary schools that bound to Directorate of National Education in Balıkesir city Bandırma village and accepted to participate to the study were consisted of the sample. Data was collected with descriptive survey form and 'Social Acceptance Scale'. Level of acceptance of disabled students with high scores on the scale is assessed as high, the acceptance level of the low points is assessed as low. For analysis, median, chi-square, percentage and Mann-Whitney U tests were used.

Results: It is determined that of the students; 50.2% were girl, 50.3% were studying at primary second degree, 49.7% were studying at secondary school, 9.1% had got a disabled member in family, %4.5 had a disabled peer in class, 53.7% knew a disabled person out of family. It is found that age, gender and studying with disabled peer affected social acceptance (p<0.05). With increased age social acceptance scores increased, scores of girls were higher than boys and scores of the students who studied with a disabled peer in class were lower.

Conclusion: It is suggested that disability education should be given to the students in order to increase acceptance levels of them related to disabled peers and the studies should be done that increase collaboration of nurses in school health team.
PERSONALIZED INTERDISCIPLINARY NETWORK CARE SINCE PREGNANCY ENHANCES MATERNAL AND INFANT OUTCOMES AND PROTECTS THEIR RELATIONSHIP IN CASE OF MATERNAL PSYCHOPATHOLOGY.

Françoise Molénat¹, Danae Panagiotou²

¹AFREE (Association for Research and Training on the Infant and its Environment), Montpellier, ²Department of Psychology, University of Franche Comté, Besançon, France

**Introduction:** The rapprochement of the reproductive and infant disciplines has led to new practices and policy changes. Evidence about early brain, emotional and psychomotor infant development has highlighted the importance of antenatal prevention and early intervention.

In Montpellier, S.France, collaborations between the departments of obstetrics, neonatology and child-psychiatry started in 1978 and a new paradigm of perinatal care emerged: the personalized interdisciplinary network care (PINC). The PINC’s objective is the maternal and infant health promotion since pregnancy by providing a coherent environment and integrating all health components into the obstetric-pediatric care.

**Purpose:** In 1986, to provide an educational framework for PINC, a regional interdisciplinary peer-training took place in Montpellier with professionals of the perinatal period (15 sessions in 3 years) and under the conjoint impulsion of the child-psychiatry departments of the University Hospital and the Association for Training and Research on the Infant and its Environment. The goals were to ensure the sustainability of the PINC and empower the effective interdisciplinary team function and interpersonal skills. The principles for peer-educators trainings were established and the first one started in 1989 (4 sessions in 2 years).

**Materials and Methods:** In 1995, a scientific, pedagogic cases’ review method (CRM) was developed. The CRM is based on the multidisciplinary, prospective presentation and analysis of complex cases with emotional/medical risk. A coordinator pauses at key moments and the multidisciplinary public can make diagnostic hypotheses, risk analysis and suggest tools and interventions. The parental care plan compliance and the infant development quality permit to validate their suitability.

**Results:** Since the first meetings, the CRM has been disseminated and applied in more than 50 French cities and 10 countries. In 2007, a guide circulated to France, Canada, Belgium, Switzerland, Brazil and Chile. Furthermore, the CRM experience led to the creation of new tools for the PINC, like the Early Prenatal Interview, the coordinator midwife, the antenatal pediatric visit.

**Conclusion:** Besides a learning environment, the CRM brings together professionals of different fields and countries. It fosters the interprofessional exchanges, the good practices dissemination, the existing tools evaluation and the innovation of new ones. This dynamic process ensures the continuity through all perinatal stages, the milestone of the perinatal health.
AN INNOVATIVE INTERDISCIPLINARY TRAINING METHOD PROMOTES THE COLLABORATIVE CARE AND ENSURES THE MATERNAL AND THE INFANT WELL-BEING SINCE PREGNANCY.

Danae Panagiotou*1, Françoise Molénat2

1Department of Psychology, University of Franche Comté, Besançon, 2Child Psychiatrist, AFREE (Association for Research and Training on the Infant and its Environment), Montpellier, France

Introduction: Research about early brain, emotional and psychomotor development has confirmed the significant impact of perinatal period and the importance of prevention and early intervention. In France, new interdisciplinary practices and health policies were created. Since 1986, the Personalized Interdisciplinary Network Care (PINC) emerged as a new paradigm of perinatal healthcare for pregnancies at high emotional/medical risk. However, the question concerning its efficacy remains unanswered.

Purpose: Our objective was to assess the impact of the PINC on the infant development, the maternal well-being and the mother-infant relationship in case of maternal psychopathology.

Materials and Methods: We did a first study on 153 infants with functional troubles met between 2–28 months at the perinatal child-psychiatry center. The infants were classified into those whose parents had antenatal PINC (AG=60) and those whose parents had only classic obstetric and midwife follow-up (PG=93). Their development was evaluated with a Bullinger Sensorimotor and a psychomotor exam.
In a second study we evaluated the PINC impact on 59 women presenting psychopathology during pregnancy and their infants. The maternal well-being was assessed between 3-18 months postpartum by a semi-structured clinical interview and self-report scales measuring postpartum depression (PPD), anxiety and birth-related post-traumatic stress (BR-PTSD). The infants’ psychomotor and emotional development was assessed by the Revised Brunet-Lezine and the Alarm Distress Baby scale.

Results: We found that 67% of the PG infants had sensorimotor particularities and psychomotor retardation contrary to a 36% of the AG infants. This significant difference persisted at all ages. Interestingly, when PINC was provided, the correlation between the maternal psychopathology and the infant’s development was diminished as we found positive psychomotor development and mother-infant interactions. Moreover, contrary to previous studies, only 39% of antenatal depression evolved into a PPD. Last, we found a correlation between the BR-PTSD and the manifestation of PPD.

Conclusion: Screening of vulnerable mothers, prevention during pregnancy and early psychomotor intervention are the milestones of perinatal health promotion. A traumatic birth experience seems to trigger maternal depression. However, the links between BR-PTSD and PPD require further investigation. The PINC since pregnancy reduces the risks for later infant developmental troubles and PPD and is an effective preventive approach.
WHAT CAN PLACENTA TELL US ABOUT PREGNANCY COMPLICATED BY WELL - CONTROLLED - TYPE 1 DIABETES

Marie Jirkovská¹, Tomáš Kučera¹
¹Charles University, First Faculty of Medicine, Prague, Czech Republic

Introduction: The influence of mother on fetus is mediated by placenta and the response of fetus to maternal milieu demonstrates itself in placental structure. Maternal diabetes has negative influence on fetal well-being as well as on long-term health of the offspring, and appropriate metabolic control is necessary for prevention of fetal and maternal complications. However, despite good metabolic control achieved during pregnancy, the placentas may display altered structure.

Purpose: Placental terminal villi carrying out materno-fetal transport grow and develop during the whole third trimester. Here are presented results of quantitative studies of villous angiogenesis, differentiation and apoptosis in the capillary wall, villous proliferative potential and telomere length in normal term placentas and in placentas from pregnancies in well-controlled maternal diabetes.

Materials and Methods: Fixed and paraffin-embedded placental specimens were used for histology, laser microdissection and immunocytochemical detection of markers of cell differentiation (nestin), apoptosis (caspase 3) and proliferative potential (Ki-67). The analyses were performed by conventional light microscopy, confocal microscopy, qPCR and Leica IM 500 program.

Results: Histological analysis demonstrated altered structure of villous capillary bed that was represented in studied placentas e.g. by villous chorangiosis in nine of sixteen diabetic placentas. The quantitative measurements have shown that terminal villi of diabetic placentas display enhanced capillary branching and altered maturation of capillary wall. The proliferative potential was found lower in cytotrophoblast and capillary wall of terminal villi in diabetic placenta whereas the apoptotic activity in the villous capillary wall and abundance of telomere sequences in terminal villi were not different.

Conclusion: The enlargement of fetal capillary wall area by enhanced branching and chorangiosis and the immaturity of capillary represent an effort to compensate the lack of oxygen in fetus. The lower ability to enlarge the areas of tissues responsible for transport may adversely influence fetal well-being during perinatal period. On the contrary, similar placental weights and similar abundance of telomere sequences in both placental groups show that the good metabolic compensation could avoid telomere shortening described in placentas of poorly compensated diabetic mothers.

Supported by the research project of Charles University Progres Q25.
THE PRESCRIPTIVE APPROPRIATENESS AND THE CORRECT USE OF PEDIATRIC DRUGS

Ettore Napoleone

Family Pediatricians Medicines for Children Research Network (FP-MCRN), President of SIMPe Molise

Introduction: Paediatricians should be aware that the inappropriate use of antibiotics in early children (0-2 years) increases the risk of ADRs and drug resistance. Despite of it is well known that around 80% of respiratory tract infections have a viral etiology, data about pharmaceutical prescription suggest an increasing consumption of antibiotics in the age group (0 and 2 years). The use of these drugs is not always based on scientific evidence, increasing problems in term of efficacy and safety of the therapy.

Objective: PASS (Post Authorization Safety Studies) give much more reliable estimates of the risk of ADRs than those resulting from spontaneous reports. The aim of the FP-MCRN-Study was to evaluate the prescription attitude related to antibiotics in the early paediatric population (0-2 years of age), to encourage the appropriate use of antibiotics in children, and to inform paediatricians about the possible iatrogenic illnesses caused by their improper use. In addition, this study represents a territorial survey of the prescriptive appropriateness and safety of these drugs in the paediatric population, a necessary prerequisite to assess the risk-benefit ratio of their use.

Materials and Method: The FP-MCRN-Study evaluated the antibiotic prescriptions in the pediatric patients between 0-2 years (children number =4060) of 37 Family Pediatricians (FP) in the first phase, the age range showing the highest trend for over prescription. We analyzed the prescription and treatment data from 37 FP using a regional prescriptions database. During the second phase we achieved specific training and educational courses for FP and families on the appropriate use of antibiotics and on the possible iatrogenic illnesses caused by their improper use. In the third phase, both prevalence of prescriptions and the type of antibiotic used and any ADRs (after the training phase) were re-evaluated.

Results: The study showed in the first phase that the prevalence of antibiotics prescribed by the 37 PdF in the 0-2 years (number 4060 children) was 83% (number of children with at least one prescription: 3339) with a number of prescriptions of 7114 (number of pieces required: 8367). After training, a prevalence of 56% (number of children 4116. number of children treated 2327) was noted, with a significant decrease (-27%) compared to 83% in the first phase. There was also a reduction of 2938 requirements (number of entries 4176) and a reduction of 2975 pieces prescribed (number of prescribed items 5392) with a saving of € 18,854.23 (€ 60,950.15 in 2013 and € 42,095.92 in 2015). Finally, there was also an improvement in the prescriptive appropriateness according to Guidelines: Amoxicillin (38%) followed by Amoxi / clavulanic (29.3%), Macrolides (16.3%) and Cephalosporins (15.2%). No ADRs were found in the two years of reference.

Conclusions: The data showed a marked reduction in the prevalence of prescribed antibiotics, a reduction in health spending and an improvement in prescriptive appropriateness after training courses for PdFs, and continued family information on proper use and on ADRs related to abuse Of antibiotics in this age range.
MESENTERIC LYMPHADENITIS: A REAL DISEASE OR JUST A GUT FEELING? COMPARISON OF CLINICAL AND LABORATORY FINDINGS IN CHILDREN WITH ACUTE MESENTERIC LYMPHADENITIS VERSUS THOSE WITH ACUTE APPENDICITIS.

Itai Gross1, Yael Siedner-Weintraub2, Shir Stibbe3, Rekhtman David4, Daniel Weiss5, Natasha Simanovsky6, Dan Arbell7, Saar Hashavya*8

1Department of Pediatrics, Hadassah Ein-Kerme and Hebrew University Hospital, 2Department of Pediatrics, Hadassah Ein-Kerem and Hebrew University Hospital, 3Faculty of Medicine, Hebrew University, 4Department of Pediatric Emergency Medicine, Hadassah Medical Center, 5Surgery, Hadassah and Hebrew University Hospital, Jerusalem, Israel, 6Medical Imaging, Hadassah and Hebrew University Hospital, Jerusalem, 7Pediatric Surgery, Hadassah and Hebrew Univeristy, 8Department of Pediatric emergency Medicine, Hadassah Medical Centre, Jerusalem, Israel

Introduction: Mesenteric lymphadenitis (ML) is considered as one of the most common alternative diagnosis in a child with suspected acute appendicitis (AA).

