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ABSTRACTS

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# ABSTRACTS

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# ABSTRACTS

## ORAL PRESENTATIONS

### ■ OP1: ORAL PRESENTATIONS: SESSION 1

Time: Thursday, 08/Dec/2016: 11:00am - 1:00pm

#### Presentations

ID: 140 / OP1: 1  
ORAL

#### ACUTE DIARRHEA OF VIRAL ETIOLOGY - REALITY OF A PEDIATRIC EMERGENCY DEPARTMENT

**Catarina Ferraz de Liz, Sara Soares, Ana Catarina Carvalho, Margarida S. Fonseca, Joana Matos, Ana Reis**  
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**Introduction and goals:** Acute diarrhea is a frequent cause of admission to the emergency department and hospitalization in children and remains a leading cause of mortality in developing countries. Enteric viruses are the most common infectious cause of acute diarrhea with the leading agent being rotavirus, followed by norovirus and adenovirus. The aim of this study was to characterize clinical and demographically all patients admitted to the Pediatric Emergency Department with acute diarrhea in which rotavirus or adenovirus were identified in the stool sample.

**Methods:** Retrospective analysis of medical records of children admitted to the emergency department with acute diarrhea and identification of adenovirus and/or rotavirus in the stool, between 2010 and 2014 using SPSS 20.0, Pearson correlations and chi-square test.

**Results:** During the studied period 12,832 children were admitted to the emergency department for acute diarrhea. Stool cultures were performed in 12,832 cases (15.7%), of which 300 (14.9%) were positive. A positive viral identification was found in 519 from a total of 2244 tests (23.1%)- 480 rotavirus (92.5%), 36 adenovirus (6.9%) and 3 co-infections (0.6%). Of all patients with rotavirus and/or adenovirus identification, 295 (56.8%) were male, with a median age of 10 months (minimum 16 days, maximum 12 years). 506 patients (97.5%) were less than 5 years old and 424 patients (89.6%) were from a rural environment. 95 children (18.3%) had record of acute diarrhea in a family member, in 467 cases there were no records of consumption of contaminated water or food (89.9%) and in 3 cases antibiotics were prescribed. In 93.6% there was no history of bloody diarrhea ( $p < 0.01$ ) and 71.7% required hospitalization ( $p < 0.01$ ). There was a higher identification rate in the winter (46.4%) as well as in infants (56.4%,  $p < 0.01$ ).

**Conclusion:** Enteric viruses are the most frequent cause of acute infectious diarrhea in children, with rotavirus being the leading agent. The results showed the reality of a sample from a rural environment and run counter to those described in similar studies. The identification was made mainly in the winter, blood in the stool was not part of the clinical presentation and antibiotics were generally not prescribed. In this analysis the need for in-patient care was high, which can be explained by a higher incidence in children younger than five years old and a higher etiological investigation in patients with severe clinical presentation.

ID: 232 / OP1: 2  
ORAL

#### ACUTE GASTRO-ENTERITIS IN YOUNG CHILDREN AT AN OUT-OF HOURS SERVICE IN THE NETHERLANDS: ARE THEY TREATED ACCORDING TO (INTER)NATIONAL STANDARDS?

**Freek Fickweiler<sup>1</sup>, J Post<sup>2</sup>, Z Dieterman<sup>3</sup>, S De Vries<sup>4</sup>, Y Lisman-van Leeuwen<sup>3</sup>, M.Y Berger<sup>3</sup>**

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**Introduction:** Acute gastro-enteritis (AGE) related hospital admissions in young children are rising in the last decade, especially in out-of-office hours. The referral rate from the out-of-hours service (OHS) in The Netherlands so far is unknown.

**Purpose:** To determine the referral rate and prescription behaviour of GPs for young children with AGE presenting at an OHS from 2008-2015.

**Methods:** Retrospective cohort study from 2008-2010 and 2013-2014: children (6 months-6 years) who visited an OHS in the Northern part of the Netherlands (300 GPs) with vomiting and/or diarrhea were included. Patient characteristics, symptoms, physical examination (hydration status), medication, referred, advices as reported by the GP were extracted from medical dossiers.

**Results:** 14466 consulted the OHS; 58% had a face-to-face encounter with the GP; 37% had diarrhea or vomiting en 50% was diagnosed with AGE ( $n=2662$ ; 53.4% boys; median age 20 months; IQR 11-37). De referral rate varied between 13-17%. Advice was given to 61% of the children, 18% were advised to take ORT en 10% got an anti-emetic prescription. Children at risk for dehydration ( $n=350$ ) were referred in 68% of the cases, the children that were not referred ( $n=111$ ) received advice, 47% ORT and 25% were prescribed anti-emetics.

**Conclusion:** The referral rate at this OHS varied between 13 and 17%. ORT was advised in 47% of the children with AGE that were at risk for dehydration, while (inter)national standards recommend this in all children that are at risk. Furthermore, anti-emetics were prescribed in 25% of the cases, while this is discouraged. Our data suggest that children with AGE whom are at risk for dehydration might not be treated according to (inter) national standards at this OHS.