Purpose: To characterize the anamnestic, clinical and laboratory findings of large and small mesenteric lymph nodes and their differentiation from those of AA.

Materials and Methods: In this retrospective study, patients diagnosed with ML (n=99) were compared in terms of demographic, clinical and laboratory findings to patients diagnosed with AA (n=102). This comparison was applied for both lymph nodes smaller and larger than 10 mm.

Results: When compared to patients with AA, patients with ML had significantly longer duration of symptoms prior to emergency department (ED) presentation (2.4±2.6 vs 1.4±1.4 days, P=0.002), multiple ED presentations (1.3±0.7 vs 1.05±0.3, P<0.001) and had longer duration of stay in the ED (9.2±5.9 vs 5.2±4 hours, P<0.001) respectively. They also had significantly lower WBC (15.8 ± 4.4X10^3/dl vs 10.16±4.7x10^3/dl, P<0.001) with lymphocyte predominance (24.6±14% vs 13±8.7%, P<0.001) and lower CRP levels (0.48 vs 1.6 mg/dl). Migration of pain (28% vs 7%), vomiting (62% vs 34%) and classic abdominal findings of AA (72% vs 20%) were all significantly more common for children with AA. When comparing lymph node size, no significant difference was found between those presenting with small and large nodes.

Conclusion: This study highlights multiple clinical and laboratory findings that differentiate ML and AA. Moreover, the absence of any difference with regard to the lymph nodes size might suggest that lymph nodes enlargement is a non-specific finding.
POSTER PRESENTATIONS

WSP-PP001

NUTRITIONAL STATUS OF CYSTIC FIBROSIS PATIENTS ATTENDED IN A REFERRAL CENTER OF SÃO PAULO STATE, BRAZIL.

Ieda Regina Lopes Del Ciampo*, Regina Sawamura1, Luiz Antonio Del Ciampo1, Maria Inez Machado Fernandes

1Pediatric, Hospital da Clinicas da Faculdade de Medicina de Ribeirao Preto and Federal university of São Carlos, Ribeirao Preto, Brazil

Introduction: Cystic fibrosis (CF) is an autosomal recessive disease caused by mutation of the gene for the CF transmembrane conductance regulator (CFTR) protein, which functions as a chloride channel. The secretions become thick and accumulate in the intestines and lungs, resulting in malnutrition, poor growth, bronchial lesions and pulmonary infections. Benefits of early diagnosis on the nutritional status of CF patients have been established. Failure-to-thrive diagnoses remain common despite early CF identification.

Purpose: To evaluate nutritional status of CF patients from a Referral Center-SP state-Brazil.

Materials and Methods: Cross-sectional study, data collected: medical records. Included all CF patients evaluated in 2012. Variables: neonatal screening, age, steatocrit and pancreatic insufficiency (PI). Nutritional status: weight for age (W/A), according WHO growth chart. Cut-off: p10 (>20y cut-off=20y). W/A was inappropriate (≤ p10) or appropriate (> p10). Four groups were categorized according age (GI:0-2y;GII:>2-10y;GIII:>10-20y;GIV:>20y). Chi-square test was performed to comparison. Level of significance:p<0.05. Software:Epi-info 7.

Results: 71 patients. Considering CF diagnostic and current moments: 80.1%(57.0) and 82.8%(58.0) presented PI; steatocrit means SD) were 10.6%(±11.1) and 3.0%(± 6.2), Age(days) means(SD) were 13.9(± 24.7) and 128.9(± 107.1); respectively. Birth, CF diagnosis and currently weight(g) means(SD) were 3,017.0(±545.8); 12,611.0(±15,369.8) and 32,466.0(±20,589.9); respectively. Inappropriate nutritional status (INS) at CF diagnosis and currently was observed in 57.1%(36/63) and 19.7%(13/66); respectively. The subjects groups distribution (GI, GII, GIII and GIV) were 28.2%(20.0); 19.7%(14.0); 39.4%(28.0) and 12.6%(9.0); respectively. INS at CF diagnosis moment was higher(33.3%) in GII(12/63) and GIII(12/63), without statistical difference (p>0.05). Currently INS was 53%(35/66) in GIII, without statistical difference (p>0.05).

Conclusion: The high frequency of INS at CF diagnosis moment could be explained by number of pancreatic failures and other clinical symptoms without management. Although without statistical significance (p<0.05), the highest percentages of INS at CF diagnosis moment in GII and GIII could be justified by the lack of opportunity of early and adequate intervention due to late diagnosis. Higher INS (p<0.05) in GIII (adolescents) currently, agrees with studies demonstrating high energy expenditure in CF patients, associated to high metabolic rates required to puberal spurt.
ADOLESCENCE AND CYSTIC FIBROSIS.

Ieda Regina Lopes Del Ciampo, Luiz Antonio Del Ciampo, Regina Sawamura, Maria Inez Machado Fernandes

1Pediatric, Hospital da Clinicas da Faculdade de Medicina de Ribeirao Preto and Federal university of São Carlos, Ribeirao Preto, Brazil

Introduction: Adolescence is a period of biopsychosocial transition from a dependent child to an autonomous/independent adult. Adolescents represent 13% of the general population, but they account for about 30% of physician's workload. Cystic Fibrosis (CF) is rare and lethal genetic disease caused by mutation of the gene for the cystic fibrosis transmembrane conductance regulator (CFTR) protein, which functions as a chloride channel. The secretions are thick and accumulate in the intestines and lungs, resulting in malnutrition, poor growth, bronchial lesions and pulmonary infections. CF patients need of chronic and intense management.

Purpose: To know characteristics of CF adolescents with attended at a reference center located in São Paulo (Brazil)


Results: 28 adolescents, 14(50%) males, 25(89.2%), mean age(SD) was 163(±32.3) months. Only 1(3.6%) had paternal consanguinity and 6(21.4%) had a CF brother. Pancreatic enzymes were replaced to 25(89.2%) PI adolescents. Nutritional supplement was used by 22 (78.5%). Birth weight and length were 2,993g (±535,4) and 47,1cm (±4,1), respectively. The current weight and height averages, respectively, were 43,232 g (±13,552) and 152,5 cm (±13,3). Current weight and height percentages

Conclusion: Adolescents present specific challenges for treating disease and promoting health which should be known by the team that cares for individuals with chronic diseases such as CF.

This CF adolescents used drugs and supplements and were hospitalized to maintain a better nutritional status as possible. The effective treatment of illness in adolescence requires adept management of the issues regarding adherence, consent and confidentiality, and relationships between young people and their family. It should not be forgotten that care support is essential to keep them in the best possible state and to meet other age-specific needs, which may seem difficult; however, given the right skills – which can be learned! – practising medicine with young people can be extremely rewarding and productive.
INFLUENCE OF PRACTICE GUIDELINES AND VOCATIONAL TRAINING ON MANAGEMENT PATTERNS FOR MENINGOENCEPHALITIS AMONG PAEDIATRIC CLINICIANS

Michael Zhang* 1, 2, Sameer DAL1, Carla Ceccarelli1, Mari Koyanagi1, Jessica Lockyer1

1John Hunter Hospital, 2School of Medicine and Public Health, University of Newcastle, Newcastle, NSW, Australia

Introduction: Consistent patterns of clinical practice among clinicians is desirable to both health care providers and the patients and their carers. But it is relatively uncommon in the case of managing some challenging conditions such as central nervous system infections, especially in mixed Emergency Departments that are staffed by a diversity of clinicians with different levels of training. Additionally, other factors such as familiarity and adherence to local and foreign clinical practice guidelines can influence their management approaches to sick children.

Purpose: This research project aimed at exploring the patterns of clinical practice among a group of clinicians and determining the factors with significant impacts.

Materials and Methods: A cross-sectional self-administered anonymous and voluntary survey was conducted to target the clinicians involved in the acute paediatric practice in two teaching hospitals. The questionnaire was specifically designed to collect the information on participants’ training experience and the ways of their decision making in response to some real case scenarios.

Results: Sixty-eight questionnaires, giving an 81.9% (95% CI: 75 – 87.6%) response rate, were returned for subsequent analysis. The majority of the doctors were from General Paediatrics (45.6%) and Paediatric Emergency Medicine (33.8%). They have preference for either subscribed online Therapeutic Guidelines (48.5%) or some local hospital practice guidelines (34.9%) over international or state-wide government guidelines. The patterns of practice across the board did not differ significantly among different guidelines users. On the other hand, in a clinical scenario of an irritable young infants with transient fever, more vocational trainees would hold off the lumbar puncture but if needed would perform it without a prior brain CT to an irritable but otherwise neurologically intact infant than their non-vocational counterparts would (46.2 % vs 38.1%, p = 0.04, and 76.9%, vs 19.1%, p < 0.001; respectively). Similar findings were also found in some other aspects of their practice.

Conclusion: No significant association was demonstrated between specific guidelines users and certain clinical practice patterns when evaluating sick children with possible meningoencephalitis. Vocational training in acute paediatrics is a significant determinant that can be targeted to improve management approaches.
THE OBESITY PROBLEM IN GEORGIAN TEENAGERS
Nana Shavlakadze* 1, 2, Irine Pkhakadze3

1Medical Clinic "XXI SAUKUNE", 2Faculty of Medicine, Akaki Tsereteli State University (ATSU), 3Faculty of Medicine, ATSU, Kutaisi, Georgia

Introduction: For decades in many countries obesity has been fought actively, but the problem is becoming increasingly important as the number of obese people is growing. Most people cannot properly assess the risk of obesity. Excess weight does not only threaten the beauty, but it is the real cause of many diseases. The issue of the defeating the obesity is even more complicated, because it is a multi-complex problem. This process involves: genetics, age, medications, ethnic factors, weight at birth, endocrine diseases, stress and distress, desire of pleasure, life style and etc.

If we recall the Georgian population lifestyles, eating patterns and the statistics of common diseases (Atherosclerosis is in the first place, Joint diseases and blood pressure on the second), it is easily identifiable that in this regard the situation is not good in Georgia as well.

Purpose: The real statistical data about obesity is not available in our country, so we decided to try to clarify the issue of the tendency to obesity via the studying the mass index of young citizens.

Materials and Methods: To achieve this goal, we studied physical and physiological parameters (anthropometrical data, body mass index, food menu, mode of life and a range of lipids, glucose, glucose tolerance test) of 338 children aged between 9-11 and 15-17 in two schools of the city and two rural schools. Among the children there were 177 boys and 161 girls. Out of these 160 were villagers and 178 were city dwellers.

Results: The statistical analysis of the results revealed the frequencies of overweight and obesity among the children of Georgian cities and villages, their distribution by age and sex; their indicators of lipid and carbohydrate metabolism and trends of imbalance, correlations with age and sex; a certain range of causes (constitutional factors, eating habits, the menu features and physical activity). The results obtained are quite serious and unpleasant: 26 % of tested children have excess weight, 6% are obese, almost all members of this group have imbalanced lipid and carbohydrate metabolism. Imperfect daily regime, unhealthy menu and low physical activity are their lifestyle and regrettable reality.

Conclusion: To look deeply in this issue we still have to do a lot of research and process all the existing parameters, but the results of the primary analysis of the study show that the problem of obesity is real for Georgian population and it begins from the childhood.
INTUSSUSCEPTION - THE GREAT MASQUERADER  EXPERIENCES FROM ONE HOSPITAL
Sally Elsayed, Caroline Ponmani
Barking Havering and Redbridge University Trust

Introduction: Intussusception is the most common abdominal emergency in infancy. Infants may present with the classic tetrad of colicky abdominal pain, abdominal mass, bloody stools, and vomiting. An acute change in the level of consciousness could rarely be the most prominent presenting feature. A possible endogenous opioid poisoning by massive secretion of endorphins during pain's paroxysm is one of the hypotheses explaining this type of presentation.

Purpose: We report an infant who presented with a striking degree of lethargy associated with vomiting which almost overshadowed the intestinal manifestations. Her electrolytes, capillary gas and vital signs were within normal limits. We emphasize the importance of including intussusception in the differential diagnosis of encephalopathy.

Materials and Methods: A 6 month old, previously healthy infant presented to the children’s emergency department with lethargy and floppiness. Mother reported decreased activity, poor feeding and vomiting for three days. She had presented twice to her general practitioner and had been sent home with oral rehydration solution. She had passed a small hard stool the previous day. When she presented to ED she was floppy and lethargic with abdominal distension. Her vital signs were within normal limits. She was started on IV fluids Ceftriaxone and Acyclovir. An abdominal radiograph demonstrated dilated small bowel loops with no evidence of air-fluid level. Despite fluid resuscitation she continued to remain lethargic with intermittent spontaneous eye opening and reduced tone. A diagnosis of intussusception with encephalopathy was made. She was transferred to a paediatric surgical centre. An abdominal ultrasound revealed an ileo-ileal intussusception. Air enema was attempted but failed. Manual reduction was performed under general anesthesia. She went on to make a complete recovery.

Results: results

Conclusion: Our patient posed a diagnostic dilemma as the classic tetrad of symptoms of intussusception were not present. A high index of suspicion was needed specially as vomiting and encephalopathy were the predominant manifestations. We suggest that intussusception be considered in the differential diagnosis of children with altered mental status, even in the absence of any of the classic symptoms. Early diagnosis and treatment is crucial to prevent the development of the catastrophic complications of intussusception.
THE LONG-TERM CONSEQUENCES OF ACUTE GASTROENTERITIS

Vėtra markevičiūtė*, Domante Maciulytė†, Vaidotas Urbonas†

†Clinic for Children’s Diseases, Medical Faculty of Vilnius University, Vilnius, Lithuania

Introduction: Gastrointestinal (GI) infections are one of the most common children diseases. In adults these infections may cause gastrointestinal complications (irritable bowel syndrome, functional dyspepsia, etc.). There is a lack of scientific data about the consequences of GI infections in children. In this study we investigated GI complications after acute gastroenteritis (AGE) in children.

Purpose: The main purpose of our work is to confirm or reject the hypothesis that intestinal infections cause functional or organic disorders of the digestive tract: functional dyspepsia, irritable bowel syndrome. We prospectively investigated 415 children aged 0-17 years (M=4.31; SD=3.98; 190 girls and 225 boys) who were treated at the Children’s Hospital in 2016. The state of patients was assessed at 1 and 3 months after the AGE.

Materials and Methods: We prospectively investigated 415 children aged 0-17 years (M=4.31; SD=3.98; 190 girls and 225 boys) who were treated at the Children’s Hospital in 2016. The state of patients was assessed at 1 and 3 months after the AGE.

Results: The most commonly diagnosed infection was the rotavirus -48.8%. 58% of patients had a moderate disease severity, and 55% had moderate dehydration. After 1 month 17.5%(n=49) and after 3 months 7.6%(n=17) of patients claim that there are changes in their wellbeing.

The biggest changes in appetite (24.30%(n=69) of which 44.93% improvement and 55.07% impairment) were registered after 1 month and changes decreased after 3 months (5.96%(n=14)). After 1 month, 13.40%(n=38) of patients observed changes in defecation but those changes decreased after 3 months (5.5%(n=13)). 6.34%(n=18) of patients had watery stool after 1 month, but there were no other significant changes in defecation.

Stomach aches were the most intense during the first month after the AGE (13.03% (n=37)) and almost the same 3 months (14.47% (n=34)). There weren’t statistically significant differences between patients who took probiotics and who didn’t.

Conclusion: AGE did not find any reliable link between intestinal infections and digestive tract disorders, occurring after 3 months after intestinal infection.
THE DISTURBED BALANCE OF TWO TGFβ1/SMAD PATHWAYS PARTICIPATED IN RETINOPATHY OF PREMATURITY

Huijuan Li*, Ruyuan Zhu1, Li Jiang1

1Pediatrics, Zhongda Hospital Affiliated to Southeast University, Nanjing, China

Introduction: Studies and treatments of retinopathy of prematurity (ROP) have been mainly concentrated on neovascularization, while the delayed angiogenesis at earlier phase of ROP has been neglected for a long time. The two Tgfβ1/Smad pathways, namely Tgfβ1/Smad2/3 and Tgfβ1/Smad1/5/8, have opposite functions in vascularization, inhibiting and promoting angiogenesis, respectively. The rat oxygen-induced retinopathy (OIR) model is widely used in ROP studies. The fluctuating oxygen concentration from Day 0 (D0) to D14 led to restrained angiogenesis (phase 1); normoxia from D15 to D18 (phase 2) caused neovascularization.

Purpose: Objective of the present study was to elucidate the states of the two Tgfβ1/Smad pathways and to explore ways of interfering ROP at earlier time.

Materials and Methods: The rat OIR model was conducted by putting the newborn rat into cycled 50% and 10% oxygen (from the day of birth, each concentration for 24 hours), lasting for 14 days and then exposed to normoxia for another 4 days. Retinas were harvested at D14 for immunohistochemistry (IHC) and Immunofluorescence (IF) of Tgf1. Western-blotting was conducted to analyze the expression of pSmad2/3 and pSmad1/5/8.

Results: At D14, retinal flatmount staining of isolectin B4 showed that vessels mature and reach the margin of retina from rats in the control group, while vessels of retina from the OIR rats were abnormal and failed to reach the edge (Figure A). In both IHC (Figure B) and IF (Figure C), Tgf1 was lower in OIR group. While in Western-blotting, pSmad2/3 was higher in the OIR group. By contrast, pSmad1/5/8 was stronger in the control group (Figure D).

Conclusion: In OIR group, the lower Tgfβ1/Smad1/5/8 activation was consistent with the delayed angiogenesis; the stronger Tgfβ1/Smad2/3 activation despite the low expression of Tgfβ1 indicated that the antiangiogenic pathway was over-activated. These results demonstrated that the truncated balance of two Tgfβ1/Smad pathways took part in the delayed angiogenesis in earlier phase of OIR, supplying as potential target of interfering ROP.
PREDICTORS OF IMPROVED ADAPTIVE SKILLS AND QUALITY OF LIFE IN CHILDREN WITH AUTISM SPECTRUM DISORDER

Aishworiya Ramkumar* 1, Evelyn Law1

1Paediatrics, National University Hospital, Singapore, Singapore

Introduction: Autism Spectrum Disorder (ASD) is a prevalent developmental disability. Although different methods and intensity of early intervention (EI) services have been well studied, research on other modifiable variables related to EI is limited.

Purpose: The aim of this study was to identify specific modifiable EI and socioeconomic (SES) factors that are predictors of better outcome in children with ASD.

Table: Table 1: Factors associated with greater change in Vineland Adaptive Behaviour Scales Adaptive Behaviour Composite score

<table>
<thead>
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<td>2.64</td>
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</tbody>
</table>

Materials and Methods: Consecutive patients aged 5-year, 0 month to 7 year, 11-month with ASD diagnosed previously through formal psychological assessment were recruited from a tertiary developmental program in Singapore between August to December 2016. In Singapore, EI is provided for children with suspected developmental disabilities from age 0 – 7. The consent rate was 89.9% (N=92). Exclusion criteria were 1. Vision or hearing loss 2. Significant neurological co-morbidity (cerebral palsy, epilepsy) and 3. Children with genetic syndromes. Parents of these children completed the PedsQL questionnaire and provided information on demographics, early intervention details and SES indicators. The primary outcome was the change in the psychologist-administered Vineland Adaptive Behaviour Scales (VABS) Adaptive Behaviour Composite (ABC) score from the time of ASD diagnosis to 7 years of age. Secondary outcome was the PedsQL School functioning score. Descriptive statistics were used to analyse EI and SES factors. Linear regression models were used to determine predictors of better adaptive skills and PedsQL scores.

Results: The sample consisted of 84.0% males. Mean age of the sample was 74.6 months (SD 9.5). Mean age at ASD diagnosis was 40.9 months (SD 8.9). Mean VABS ABC score was 77.3 (SD 11.4; mean of normed population was 100 with SD of 15). Mean wait time for EI was 5.2 months (SD 3.4) and mean intensity of autism specific EI was 8.0 hours/week (SD 3.4). Linear regression showed that wait time for EI services was a predictor of change in the ABC score after controlling for other child and parent variables (β=-0.84, p=0.01; Table 1). Significant covariates also included paternal education and need for financial subsidies for EI (Table 1). Wait time was again a predictor of the PedsQL school functioning score after controlling for other variables (β=-0.83, p=0.04).
Conclusion: Wait time for EI services is a significant modifiable risk factor that can predict outcomes in children with ASD. When planning for EI services for children with ASD, factors that reduce wait time should be carefully considered.

ALARMING, COLICKY PAIN DISCLOSED A RARE SPLENIC HAMARTOMA ON A 3-YEAR-OLD BOY. A CASE REPORT FROM BALI
Sutjahjo Suherman*, Lorentia H.S

Introduction: Splenic hamartoma is a very rare benign tumour, especially in children. Although most of the reports in the literature consist of adult patients, smaller reviews indicate that 20% of hamartomas occur in children, with only 32 cases having been reported.

Purpose: To enhance alertness and paying serious attention to an out-patient who came in and cried of abdominal pain unusually.

Materials and Methods: We present ROS, a 3-year-old boy complaining of colicky abdominal pain. On physical examination an enlarged spleen was palpable, approx. 4 cm below the left costal margin. Blood tests, including blood counts, liver and renal function tests, LDH, alpha-fetoprotein and beta hCG were within normal limits. Tentative diagnosis of splenic hamartoma was then confirmed by ultrasonographic and MRI studies. To achieve a definite diagnosis and in addition to the risk of spontaneous rupture and the malignancy properties of this tumour could not be excluded, a partial or total splenectomy has been planned.

Results: Histopathologic exams established the diagnosis of a splenic hamartoma

Conclusion: This case is the first to be observed in our hospital and may highlight the need to keep strong suspicion of serious disease and eventually its complication.
ENDOCRINE MANIFESTATIONS IN CHILDREN WITH WILLIAMS-BEUREN SYNDROM

Yael Levy-Shraga1, 2, Doron Gothelf1, 3, Shiran Pinchevski-Kadir1, Uriel Katz1, 4, Orit Pinhas-Hamiel1, 2, Dalit Modan-Moses1, 2

1The Sackler School of Medicine, Tel-Aviv University, Tel-Aviv, 2Pediatric Endocrinology and Diabetes Unit, 3The Child Psychiatric Unit, Edmond and Lilly Safra Children’s Hospital, Sheba Medical Center, Ramat Gan, 4Edmond Safra International Congenital Heart Center, Edmond and Lilly Safra Children’s Hospital, Sheba Medical Center, Tel-Aviv, Israel

Introduction: Williams-Beuren syndrome (WBS) is characterized by dysmorphic facies, cardiovascular disease and typical cognitive profile. Endocrine abnormalities associated with the syndrome are growth retardation, precocious puberty, hypercalcemia and thyroid disorders.

Purpose: We aimed to characterize growth patterns and endocrine anomalies in these patients.

Materials and Methods: Retrospective study comprising 34 patients (16 males) followed at a national clinic between 2010-2016. Anthropometric and laboratory measurements were extracted from the charts.

Results: Age at diagnosis was 1.4±1.0 years and age at last evaluation 9.4±6.3 years. Mean height-SDS was negative at all ages. Height-SDS at last visit was correlated to the midparental height-SDS (r=0.46 p=0.0073). Yet, participants did not reach their target height, with a difference of 1.40±0.85 SD (p<0.0001). Mean IGF1-SDS was low (-0.61±1.64) and was correlated with the individual mean height-SDS (r=0.63 p=0.038). No correlation was found between anthropometric measurements and cardiovascular disease. Two participants were diagnosed with growth hormone (GH) deficiency. Initiation of GH treatment improved their height velocity. Five girls (28% of the girls) had precocious puberty, eight participants (23.5%) had mild hypercalcemia and four patients (12%) had thyroid abnormalities.

Conclusion: Individuals with WBS have a distinct growth pattern consisting of growth restriction at all ages, resulting in final adult height in the low-normal range. GH axis should be evaluated in cases of severe growth restriction. Precocious puberty and thyroid abnormalities are common.
KNOWLEDGE AND ATTITUDES OF PARENTS TOWARDS FEVER

Introduction: Parental beliefs and knowledge about fever influence their attitudes towards a child with fever. The concept of fever as a beneficial physiological mechanism in the control of the infection should be transmitted to the parents in order to dissipate their obsession with apyrexia.

Purpose: Assess the parents’ knowledge towards a child with fever and to trace a future intervention plan.