OP1: ORAL PRESENTATIONS: SESSION 1

ID: 7 / OP1: 3  
ORAL

**IMPROPER USE OF ANTIBIOTICS IN EARLY CHILDREN INCREASES THE RISK OF ADRS AND DRUG RESISTANCE: THE FP-MCRN STUDY.**

**Ettore Napoleone<sup>1</sup>, Antonella Lavalle<sup>2</sup>, Cristiana Scasserra<sup>1</sup>, Simona Gentile<sup>2</sup>, Moreno Ricci<sup>1</sup>**

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**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.

**Purpose:** 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 2013, 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 2014 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.

**Results:** The results obtained highlighted that 3369 children (83%) of the total pediatric population (number of children between 0-2 years = 4060), received at least one prescription of antibiotic during 2013. In particular, a total of 7.114 prescriptions were dispensed, with amoxicillin/clavulanic acid as the first-choice treatment in 33% of patients. We are analyzing data to detect if there were any adverse events after antibiotic therapy.. This -very high- value of prevalence (83%) of the antibiotic prescriptions will be compared with the 2015 prescription data after FP-MCRN training and educational courses directed to the families and to the 37 FP.

**Conclusion:** The antibiotic over-prescription (prevalence-83%) exposes patients to an increased risk of side effects and drug resistance, both representing public health problems. Hence, the need to improve the activity of antibiotic prescribing, in particular in the early pediatric populations. The starting point must necessarily be cultural: an implementation of the culture of iatrogenic disease and a careful assessment of the correct diagnosis and therapy.

ID: 146 / OP1: 4  
ORAL

**INFLUENZA MORBIDITY AMONG CHILDREN: TWO SEASONS' DATA FROM A TERTIARY PAEDIATRIC HOSPITAL IN GREECE**

**Foteini Zafeiropoulou<sup>1</sup>, Maria Vasilopoulou<sup>1</sup>, Souzana Hatzinikolaou<sup>2</sup>, Dimitrios Kalendakis<sup>2</sup>, Olga Giannouli<sup>1</sup>, Zoi Mpeka<sup>1</sup>, Leda Sianidou<sup>1</sup>**

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**Introduction:** Influenza is a common cause of outpatient medical visits and hospitalizations among young children. According to data from the National Centre for Disease Control and Prevention, influenza morbidity and mortality during the period 2015-16 (predominant virus type A / H1N1) was more severe than that of the previous period (predominant virus type B). However, influenza type A caused the majority of deaths during both periods.

**Purpose:** The purpose of this study is to compare the influenza morbidity between the periods 2014-15 and 2015-16 among the paediatric population based on data from the Penteli General Children's Hospital in Athens, Greece.

**Materials and Methods:** Retrospective cohort study during two viral seasons (2014-15, 2015-16). Inclusion criteria: Children <18 years of age, who were hospitalized with laboratory confirmed influenza infection (Rapid Influenza Antigen Detecting Test, Polymerase Chain Reaction). The immunization status for influenza and the underlying health conditions were documented.

**Results:** A total of 58 children were hospitalized due to influenza over 2 viral seasons. 2014-15: Total of 16 admissions, 1 (6.25%) PICU admission (previously healthy child with encephalitis due to H3N2 virus). Influenza type: A: 87.5%, B: 12.5%. None of the children were vaccinated. Children in PICU with underlying conditions: 0%. Period 2015-16: Total of 42 admissions, 3 (7.14%) PICU admissions (two adolescents with Diabetes Mellitus type I and Dravet syndrome respectively and a previously healthy child with influenza and Respiratory Syncytial Virus co-infection. All presented with respiratory failure due to H1N1 infection that required invasive ventilation). Influenza type: A: 78.57% (H1N1), B: 21.42%. None of the children were vaccinated. Children in PICU with underlying conditions: 66%. Children in PICU with underlying conditions during both virus seasons: 50%.

**Conclusion:** Influenza morbidity was higher during the period 2015-16 among children, which is in agreement with national data. However, in spite of influenza type B prevalence on the general population during the period 2014-15, higher morbidity due to type A was documented among children in our hospital. Interestingly, the percentage of children with underlying conditions that exhibited severe disease that led to PICU admission was equal to those with no co-morbidities. The fact that influenza morbidity each season cannot be predicted as well as the fact that all children admitted in PICU were unimmunized, highlight the importance of vaccination against influenza among the whole of the paediatric population.