Materials and Methods: An observational and transversal study, done from November/2016-January/2017, in a Health Center. A questionnaire was done during the children’s health appointments, being it a convenience sample. The level of significance was \( p<0.05 \).

Results: The medium parents’ age was 35 year-old. Most of the inquired were mothers, had rural residence, portuguese nationality and one or two children. Only 22% considered fever as a process of the body’s defence, being that the majority (72%) referred it was a sign of alert which indicates that something is not right. In 96% referred an objective measurement with the thermometer, being the electronic (87%) and the axillary measurement (75%) the most used. The values of temperature <38ºC were considered fevers in 60%, being that, of these almost all were administered some antipyretic and further fever measurements at a frequency of <60minutes. In 30%, the parents consulted a doctor on the first day of fever. The adequacy of the definition of fever and the respective institution of the drugs was superior in the parents with higher schooling \((p=0.01)\), being that the same was not verified for the parental age and number of children. Singly, the most used drug was paracetamol (82%), being that in 68% referred the need to associate with ibuprofen. To determin the dose of the antipyretic, the parameter most used was the weight (53%). In 13% no non-pharmaceutical measure was used. The symptoms associated to fever that mostly worried the parents were: dyspnea (46%), prostration (44%), anorexia (41%), and exantheme (40%). As secondary effects of fever, convulsions (81%), delirium (53%) and dehydration (45%).

Conclusion: The fever phobia persists in the XXI century, manifesting itself by the precocious administration of drugs, disproportionate monitoring of the temperature and a precocious seeking of medical care. These results reinforce the medical challenge in clarifying, contextualizing and dedramatizing the meaning of fever, highlighting its benefits, as well as, the signs of alert that justify a timely medical observation.
WORK STRESS FACTORS AND PERCEIVED WORK STRESS LEVELS OF NEWBORN INTENSIVE CARE UNIT NURSES

Sibel Küçük*1, Begum Yagmur2

1nursing, ankara yıldırım beyazit universty, 2NICU, Etilk Zübeyde Hanım Kadın Hastalıkları Eğitim ve Araştırma Hastanesi, ankara, Turkey

Introduction: Work stress could increase stress level by affecting professionals in terms of variety dimension. It is known that intensive care unit nurses live stress about workload and critic patient care, especially, newborn intensive care unit (NICU) nurses live stress because of working at a isolated area with newborns and families, environmental factors, unclear task definition, low income.

Purpose: The study was conducted with 64 nurses who work at NICU of two pediatric hospitals in Ankara city center, and participated to the study as voluntary between 01.06.2015-01.01.2016, as descriptive.

Materials and Methods: Data was collected with a questionnaire form and Perceived Work Stress Scale (PWSS). Also, the participants were wanted to write an event that they lived at work environment and thought it is a cause of stress as a letter. For analysis, mean, percentage, Kruskal Wallis and Wilcoxon tests were used.

Results: Scale score means were higher in nurses who were single, hadn’t got children, looked after 9 patients at one night and weren’t pleasured with studying at NICU. Also, there was a significant relation between marital status (p=0.029), having children (p=0.028), studying as guard system (p=0.023), average number of patients that were cared at one night (p=0.032) and satisfaction statute from studying at NICU (p=0.012) with PWS attitude scale.

Conclusion: As a result; it is suggested that work environment of NICU nurses should be organized, mean number of patients and guard should be organized monthly, studies regarding this subject with different groups should be conducted.
KNOWLEDGE LEVELS ABOUT PROBLEMS BECAUSE OF CHEMOTHERAPY OF CAREGIVERS OF HOSPITALIZED CHILDREN FOR CHEMOTHERAPY

Sibel Küçük*, Zeynep Uzun, Selda Eyyuplu

1nursing, Ankara Yıldırım Beyazıt University, 2Pediatric Oncology, 3Bone Marrow Transplantation Unit, Ankara child health and illness hematology oncology education and research hospital, Ankara, Turkey

Introduction: Chemotherapy is the beginning of the most used methods in cancer treatment. In childhood cancers, it is important to meet knowledge needs of parents and other caregivers, about physical and emotional symptoms as disease process, side effects of chemotherapy.

Purpose: The study was conducted with 200 caregivers who waited for the child under chemotherapy at a child oncology hospital between 15.02.2014-15.02.2015, as descriptive.

Materials and Methods: Data was collected with questionnaire form. For evaluation, frequency, percentage and chi-square tests were used.

Results: Of the caregivers; 41.5% were between 26-36 years old, all were women and 97.0% mother of children. During chemotherapy, of them; 41.0% had mouth sores, 15.5% had low blood values, 34.5% had GIS problems. It is stated that 87.0% of the children exposed to mouth sores and 35.0% of them were given oral care after every meal. Using mask near child (91.0%) and cleaning air of room frequently were high (94.0%). Of the caregivers; 22.0% ironed the child’s clothes. Again, of the caregivers; 41.0% stated they bought meal from outside, if child wanted, 77.0% noted what the child ate, 90.0% kept vegetable and fruits in water with vinegar and washed. In the study, 99.5% of them reported redness/purpleness on the child’s body, 99% followed up defecation and 96% followed up anal region daily, 28.0% let child to use washcloth and 13.5% checked their platelet value before cutting nails etc.

Of the caregivers; 29.0% took education in the 2nd day of staying in hospital, 92.5% were taught with verbal and written material and 50.0% were taught by the nurses about side effects of chemotherapy. Also, for 93.5% of them, education was repeated.

There was a significant difference between education time with noting meals and announcement, using washcloth during bath; between educator professional with things that were done after coming back from hospital and when blood was seen in urine/stools and using moisturizer after bath; between repeat of education with mouth sores, using mask, cleaning type of vegetable/fruits, let to brush of tooth, using washcloth, things that were done when blood was seen in urine/stools, using moisturizer and follow-up anal region (p<0.05).

Conclusion: It could be stated that it is important to give education related to side effects of chemotherapy, after starting to stay in bed in hospital, repeated and by an expert personnel with written and visual materials.
A RARE PRESENTATION OF STURGE-WEBER SYNDROME

Flávia Drummond Guina*, Adriana de Oliveira Mukai1, Ciro João Bertoli1, Lívia Meirelles de Araújo Pasqualin2, 3

1 Departamento de Biociências, Faculdade de Medicina de Taubaté, Universidade de Taubaté (UNITAU), Taubaté (SP), Brasil, 2Departamento de Neurologia Pediátrica. Faculdade de Medicina de Taubaté, Universidade de Taubaté(UNITAU), Taubaté(SP), 3Departamento de Biociências, Faculdade de Medicina de Taubaté, Universidade de Taubaté (UNITAU), Taubaté (SP), Brasil., UNITAU, Taubaté, Brazil.

Introduction: Sturge-Weber syndrome (SWS) is a non-familial neurocutaneous syndrome characterized by congenital unilateral port-wine nevus affecting the facial skin and involving the first sensory branch of trigeminal nerve, ipsilateral occipital leptomeningeal angiomatosis, and vascular eye abnormality.

There are three types of SW and the most common is the Type I which involves facial nevus, vascular malformations of the central nervous system and glaucoma. The type II has only facial angioma and glaucoma, but there is no evidence of intracranial lesions. Finally, the type III shows leptomeningeal angiomatosis without facial nevus and also in medical database the SWS type III is extremely rare.

A 2-year-old girl was born at term from non consanguineous parents without neonatal problems. When she was 1 year old, she started manifesting a cluster of non febrile focal seizures, before that episode her motor and mental development were normal. Later on, she had four episodes with interval of almost three months among them, including and a status epilepticus in the last event. So, she was transferred to our Pediatric Intensive Care Center.

At physical examination there isn’t any signal of dermal nevus or ophthalmological abnormality. Neurologic exam has shown a left-sided hemiparesis. MRI revealed right occipital meningeal angiomatosis with calcifications, suggesting a diagnosis of SWS Type III which is characterized by leptomeningeal angiomatosis without port-wine nevus.

Purpose: This article is to emphasize the importance of adequate follow up after neurologic emergency.

Materials and Methods: Case report associated with scientific literature review.

Results: Sturge-Weber syndrome (SWS) type III is a congenital disorder of unknown incidence and causes. The most apparent sign of SWS type I and II is a birthmark or port-wine stain on the face. In rare instances, SWS is present even the absence of the port-wine stain and denominated type III.

Conclusion: Only a few cases of type III have been reported. Recognition of pattern of implication in the central nervous system and correct management are important steps. SSW III should be considered in any child or young adult presenting with seizures or complicated migraine linked to intracranial unilateral calcification.
CHARACTERISATION OF A HUMAN PARECHOVIRUS MENINGITIS OUTBREAK IN CORNWALL - IS THIS MORE BENIGN THAN PREVIOUSLY THOUGHT?

Chris Warren*, Laura Vincent1, Prithwi Chakrabarti2, Yadlapalli Kumar1

1Child Health, 2Microbiology, Royal Cornwall Hospital, Truro, United Kingdom

Introduction: Human Parechovirus (HPeV) is an emerging infection causing outbreaks of sepsis-like illness and meningitis in young infants. In recent a recent large outbreak 25% on infants required intensive care1.

Purpose: To describe the common features and clinical course of a case series of infants with Human Parechovirus (HPeV) meningitis identified during an outbreak in Cornwall in 2016. We aim to add to emerging knowledge base regarding the course and short term outcome of this increasingly recognised infection.

Materials and Methods: We conducted a retrospective notes and investigation review of all infants with a HPeV-positive CSF sample identified during the outbreak which occurred during May to August 2016. We compared our case series to previously published information on HPeV outbreaks.

Results: We identified 13 cases in total. All cases occurred in those aged under 3 months. They were all of term birth except for one infant born at 34 weeks gestation. There were no perinatal complications, and no infants had significant past medical history to the point of this illness. The vast majority presented with a fever above 38 degrees Celsius (12/13), alongside irritability (13/13) and tachycardia (2/13). The features are consistent with findings in other series1.

Laboratory investigations revealed the maximum CRP was 18 mg/L with median CRP of 5 mg/L. There were no abnormalities on haematological indices. CSF samples showed no pleocytosis. There were no positive blood or CSF bacterial cultures. Typing of 4/13 cases confirmed HPeV genotype 3.

In comparison to the largest recent outbreak1, our infants remained clinically stable after presentation and none required intensive care. There have not been any adverse events in early follow up regarding longer term outcome. This is consistent with other recently published data3.

Conclusion: Our case series adds to the small body of literature identifying Human Parechovirus-3 as an emerging cause of meningitis in infants. Our cases series supports the assertion that the course of the illness is normally relatively benign. This reassurance and early identification of the virus can support antibiotic stewardship.

References


ANSWERING TO DEMANDS, A REFLECTION ON A 24-HOUR CONSULTANT LED SERVICE

Rosy Aurora* on behalf of Hillingdon Hospital Paediatric Department, Swarnlata Saroey, Jai Ganapathi, Emily Byron, Saiqua Raoof

Introduction: Increasingly, the UK government has highlighted the need for provision of 7 day consultant services, with the aim of safer and higher quality care with optimised diagnostic decisions. In our London suburb, a local hospital closed their acute paediatric services in July 2016, thus creating higher patient flow into our service. In response, two new models of care were implemented.

- We appointed seven resident acute paediatricians.
- A Paediatric assessment unit (‘PAU’) was implemented within the emergency department (A&E). The PAU allows children an additional 24 hours of observational stay. This type of service provision is growing rapidly in UK.

Purpose: The purpose of this survey and analysis was to reflect on emergency service activity, performance, trainee and staff satisfaction.

Table:

Image:

Performance (%)

Materials and Methods: We reviewed admission rates over the last two winters, Nov 2015-Jan 2016 (cohort 1) compared with Nov 2016-Jan 2017 (cohort 2). Patient flow was analysed in to A&E to appreciate any extra demands on the hospital. And finally a descriptive analysis of staff and family feedback was performed by survey tools.

Outcomes were:

- Our ability to decide care within 4 hours of attending hospital (known as a ‘breach target.’)

- Staff and family feedback.

Results: An average of 31% increased A&E attendance per month (approximately 1500 patients per month) occurred in cohort 2. Conversely performance had increased (chart 1) with average of 39 less breaches/ month over the past winter. In addition, the average length of stay was minimally affected; mean of 2 days (cohort 1) and 2.2 days (cohort 2).
Chart 1 Performance: Percentage of children placed on pathway of care within 4 hours of A&E attendance.

A satisfaction survey demonstrated (n=19, anonymously collated) that approximately 90% of staff (emergency/paediatric doctors and nurses) felt the department was appropriately staffed, performance was better and teaching had improved. Support to allied teams e.g. Surgical and A&E juniors were observed by many (79%). A 100% would bring their own child or recommend to a family.

87% of surveyed families would recommend this A&E department to friends and family.

**Conclusion:** This pilot data analysis has demonstrated the 24/7 consultant led model enables round the clock teaching, training and support. Resultant patient benefit is also well demonstrated. Senior staff questionnaires would provide further important information about their experience and long term acceptance as well as feasibility of these models of care.
A CASE REPORT OF THREE SIBLINGS HAVE OPHTHALMO-ACROMELIC SYNDROME

Mesut Güngör¹, Belkas Aygün², İsmail Hakkı Özcan*², Metin Özel²

¹PEDIATRIC NEUROLOGY, ²PEDIATRICS, ERZURUM REGIONAL TRAINING AND RESEARCH HOSPITAL, Erzurum, Turkey

Introduction: Waardenburg-ophtalmoacromelic syndrome (WAS) is a rare (1<100000) autosomal recessive inherited congenital disorder characterized by microphthalmia or anophthalmia, synostosis, syndactyly, oligodactyly or polydactyly.

Purpose: It was aimed to prove that Waardenburg-ophtalmoacromelic syndrome can also be inherited as autosomal dominant. Epigenetic factors can cause development of WAS.

Materials and Methods: Three siblings have dysmorphic findings at 1, 4, and 5 years of age were presented with motor and mental retardation. Bilateral anophthalmia was present in two siblings and bilateral microphthalmia was present in one sibling. Also, two siblings had 4 toes (oligodactyly) and their thumbs were split. There was a clear cognitive developmental retardation in all of them. Axial and peripheral hypotonia were present. All of them were unable to walk independently.

They did not have the ability to speak except for meaningless phonation.

Mother and father were cousins.

Results: Whole exome sequencing was performed because of the relativistic story and because of the dysmorphic findings of three siblings almost identical to each other and the mother was pregnant for two months to fourth child.

Conclusion: There was no mutation in WES exome sequences in three siblings.

However, patients with dysmorphic findings were thought to be compatible with Waardenburg-Ophthalmoacromelic syndrome.

The mother decided to give birth to the fourth baby before the genetic analysis process, and then she learned that the baby was anophthalmic in the prenatal ultrasonography.

In this case, this syndrome, which is autosomal recessive, was seen in all children of a family.

For this reason we want to present our patients.
CHILDHOOD SEVERE LEPTOSPIROSIS: CASE REPORT

Maria Alice Pulga*, João Carlos Diniz†, Adriana Santos‡, Marielle Beatriz Patto

†Departamento de Pediatria, ‡Universidade de Taubate, Taubate, Brazil

Introduction: Leptospirosis is a zoonosis related to urban agglomerations that have inadequate infrastructure. Caused by *Leptospira interrogans*, which is transmitted through the urine of infected animals, its incubation period ranges from 5 to 14 days.

The clinical stages are divided into early stage: fever, headache, myalgia, vomiting, arthralgia, conjunctival hyperemia and exanthema. Late stage: with variable clinic, the severe forms are less frequent (15%) but of high lethality. The classic triad consists of kidney failure, jaundice, and bleeding. In rare cases, there are meningitis, myocarditis, pancreatitis, neuropathy and arthritis.

In children, it is usually benign and of low lethality. The appropriate measures that should be taken are: clinical diagnosis, epidemiology and serologies.

Treatment: support measures, correction of hematological disorders and antibiotic therapy.

Purpose: To report the case of a child with clinical and laboratory conditions compatible with leptospirosis in the severe form and that evolved with atypical manifestations, aiming to raise awareness about the early diagnosis.

Materials and Methods: Review of medical records and scientific literature.

Results: D. L. G, 4 years old, healthy, living in the countryside of the state of São Paulo, with acute history of fever, abdominal pain, myalgia and arthritis for 7 days. After 3 days, it evolved with oliguria, jaundice, coluria and hemorrhages. Laboratory tests: anemia, thrombocytopenia, leukocytosis, alteration of hepatic, canalicual and muscular enzymes, coagulation disorder and kidney failure. He received ventilatory support, vasoactive drugs, blood derivatives, electrolyte correction and antibiotic therapy. Positive serology for *Leptospira interrogans*. Epidemiology was conducted due to the contact with disease transmitters (rats) and to inadequate infrastructure conditions.

Conclusion: Leptospirosis is common in poor sanitation conditions. Most cases present the oligosymptomatic form. However, in this case, the severe form serves as an alert for a diagnostic possibility and early treatment of the disease.
MÜNCHHAUSEN SYNDROME BY PROXY SEEMINGLY INCREASING PROBLEM IN PEDIATRIC CARE
Adriana Šufliarska*1, Dagmar Bezecná1, Bronislava Kundrátová2

1Paediatric outpatient department, PEDIAMED SRO, 2Detské centrum, Výskumný ústav detskej psychológie a patopsychológie, Bratislava, Slovakia

Introduction: Münchhausen Syndrome by Proxy (MSBP) was first times described by R. Meadow in 1977 as an adaptation of Münchhausen syndrome that describes a group of patients who fabricate their complaints and pretend physical or mental symptoms with the aim to be hospitalized and to gain the attention of health care providers. When the fabrications are projected onto dependent child the condition was named as Münchhausen syndrome experienced "by proxy".

Purpose: To present the problems with the diagnosis of MSBP in a paediatric outpatient department we present a case report of a 10 years old girl.

Materials and Methods: During her 2nd year of life her mother visited her paediatrician 13 times because of the signs of an upper respiratory tract infection (URTI), diarrhea or rash, she was sent to immunologist and to dermatologist. In her 3rd year of life there were only 6 visits to paediatrician, however she was examined also by pneumologist and otorhinolaryngologist. Next year 6 visits of paediatrician took place and the mother visited also an orthopaedist and pneumologist. In her 5th year there were 12 visits to paediatrician with the symptoms of URTI, abdominal pain, belch, pain in the legs, seizures, falls, visual impairment. She was sent to neurologist, ophthalmologist, gastroenterologist. She also visited a psychologist. In her 6th year of life there were 10 visits of paediatrician because of URTI. In her 7th year of life there were 13 visits to paediatrician because of URTI. In the 8th year of her life despite of 9 visits of paediatrician because of URTI, headache and abdominal pain, she visited also a neurologist and cardiologist. She was sent to psychologist as well. At the age of 10 she was hospitalised. There were blood samples taken, many diagnostic tests and also gastrofibroscopy and intestinal biopsy performed. No disease was found. Psychological examination in hospital indicated the presence of psychic trauma because of problems in the family. The parents got divorced in the meantime.

Results: There was no diagnosis found that would explain the symptoms and signs reported by the mother. Psychological support was suggested, mother did not follow this advice.

Conclusion: Diagnosis of Münchhausen Syndrome by Proxy (MSBP) was supposed in this case. Diagnosis and suggestions to mother are the only possibilities for intervention.
A PREMATURE BABY’S NURSING CARE PLAN
Senay Cetinkaya, Sibel Kusdemir

Introduction: Baby T, is in the 46th day of his life has a 26 year old mother who has suffered from about hypothyroid and pre-eclampsia during her pregnancy was born as a preterm baby when he was in 27 weeks’ gestation age by CS.

Purpose: Nursing care plan.

Materials and Methods: Case discussion

Results: In addition to this, parents have blood incompatibility, therefore, such combinations of diseases impacted baby in the uterus and delivery happened earlier than expected date. His birth weight was 820 gr (0-5p), height 34 cm (10p-25p), head-circumference 24 cm (10p). The following healthcare needs were identified upon assessment; intubation, oxygen and stimulant support, monitorization, taking blood samples. Apical pulse is rapid and irregular within normal range 148 bpm, weight is 1605 gr, body is long, thin, limp with a slight potbelly. Initially suck/swallow reflex was absent/uncoordinated that’s why he was taking expressed breastmilk throughout orogastric catheter, it has started also oral giving for the couple of days with the development of sucking and swallowing. Reflexes depend on gestational age; rooting well established by 32 weeks’ gestation; coordinated reflexes for sucking, swallowing, and breathing usually established by 32 wk; first component of Moro’s reflex (lateral extension of upper extremities with opening of hands) appears at 28 wk; second two components (anterior flexion and audible cry) appear at 32 wk. Dubowitz examination indicates gestational age between 24 and 37 wk. Consequently, this infant shows, palmar grasp, plantar grasp, moro reflex; the only response is the opening of the hand due to 27 gestational age. Apgar score was 4-7 (average, need oxygen and stimulant). Respiration was shallow, irregular, diaphragmatic with intermittent breathing 58/min.

Conclusion: Nursing priorities should be promote optimal respiratory functioning, maintain neutral thermal environment, prevent or reduce risk of potential complications, maintain homeostasis, foster development of healthy family unit.
**THE EFFECT OF EARLY KANGAROO CARE ON NEWBORN HEALTH**

*Senay Cetinkaya*

**Introduction:** Since nurses started to give care systematically, they began to use various concepts; such as comfort (relaxation), care, communication which have been the basis of theory development studies.

**Purpose:** Attention to the issue.

**Materials and Methods:** The study was prepared by reviewing the literature and compiling information on current developments.

**Results:** Comfort, as a concept, traditionally associated with nursing art is individual and holistic. Literature reviews report that nurses perform the power, care, support, encouragement and help through comfort and comfort measures.

According to Kolcaba, comfort is "an expected outcome with a complex structure in physical, psycho-spiritual, social and environmental integrity to provide relief, comfort, and overcoming problems for the individual's needs". The concept of comfort according to Holistic view; fulfillment of basic human needs for relief, reunification, and the ability to overcome problems.

The concept of comfort has started to be used frequently in neonatal intensive care units and for newborns in recent years. It is stated that one of the most important factors affecting the speed of healing is comfort. Studies revealed that one of the most important factors affecting the speed of healing is comfort. Kolcaba et al. emphasized that comfort has an enhancing effect benefit, cost ratios and patient satisfaction levels.

Kangaroo Care (KB); contact with the parent of the baby with only the diaper, which provides interaction between the parent and the baby, as the baby is on the parent's chest, the baby's face facing the parent and embracing in the upright position.

**Conclusion:** Increasing the level of patient comfort by applying nursing interventions in newborns is an integral component of professional nursing care. A pediatric nurse should address and solve the physiological problems of the baby, increase the level of comfort in order to reduce the stress level of the baby and improve the baby's environment.
LIVER INVOLVEMENT IN ACUTE RESPIRATORY TRACT INFECTIONS IN CHILDREN AND ADOLESCENTS

Wolfgang Kamin*1, Beate Frerich

1Pediatric Clinic, Evangelic Hospital Hamm GmbH, Hamm, Germany

Introduction: Acute respiratory tract infections (ARTI) are among the most common conditions seen in primary care. The causative agents of these infections are typically viruses and hepatic involvement has been occasionally described in children and adolescents resulting in elevated hepatic enzymes. However, data from a prospective, large-scale clinical study primarily investigating the ARTI-associated hepatic involvement in children and adolescents are lacking.

Purpose: To investigate the relationship between ARTI and the occurrence of elevated hepatic enzyme values.

Materials and Methods: Subjects aged 1-18 years suffering from symptoms of ARTI were recruited. The study consisted of two visits per subject, i.e. at the time point of first presentation (Visit 1) and after 3-7 days (Visit 2). Blood was sampled for laboratory tests at visit 1 and 2, respectively.

Results: In total, 1010 subjects were included into the study of which 936 attended visit 2. The analysis of the laboratory data concerning the three hepatic enzymes AST, ALT and gamma-GT (at least one) showed elevated values in 8.6% of the subjects at visit 1; no differences between the age groups 1-5 years, 6-12 years and above 12 years were found. At visit 2, elevated hepatic enzyme values were found in 9.2% of subjects. In 5.1% of subjects, an elevation of at least one hepatic enzyme values was present at both visits.

Conclusion: The results demonstrate that hepatic enzyme values are elevated in a considerable proportion of children and adolescents suffering from ARTI.
CAN CHILDREN WITH ACUTE URINARY TRACT INFECTION BE TREATED WITH INTRAVENOUS ANTIBIOTICS AT HOME?

Barry T Scanlan¹, ², ³, Conor Hensey⁴, ⁵, Laila F Ibrahim¹, ², ³, Sandy M Hopper*², ⁴, Franz E Babl¹, ², ⁴, Tom G Connell¹, ⁴, ⁵, Andrew Davidson¹, ², ⁴, Penelope A Bryant¹, ², ⁴

¹University of Melbourne, Melbourne, ²Murdoch Children’s Research Institute, ³Royal Children’s Hospital, Melbourne, Australia, ⁴Royal Children’s Hospital, ⁵Murdoch Children’s Research Institute, Parkville, Australia

Introduction: Outpatient parenteral antimicrobial therapy (OPAT) is increasingly used for stable patients for the latter part of antibiotic courses, but the benefits of in-home care make complete hospital avoidance appealing.

Despite development of OPAT/ hospital-in-the-home (HITH) services, use of a direct-to-home pathway for acute urinary tract infection (UTI) in children remains the exception rather than the norm. This is reflected in the lack of reference to this pathway in international (AAP & NICE) and local guidelines.

Purpose: We aimed to determine whether treating acute UTI with intravenous (IV) antibiotics directly from the Emergency Department (ED) to home was effective and safe, and if so, in which type of patients.

Materials and Methods: A prospective 4-year study from Aug 2012-July 2016 of all children with UTI treated with intravenous antibiotics directly from ED to HITH. Demographic, clinical and outcome data including adverse events and readmissions were collected.

Results: Sixty-two patients with acute UTI were treated with IV antibiotics directly from ED to HITH. 82% were female with mean age 6.5 years (range 14 weeks-15 years). Thirty one percent had an underlying condition and 84% had a reported/recorded fever. Thirty four percent had vomiting with 15% receiving IV fluids in ED and 13% anti-emetics. The most common antibiotics were gentamicin (77%) and ceftriaxone (15%). Urine culture was positive in 65% patients, most commonly Escherichia coli (73%). Median duration of IV antibiotics was 2 days (range 1-6). No patient had antibiotic side effects necessitating change; two patients needed replacement of IV access. Ten (16%) patients re-presented to ED during treatment, and 8 were admitted: 3 were monitored due to lack of progress, 2 had antibiotics broadened, 1 received IV fluids and 1 with an unrelated condition. No patient required fluid bolus resuscitation at readmission. Ninety percent completed their course of treatment on HITH (ie effective) and no patient had any complications as a result of being treated at home (ie safe).

Conclusion: Selected children presenting to ED with acute UTI can be safely treated directly via HITH. Neither fever, vomiting or administration of IV fluids in ED appears to be an absolute contra-indication to treating at home. Whilst 10 (16%) patients re-presented to ED, only 4 (6%) of these were admitted for more than 24 hours. To allow generalisability, the next stage is to compare to patients admitted to hospital.
SUCCESSFUL TREATMENT OF CANDIDA ALBICANS WITH PRIMARY CASPOFUNGIN THERAPY IN AN EXTREMELY LOW BIRTH WEIGHT NEONATE

Young Mi Han*1, 2, Na Rae Lee1, 2, Shin Yun Byun1, 2, Mi Hye Bae1, 3, Kyung Hee Park1, 3

1Pusan National University School of Medicine, 2Pediatrics, Pusan National University Children’s Hospital, Yangsan, 3Pediatrics, Pusan National University Hospital, Busan, Korea, Republic Of

Introduction: Invasive candidiasis is an increasing problem in neonatal intensive care units worldwide, particularly in preterm infants. Despite conventional use of amphotericin B and fluconazole, treatment failure not due to drug resistance is reported.

Purpose: Caspofungin is effective and tolerated in adults with candidiasis; however, experience is limited in preterm patients. We studied an extremely premature infant with candidiasis, who was successfully treated without any adverse effects. To the best of our knowledge, this is the youngest premature infant who survived with caspofungin use.

Materials and Methods: A male neonate weighing 650 g was delivered vaginally at 24 weeks of gestation. He was intubated, surfactant administered, and ventilator care begun with 100% oxygen. Ampicillin and cefotaxime were administered via an umbilical venous catheter (UVC). On day 9, the UVC was substituted with a percutaneous central venous catheter. His clinical course was remarkable for multiple complications including grade IV intraventricular hemorrhages on day 4, patent ductus arteriosus requiring surgery on day 11, and septic shock presenting with refractory hypotension on day 36. The blood culture was positive for Candida albicans. After informed consent from the parents, caspofungin 2 mg/kg daily, was started as used earlier.

Results: Cerebrospinal fluid and urine cultures were negative. Echocardiogram, ultrasound of the head, and ophthalmologic examination were unremarkable. The blood culture became sterile after the 2nd day of caspofungin use, which we planned to continue for three weeks. However, he showed a relapse of candidemia on the 17th day of caspofungin treatment. Caspofungin was continued and blood was sterile 5 days later, which lasted for 21 days since relapse. Caspofungin treatment was administered for 38 days, and there were no adverse events related to its use. Laboratory analysis comparing the initial and end point of treatment showed no disturbance in hematological parameters, liver and renal function tests. The infant was discharged on the 171st day after birth. The infant is now 10 months old, is thriving well without requiring oxygen via nasal cannula.

Conclusion: This case establishes the efficacy of caspofungin in the treatment of invasive candidiasis in extremely low birth weight neonates, in life-threatening situations. Long-term follow-up is vital to document adverse effects not apparent during the early period.
EVALUATION OF COMMON MIGRAINE HEADACHE IN CHILDREN WITH HELICOBACTER PYLORI INFECTION

Ancuța Igonat, Marin Burlea, Ingrith Miron, Vasile Valeriu Lupu

Paediatrics Department, University of Medicine and Pharmacy “Gr. T. Popa”, Iasi, Romania

Objectives and study: Headache is frequently reported in patients with various gastrointestinal symptoms. The relationship between Helicobacter pylori (H. pylori) infection and migraine headache has been the focus of many studies in adult population. The aim of this study is to explore this fact in children.

Methods: A group of 1757 children, admitted in a paediatric gastroenterology regional center in northeast Romania, diagnosed with gastritis and/or peptic ulcer by upper endoscopy underwent gastric biopsy for H. pylori infection.

Results: 542 children (30.85%) had H. pylori infection, while 1215 (69.15%) did not. Out of 1757 children with gastritis, 130 (7.39%) had common migraine headache. Out of 130 children with headaches, 54 children (41.54%) had H. pylori infection. In our study, we found a high significant association between H. pylori infection and headache (χ²; p <0.01).

Conclusion: In children, H. pylori infection is common in primary headache. H. pylori eradication can reduce migraine headaches.
NMR ANALYSIS OF THE URINARY METABOLIC PROFILE OF WESTERN GREECE REGION NEWBORNS. PRELIMINARY DATA

Anasrtasia Varvarigou*, Giannis Giannakopoulos¹, Asimina Tsidoni¹, Sotiris Fouzas¹, Ioanna Georgakopoulou², Stavros Bariamis², Stella Chasapi², George Spyroulias²

¹Pediatrics, University of Patras, School of Medicine, ²Pharmacology, University of Patras, Patras, Greece

Introduction: Metabolomics represent a new and promising area of research in neonatology. To date, the method has been successfully applied to monitor the rapid metabolic changes after birth and to detect the metabolic responses that may be characteristic for specific neonatal disorders.

Purpose: The aim of our study was to develop a reference model of urinary metabolomics in healthy newborns up to their third day of life, taking also into account gestational age (GA) and delivery mode.

Materials and Methods: The study included 110 healthy newborns (GA 35 to 40 weeks) from the region of Western Greece. Urine samples were collected immediately after birth and at the end of the third day of life (DOL). Metabolic profiling of the samples was performed by ¹H-NMR spectroscopy. Statistical analysis was conducted in R environment, using in-house scripts.

Results: Principal component analysis showed that there were significant differences from birth to DOL 3 in the relative intensities of the assigned metabolites, such as betaine, glycine and taurine. Trends in differentiation of metabolites levels between the two spectral groups, late preterm and term newborns, were also observed.

Conclusion: Our preliminary data confirmed the rapid changes in the urinary metabolic profile after birth. Ongoing research will enable us to develop the reference model of urinary metabolomics in healthy newborns during the period of adaptation to the extra-uterine life.
WHEEZING PHENOTYPES ROLE IN PEDIATRIC PRACTICE

Anahit Grigoryan*, Nune Oganesyan, Murad Grigoryan, Lilit Aleksanyan

Introduction: Wheezing in infants and children is a common problem presented to pediatric practice. Population studies have shown that every third child have episode of wheezing to the age of 3, and already 50% of children have episode of wheezing to the age of 6. In half of cases there are more than one episode of wheezing in this age. The need to identify various phenotypes of wheezing is largely due to the complexity of setting the diagnosis of asthma at this age. Determining the phenotypes of wheezing syndrome in a child, doctors try to predict the probability of developing asthma. The difficulty of early diagnosis of asthma in preschool children is largely due to the lack of the possibility of assessing the functions of external respiration, using methods used in adults.

Purpose: To study the clinical features of persistent symptoms in children, from 3 to 5 years old, with different phenotypes of wheezing syndrome and to improve the diagnosis of asthma and determine the management.

Materials and Methods: 67 patients (3 to 5 years old) with wheezing were examined in the pediatric department of the "Muratsan" University hospital complex from December 2013 to August 2014.

Results: In 73.24%, the only trigger were upper respiratory tract viral infections. They formed a group of patients with episodic wheezing. In 26.76% wheezing occurred due to allergens, tobacco smoke, laughter, crying, cold air (multi-trigger wheezing). Investigations have shown that multi-trigger phenotype is more associated with burden family and allergic history than episodic phenotype (82,4% vs 12,4%; 62,4% vs 14,2%). Investigations of immunological parameters revealed higher levels of IgE in multi-trigger phenotype (82,41%). Comparing the parameters of a general blood test, in particular, the level of eosinophils, more cases of eosinophilia (> 4%) are revealed in the phenotype of multi-trigger wheezing. In the group with episodic wheezing the diagnosis asthma was exhibited in 8.16% cases, in compare with multi-trigger phenotype in 33,3%.

Conclusion: This study shown that development of asthma later in life is more associated with multi-trigger phenotype, which provides an opportunity of timely monitoring the course of asthma.
EVALUATION OF AN EDUCATIONAL CAMPAIGN TO RAISE AWARENESS OF CHILD PHYSICAL ABUSE AMONG HEALTH CARE PROFESSIONALS IN GREECE


12nd Department of Pediatrics, National and Kapodistrian University of Athens, 2ELIZA, the Society for the Prevention of Cruelty to Children, 3DEREE, the American College of Greece, Athens, Greece, 4Department of Pediatrics, Yale University, New Haven, CT, 5Department of Pediatrics, University of Iowa, Iowa City, IA, United States

Introduction: There are limited training programs for health care professionals in Greece in child protection and validated tools to assess relevant knowledge.

Purpose: To develop a workshop for health care professionals and a knowledge questionnaire on child physical abuse.

Materials and Methods: 19 physicians from all academic pediatric departments in Greece were trained in child physical abuse by child abuse specialists. Presentations were translated into Greek and adapted for a six-hour workshop. Eight workshops were conducted by the group of trainers.

Twenty questions were selected from a pool, translated into Greek and back-translated into English and were given to participants pre and post-training. The internal consisteny of the questionnaire was measured. A 2x2x2 mixed analysis of variance was conducted on scores, with city of training and participants’ profession as the between-participants variable, and pre/post training performance as the within participants variable.

Results: Eight workshops in 7 cities of Greece took place. 1220 health care professionals participated. 435 participants completed the questionnaire pre and post training. Cronbach’s α coefficient ranged 0.761-0.784. Post-training scores were significantly increased \( p=0.000 \). Mean scores were higher for resident pediatricians, followed by pediatricians, professionals of non-recorded specialty, other medical specialties, and medical students in comparison to various other professionals, psychologists/psychiatrists, and health care workers \( p=0.000 \). Psychologists/psychiatrists, health care workers and medical students had the greatest knowledge gains \( p=0.000 \). Professionals of all fields showed similar knowledge gains in all cities.

Conclusion: 1220 health care professionals attended 8 workshops on child physical abuse in 7 cities of Greece conducted by 19 trainers. A 20-item questionnaire reliably assessed knowledge on child physical abuse with significant cognitive gains for workshop participants.
THE CLINICAL ROLE OF ZINC IN EARLY CHILDHOOD RESPIRATORY INFECTION

Gohar Ayvazyan*, Nune Bagdasaryan, Nane Mnatsakanyan, Lilit Avetisyan, Anahit Grigoryan

Introduction: Zinc deficient children have a higher incidence of infections, including acute lower respiratory infection.

Purpose: Aim of this study was to detect the clinical role of zinc in early childhood respiratory infection.

Materials and Methods: A prospective study enrolled 115 children from 3 to 59 mo. 50,4% of which with pneumonia and 49,6% with bronchitis. During study children's zinc level in serum were checked. Children were divided into case (60 low serum zinc level) and control (55 normal level of zinc) groups. After their recovery 12 mo. follow-up were organized. During first 3 months incidence of respiratory infections among case and control groups were compared. After which, children with zinc deficiency were divided in two groups. First one (27 children) supplement group, received zinc supplement for three months and second one (26 children) diet group, received only zinc rich diet.

Results: The present study showed that mother's low education level (RR=2,74 (95% CI 1,2-6,1), pathologies during pregnancy (RR=2,25 (95% CI 1,1-4,7) and meat consumption fewer than 3 times a week (RR=2,4 (95% CI 1,13-5,14) are the risk factors for developing low zinc level in serum in children with pneumonia and bronchitis. Only one hospitalization during life had 63,3% patients in case and 41,8% in control group (p<0,05). More than one hospitalization 30% in case and 9,1% in control group (p<0,05). During our study we didn't find any statistically significant difference in duration of respiratory distress signs, fever improvement and duration of hospitalization between two groups in both patients groups with pneumonia and bronchitis. According follow-up findings, children with low level of zinc during 3 mo. after discharging from hospital have more episodes of respiratory illnesses.

Conclusion: The zinc supplements can prevent respiratory infections as the children receiving zinc supplements have fewer episodes of illness in comparison to those who only eat zinc rich food.
UNIQUE PRESENTATION OF A RUPTURED ARACHNOID CYST WITH SUBDURAL HYGROMA FORMATION AND MIDLINE SHIFT IN A 10-YEAR-OLD GIRL
Michail Sergentanis*, Ariana Spungina

*Paediatrics, The Princess Alexandra Hospital, Harlow, United Kingdom

Introduction: The majority of intracranial arachnoid cysts are asymptomatic and are detected incidentally. They are benign congenital cavities arising in the subarachnoid space. Rupture may result in symptomatic presentation, the most common symptom being headache. Raised intracranial pressure is a rare complication requiring surgical treatment.

Purpose: A 10-year-old girl presented to a district general hospital with a 2-month history of a strange sensation in her head during any physical activity. A week prior to admission she heard a “pop” in her head while performing a cartwheel, developed nausea and headache that was eased when standing up or tilting her head to the right.

Image:

Materials and Methods: Information was collected from the patient, parents, notes and hospital databases.

Results: On examination, the patient was neurologically intact with no signs of raised intracranial pressure. However, MRI brain showed a ruptured 3.8 x 2.9 x 2.3 cm left middle cranial fossa arachnoid cyst with extensive subdural hygroma and mass effect (Image 1). She was managed with burr hole drainage at a tertiary hospital.

Conclusion: It is essential to pay attention to the history, which may appear to be trivial on presentation (a sensation of “pop” while doing cartwheel) to avoid missing burst arachnoid cysts that may have disastrous consequences.
PHENOTYPICAL DESCRIPTION OF A SUBSET OF INDIVIDUALS WITH PTEN GERMLINE MUTATIONS, AUTISM SPECTRUM DISORDER AND MACROCEPHALY

Ana Rute Manuel, Frederico Duque, Guiomar Oliveira

Introduction: Autism Spectrum Disorder (ASD) is a challenging neurodevelopmental disorder, with a profound multifactorial origin and a complex inheritance. Studying proven susceptibility genes and working on clinical endophenotypes are needed to define more valid genotype-phenotype correlations. PTEN is a tumour suppressor gene located on chromosome 10q23.3. Inactivation of PTEN results in upregulation of the PI3K/AKT signalling pathway, which affects multiple cellular processes. Besides, PTEN has an essential role in brain development, and thus in normal social behaviour, where tight control of the PI3K/AKT/mTOR pathway is of great importance. Multiple studies have emphasized a linkage between PTEN mutations and children presenting macrocephaly together with ASD, intellectual disability or neurodevelopmental delay. For that reason, PTEN mutation testing is a major consideration in cases of ASD and/or neurodevelopmental delay with macrocephaly.

Purpose: In the present study we aim to report a subset of three individuals with a PTEN germline mutation and both ASD and macrocephaly.

Materials and Methods: We report a sample of three caucasian patients, with ASD and macrocephaly ranging from +3SD to +4SD. ASD was diagnosed based on a positive score for both ADI-R and ADOS, and fulfillment of DSM-5 criteria. Furthermore, all underwent an extensive clinical evaluation, including an intellectual and functional evaluations with Griffiths Mental Development Scale and Vineland Adaptive Behaviour Scale. Besides PTEN molecular analysis, laboratory tests to rule out medical causes were performed.

Results: Our findings revealed significant phenotypical heterogeneity. Three PTEN mutations were found, among which a de novo duplication in exon 6 that to our knowledge has never been described in ASD patients. Clinical evidence strongly points to the pathogenicity of this variant. MRI showed several abnormalities.

Conclusion: Our results reinforce the multifactorial complexity of ASD, and the necessity to identify biological markers and specific endophenotypes. This case report is concordant with contemporaneous investigation on the aetiology of neurodevelopmental disorders and adds a de novo mutation with clinical value, not yet described.
A CASE REPORT OF A TERM BABY WITH UNILATERAL PERINATAL TESTICULAR TORSION

Ariana Spungina*, Michail Sergentanis

Introduction: There are two types of testicular torsion – extravaginal and intravaginal. Extravaginal torsion occurs in foetuses and neonates, whereby the testis, epididymis, and tunica vaginalis twist on the spermatic cord. The twisting results in ischaemic changes, leading to swelling, degeneration, necrosis and infarction of the testis.

Purpose: 12% of all testicular torsions during infancy are perinatal testicular torsions (intrauterine and postnatal in the first month of life). The prenatal diagnosis of testicular torsion is difficult and the diagnosis is often retrospective.

Materials and Methods: A term baby was born by uncomplicated normal vaginal delivery at a district general hospital, weighing 4240 grams. At birth, right scrotal swelling was noticed by his mother (image 1). The pregnancy was uneventful and antenatal scans were normal.

Results: A newborn examination revealed normal male genitalia, with right scrotal swelling, which was erythematous but non-tender and hard, measuring 4 x 3 cm, and did not transilluminate. Left testis was normal. An urgent ultrasound of abdomen and testes was performed, which showed heterogenous mass in right scrotum resembling testicular tissue measuring 2.6 x 1.4 cm. No vascularity was demonstrated within the mass on the power Doppler. The cord was visualised within the inguinal canal and appeared to rotate around its axis. There were also bilateral hydroceles. Left testis was normal. Ultrasound of the abdomen was unremarkable.

After 1 month of age the baby had a right-sided orchiectomy and contralateral orchidopexy at a tertiary unit with interim parental surveillance of the scrotum.

Conclusion: Reported literature shows prenatal history is very important in perinatal testicular torsion. Pre-eclampsia, gestational diabetes, twin gestation, large size, and prenatal hydronephrosis have all been linked to perinatal testicular torsion. Clinical findings and power Doppler sonography play an important part in deciding on further management of testicular torsion. In this baby’s case a large size was a risk factor and clinical examination and power Doppler identified perinatal testicular torsion.
A CASE REPORT OF ASYMPTOMATIC ECTOPIC POSTERIOR PITUITARY IN AN EX-PREMATURE 4 MONTHS OLD GIRL

Michail Sergentanis\textsuperscript{*1}, Ariana Spungina\textsuperscript{2}

\textsuperscript{1}The Princess Alexandra Hospital, Harlow, United Kingdom, \textsuperscript{2}Paediatrics, The Princess Alexandra Hospital, Harlow, United Kingdom

\textbf{Introduction:} Ectopic posterior pituitary results from disruption of normal embryogenesis of the posterior pituitary. These children are often of a short stature due to growth hormone deficiency. HESXI is the gene, which is associated with ectopic posterior pituitary.

\textbf{Purpose:} Ectopic posterior pituitary is rarely an isolated abnormality and is often associated with other congenital central nervous system anomalies, such as septo-optic dysplasia and corpus callosum agenesis.

\textbf{Image:}

\begin{center}
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\textbf{Materials and Methods:} Information was collected from the parents, patient notes and hospital databases.

\textbf{Results:} 31 weeks old baby, who was born at a district general hospital and was found to have a subependymal pseudocyst on a cranial ultrasound. At 4 months of age an MRI head was performed (image 1), which showed an ectopic posterior pituitary at the site of the proximal infundibulum. The anterior pituitary was within the sella and of normal intensity and there was no interruption of the pituitary stalk. There were no neuroanatomical abnormalities and no symptoms or signs of pituitary dysfunction. The patient had an isolated low free thyroxine, the rest of the endocrine tests were normal.

\textbf{Conclusion:} Reported literature shows ectopic posterior pituitary tissue can present incidentally in infancy, occur in isolation, without interruption of the pituitary stalk and does not always cause deficiency of pituitary hormones. However, these patients require long-term monitoring of late onset of symptoms as patient’s body’s requirements for pituitary hormones may change with age.
CASE REPORT - CHOROID PLEXUS PAPILLOMA AT INFANT

Tanja Rozek Mitrovic*1, Vesna Petrovic, Danilo Visnjevac

1Pediatrics, Health Center Indjija, Indjija, Serbia

Introduction: Choroid plexus papilloma most often occurs in children, it leads to clinical picture of hydrocephalus.

Purpose: The importance of early detection of patients with intracranial neoplasms, early surgery procedure and preventing complications.

Materials and Methods: data analysis from the medical documents.

Results: During the preventive examination of infant aged 5 months, highlighted axial and segmental hypotonia, in supination concavity to the left. In further clinical picture hydrocephalus was being developed, so it was immediately hospitalized. UZ, CT, Cranial MRI was made indicating that it is a neoplasm of choroid plexus origin measuring about 45x35x50 mm, which almost fully fills third ventricle and partially spreads in lateral ventricle with significant dilatation of all of the ventricles. After the tumor was diagnosed, VP-shunt was set, followed by operative extirpation of neoplasms. PH analysis: Papilloma atypicum plexus choroidei. The child was regularly and repeatedly examined by the neurosurgeon, neurologist and physiatrist as well as the Cranial CT and MRI. The child had regular physical treatments. At the age of 18 months in a young child during couple of days appears the neurovegetative symptoms – nausea, vomiting, followed by sleepiness and slowness. Cranial MRI was immediately made which registered presence of oval tumor formation which emerges from the roof of the third, right lateral ventricle that corresponds to recurrence of the tumor, measuring 36x31x39 mm. The child urgently operated again. Cranial MRI was made two times after the second surgery with normal findings.

Conclusion: Pointing importance of preventive pediatrician examinations as well as further clinical monitoring of patients who underwent CPP surgery because of the possibility of rest/recurrence.
EXAMINED THE EFFECT OF THE TRANSITION PERIOD TO TOTAL ORAL FEEDING OF PRETERM INFANTS WITH FEEDING METHOD AND FINGER FEEDING METHOD

Burcu Ozturkoglu, Senay Cetinkaya*

Introduction: Preterm infants can not be successful at receiving breast milk from mother breast in their first try. Until the baby is able to meet the nutritional meets through the mother breast, the use of the other dietary supplements methods such as finger feeding, spoon feeding, dropper, bottle can be necessary.

Purpose: This research is planned for the aim of finger feeding physional measurement the level of oxygen saturation, growing up, transition to total oral feeding and the period of staying in hospital at preterm infants.

Materials and Methods: The research was conducted experimentally at the Neonatal Intensive Care Unit 1-2 Unit of a university hospital between February 09, 2016 and November 6, 2016. The research was conducted with preterm infants with a gestational week of 32 weeks (including corrected age) and full enteral feeding in the clinic where the study was conducted.

Finger feeding was performed until preterm infants in the experimental group (n = 20) were fed to total oral feeding. No attempt was made in the control group (n = 20). The data were collected with "The Identifier Information Form of Preterm Infants" and "Preterm Infant Follow-up Form". Statistical analyzes were performed using the SPSS (IBM SPSS Statistics 20) package program. Ethical approval, formal permission and informed consent from mothers were made in order to conduct the research.

Results: A significant difference was found between the mean times of switching to full breastfeeding from the first breastfeeding in preterm babies in the fingerfed group and feeding fed group in favour of the fingerfed group (p<0.05). There was no statistically significant relationship between baby gender, gestation week and infant birth weight class (p>0.05). No significant difference was found between the two groups the mean weights at discharge and the mean times of discharge (p>0.05).

Conclusion: The research is an original work because when national and international literature is examined, there is no other research about finger feeding that used for supporting method for breastfeeding at preterm infants. It was found that preterm infants using the finger feeding method as a supplementary method to breastfeeding went to total oral feeding in a shorter time than feedle fed babies. In neonatal intensive care units preterm infants may be recommended to feed by finger feeding method.
THE IMPACT OF THE SMALL INTESTINE BACTERIAL OVERGROWTH SYNDROME ON THE COURSE OF NONALCOHOLIC FATTY LIVER DISEASE IN CHILDREN

Nataliya Zavgorodnya, Olha Lukianenko*, Irina Konenko, Elvira Zygalo, Oksana Petishko

Introduction: According to the multiple parallel hits hypothesis intestinal microflora plays a fundamental role in the nonalcoholic fatty liver disease (NAFLD) development.

Purpose: To study the influence of the small intestine bacterial overgrowth (SIBO) on the course of NAFLD in children.

Materials and Methods: The study included 36 patients aged 5-17 years. Determination of hepatic steatosis was conducted by «FibroScan®502Touch» apparatus with determination of controlled attenuation parameter. We performed a hydrogen breath test (HBT) with a load of glucose using gas analyzer "Gastrolyzer". According to HBT and presence of liver steatosis patients divided into 4 groups: 1 group - 7 patients with the presence of steatosis and SIBO, 2 group - 9 children with steatosis without SIBO, 3 group - 7 children without steatosis with SIBO, 4 group - 13 children without steatosis and without SIBO. We performed general clinical blood and liver function tests: total bilirubin, alanine aminotransferase (ALT), aspartate transaminase (AST), gamma glutamyl transpeptidase (GGTP). Shearwave elastography was conducted using apparatus UltimaPAExpert ("Radmir" Ukraine).

Results: We found that changes in the state of microflora of small intestine generally observed in 35% of patients. The frequency of dyspeptic syndrome was significantly higher in patients with SIBO (p<0,05). According to parameters of blood count the level of leukocyte as well as eritrocyte sedimentation rate (ESR) was highest in the 1 group but the significance of differences between 1 and 2 group was not sufficient. We found significant differences between level of ALT between 2 and 4 group (25,73 ± 15,39 - group 2, 16,32 ± 4,11 - 4 group, p<0,05), AST between 1 and 4 group (29,64 ± 17,03 - group 1, 14,66 ± 3,14 - 4 group, p<0,05), GGTP between 2 and 4 group (19,49 ± 7,37 - group 2, 14,93 ± 5,09 - 4 group, p<0,05). We found that liver stiffness had maximal levels in 1 group and was significantly higher than stiffness of the liver parenchyma in the 4 group (7,02 ± 4,19 kPa - 1 group, 6,63±0,71 - 2 group, 5,61±1,39 - 3 group, 5,43±1,77 - 4 group).

Conclusion: Thus, we found that patients with SIBO and liver steatosis had dyspepsia, increased average values of markers of cytolysis, cholestasis, tendency to accelerated levels of white blood cells and ESR and maximal value of liver stiffness. This data indicating a negative impact of SIBO on the course of NAFLD in children with progression of inflammation of the liver parenchyma and development of fibrosis.
BRAIN ULTRASONOGRAPHIC FINDING IN NEONATAL SEIZURE

Seyed Saeed Nabavi

Introduction: Screening of newborns with seizure, who have curable pathologic brain findings, might be able to improve their final outcome by accelerating treatment intervention. The present study aimed to evaluate the brain ultrasonography findings of newborns hospitalized with complaint of seizure.

Purpose: Currently, ultrasonography is considered to be used for various purposes such as measuring intracranial pressure / fracture diagnosis / etc. in emergency setting newborn intracranial lesions has been introduced during the 1990s, it has not been seriously considered until now, especially in third world countries. It seems that ultrasonography as a safe, affordable, available and bedside screening tool can be of great help for physicians in charge of such patients. Therefore, the present study aimed to evaluate the brain ultrasonography findings of newborns hospitalized with complaint of seizure.

Materials and Methods: The present cross-sectional study designed to evaluate brain ultrasonography findings of hospitalized newborns complaining seizure. Neonatal seizure was defined as presence of tonic, clonic, myoclonic, and subtle attacks in 1 - 28 day old newborns.

Results: 100 newborns with the mean age of 5.82 ± 6.29 days were evaluated (58% male). Most newborns were in the < 10 days age range (76%), term (83%) and with normal birth weight (81%). 22 (22%) of the ultrasonography examinations showed a pathologic finding. A correlation was only found between birth age and probability of the presence of a pathologic problem in the brain as the frequency of these problems was significantly higher in pre-term newborns (p = 0.023).

Conclusion: Based on the findings of the present study, significantly higher in pre-term newborns (p = 0.023). Frequency of pathologic findings in neonatal brain ultrasonography was 22%. Hemorrhage (12%) and hydrocephaly (7%) were the most common findings. The only factor correlating with increased probability of positive findings was the newborns being pre-term.
LAPAROSCOPIC APPROACH IN PEDIATRIC ABDOMINAL TRAUMA

Georgios-Christos Koulouriotis

1Pediatric Surgery Department A, General Children's Hospital of Athens 'Pan & Aglaia Kyriakou', Athens, Greece

Introduction: With the advent of fine precision instruments, minimally invasive surgery (MIS) has been applied in various specialties. Use of MIS in pediatrics developed more gradually than in general surgery. However, today laparoscopy is widely utilized for both blunt and penetrating injuries and it has gained popularity in the evaluation and management of pediatric patients with abdominal injuries.

Purpose: This review is aimed at evaluating the role of emergency laparoscopy as diagnostic and therapeutic tool in abdominal trauma and to highlight its advantages over an exploratory laparotomy. Laparoscopy and laparotomy have been compared using criteria such as patient selection, operative technique, duration of procedure, intra and postoperative complications, post-operative treatment, post-operative morbidity and mortality, course of hospital stay, cost effectiveness, late complications and return to normalcy.

Materials and Methods: Literature search and review was done using online search engines like Google, Pubmed, Springer Link and applications like Pediatric Surgery Internat. Selected articles were checked from their references and the universally accepted papers at recognized institutions were considered for this review study.

Results: Although laparoscopy is an invasive intervention, it has decreased the incidence of full laparotomy in patients with abdominal trauma. Examination of the intra-abdominal structures can be done in a minimally invasive fashion. Some of the advantages of laparoscopy over laparotomy are small incision, quick recovery, less pain and shorter postoperative hospital stay. The limitations include inability to visualize the entire abdominal cavity, especially the retro peritoneum and posterior diaphragm. Patients with hemodynamic instability or hemoperitoneum may not be suitable candidates due to unclear field. The evaluation and treatment of abdominal injuries are critical components in the management of pediatric abdominal trauma. Because missed intra-abdominal injuries are a frequent cause of preventable trauma deaths, a high index of suspicion is warranted.

Conclusion: MIS has been slow to gain popularity in pediatric surgical practice. However, with improved equipment and instrumentation suitable for children, more complex cases can successfully be treated today. Laparoscopy is well established in solving diagnostic dilemmas and in many cases it can also be therapeutic. Benefits of MIS like postoperative pain and shorter hospital stay also apply to its use in trauma.
A CASE REPORT OF A TERM BABY WITH UNILATERAL GRADE 4 INTRAVENTRICULAR HAEMORRHAGE (IVH)

Michail Sergentanis*1, Ariana Spungina1

1Paediatrics, The Princess Alexandra Hospital, Harlow, United Kingdom

Introduction: Intraventricular haemorrhage (IVH) occurs in preterm infants. The most common clinical symptoms are seizures and poor feeding. One third of IVH are graded as 3 to 4.

Purpose: IVH is rare in term neonates. The main source of IVH in term neonates is choroid plexus.

Materials and Methods: A term baby was born by uncomplicated normal vaginal delivery at a district general hospital. On day 4 of life, baby was noted to have right-sided brief, jerking movements. The pregnancy was uneventful and antenatal scans were normal.

Results: On examination, baby was noted to have a full anterior fontanelle. Neurological examination was unremarkable. MRI head showed grade 4 germinal matrix haemorrhage in the left ventricle with parenchymal involvement (image 1). Repeat MRI head at 6 months of age showed asymmetrical ventricles with dilated left ventricle. There were remnants of old blood in left ventricle posterior body, occipital horn and atrium areas. On subsequent follow-up, baby started to develop mild weakness of right side of the body. However, there were no significant seizures reported thereafter. There were no coagulation abnormalities. EEG did not reveal any epileptiform activity although baby showed automatic movements during the procedure. Neurodevelopmentally, baby is achieving milestones when she was followed up at 8 months of life.

Conclusion: Reported literature shows bilateral IVH and the majority of cases are secondary to coagulation abnormalities and dehydration secondary to poor feeding at birth. Irrespective of aetiology, such babies need regular neurodevelopmental monitoring for sequelae associated with periventricular leucomalacia.
PATHOLOGIC AEROPHAGIA: A RARE DISEASE
Marielle Patto

Introduction: Pathologic aerophagia is a rare reflex deglutition induced by the opening movement of the upper esophageal sphincter, paroxysmal, and its cause is unknown. It occurs through intense abdominal distension simulating cases of abdominal obstruction. It is frequently associated with intellectual deficit, autism spectrum disorders and emotional stress situations.

Case: 4-year-old MCCS, child of a non-consanguineous couple, went through a gestation marked by recurrent urinary tract infection and his mother went into a preterm labor at 23/7 weeks. A cesarean delivery was performed, the fetus was in transverse position, weight 1.4 kg, Apgar 8/9 - RNPT, MBP.

He presented early and late neonatal sepsis, meningitis and stage II retinopathy of prematurity, remaining in the ICU for 65 days. He has evolved having low vision, overall development delay, started speaking at 9 months and started walking at 1 year 7 months of age.

After reaching the age of 1 year 4 months, family members noticed regression in his speech, echolalia, that he did not obey to commands anymore, stopped playing with his toys and could only use inappropriate objects in order to bounce, for example, a sheet of paper; it was noticed self-aggression, presenting clinical characteristics of an autism spectrum disorder.

The possibility of auditory deficit was therefore discarded, and the patient was already undertaking multidisciplinary rehabilitation due to his prematurity.

Since the age 2, the child had presented cases of abdominal distention, having been brought to the Emergency Room several times. When examined, the patient presented prominent abdomen, hypertympanic to percussion, and when he was palpated there was immediate release of gases, with no visceromegaly.

The patient was tested for food allergies. It was performed a digestive endoscopy, a colonoscopy, an intestinal transit study and there were no evidences of any alteration.

As, during the last years, the case evolved with worsening of the distension, which got better only when the patient was asleep, the given diagnosis was: exclusion of the pathologic aerophagia. Then, clonazepam was introduced, promoting an improvement of the patient’s clinical state.

Discussion: As it is a rare disease, hard to diagnose, there are only a few studies that evaluate the recommended treatments. Gastrostomy is prescribed for decompression, mainly to patients with severe mental retardation; the use of antispasmodic is indicated, but has had little success; oral activated charcoal, that studies indicate to be more effective; and the use of benzodiazepines, clonazepam, since besides its action as an anxiety controller, it also acts by reducing the upper esophageal sphincter opening, operating in the main causes of the disorder. It took two years for our patient to be diagnosed and he showed an intense improvement after taking clonazepam.

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# AUTHORS INDEX

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<td>Ann-Charlotte Almblad</td>
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<td>Beate Frerich</td>
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<td>Domante Maciulyte</td>
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<td>Dong Qian</td>
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<td>Edgar Debray Hernandez</td>
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