OP1: ORAL PRESENTATIONS: SESSION 1

ID: 143 / OP1: 5  
ORAL

**NON-SURGICAL CENTRAL LINE INSERTED IN PEDIATRIC INTENSIVE CARE UNIT IS AT HIGH RISK FOR INFECTION**

**Achille Yepmo<sup>1,2,3</sup>, David Faraoni<sup>1,2,3</sup>, Chantal Lermiaux<sup>2</sup>, Philippe Van Der Linden<sup>1,2,3</sup>**

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**Background:** Central line infection is a serious complication

**Objective:** To determine the rate of central venous catheter (CVC) infection and the predictive factors of CVC infection in Queen Fabiola University Children Hospital, Brussels, Belgium).

**Material and Method:** Prospective monocentric observational study that included all inserted CVC from November 2013 to May 2016. CVC were inserted either surgically or percutaneously. Outcome variable was CVC infection (defined as positive culture of the CVC associated to a positive central and peripheral blood culture with the same microorganism). Determinants of CVC infection were analyzed through multivariate logistic regression model that included the following variables: age of children, surgical vs non-surgical insertion, place and site of insertion, indication of CVC, duration of CVC

**Result:** During the study period, 577 CVC were inserted. Complete data were missing for 102 CVC. Only 475 CVC were analyzed, including 91 surgical and 61 non-surgical CVC. One surgical and 61 non-surgical CVC were infected. The cumulative duration of surgical and non-surgical CVC was respectively 30374 days and 6839 days. The crude rate of CVC infection was 0.03 and 8.9 per 1000 CVC days respectively for surgical and non-surgical CVC. The rate on infection in operating room, in pediatric intensive care unit (PICU), in neonatal intensive care unit (NICU) was respectively 6.9, 18.3, and 21.7 per 1000CVC days. There were no differences among the insertion sites (internal jugular, subclavian and femoral,  $p=0.075$ ). The only factor associated with outcome was non-surgical CVC insertion in PICU (OR 2.02, 95% CI (1.06-3.85),  $p=0.032$ ). In contrast, no difference between CVC inserted in NICU and operating room was observed (OR 0.64, 95% CI (0.34-1.21),  $p=0.17$ )

**Conclusion:** In the condition of our study, CVC insertion in PICU was a risk factor of infection. Our results are in accordance with the available literature. CVC inserted in PICU cumulates several risk factors for infection such as severe medical conditions, multi lumen CVC, many CVC, long duration of CVC, prolonged mechanical ventilation, parenteral nutrition, blood transfusion. To reduce the overall rate of CVC infection in our institution, a multimodal strategy should be set up. This strategy should necessarily include the education and the training of the staff as well as the implementation of a checklist.

ID: 199 / OP1: 6  
ORAL

**OSTEOARTICULAR INFECTIONS IN PATIENTS WITH SICKLE-CELL DISEASE: DIAGNOSIS AND MANAGEMENT**

**Teresa Painho<sup>1</sup>, Rosário Perry da Câmara<sup>1</sup>, Pedro Alves<sup>2</sup>, Susana Norte Ramos<sup>3</sup>, Raquel Maia<sup>4</sup>, Paula Kjöllström<sup>4</sup>, Catarina Gouveia<sup>5</sup>**

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**Introduction:** Children with sickle cell disease (SCD) are at high risk of osteoarticular infections (BI). No bone is predominantly affected and several bones can be affected at a time, mostly at the diaphysis. Diagnosis and management are difficult and not consensual and outcomes could be worse than in the general pediatric population.

**Purpose:** Analyse the diagnosis, management and outcome of patients with SCD admitted in our hospital with BI.

**Materials and Methods:** Retrospective and descriptive study. We retrospectively reviewed the records of all SCD patients admitted in our hospital in the last 6 years, with definitive diagnosis of osteomyelitis and/or septic arthritis and analysed demographic variables and clinical data including symptoms at presentation, analytical, radiological and treatment data.

**Results:** We identified 12 patients, 10 with acute infections and 2 with chronic osteomyelitis. Patients with acute infections were predominantly boys (60%), had a median age of 7 years (range 9 months to 14 years) and were diagnosed with septic arthritis (N=2), osteomyelitis (N=5; 1 with 2 episodes) or both (N=3). All these patients had pain, 63,6% (n=7) fever and 63,6% (n=7) inflammatory signs. The median time between initial symptoms and diagnosis was 11,5 days. The most commonly affected bones were femur (n=3) and tibia (n=3) followed by lumbar and dorsal vertebrae (n=2). The most affected joints were the hip (n=2) and elbow (n=2). Pathogens were isolated in only 2 cases (*Serratia marcescens* in blood and bone cultures, *Enterococcus faecium* in synovial fluid). MRI established the diagnosis in 9 cases, which was suggested by ultrasonography in 5 cases. The median duration of intravenous and total antibiotic treatment was respectively 26 days, and 6,7 weeks. Five cases required surgery. Most patients were treated with cefotaxime (63%) plus gentamicin (100%). Two patients later developed chronic osteomyelitis and 3 had limb deviations. The 2 patients with chronic osteomyelitis underwent prolonged antibiotic treatment (median 18,4 weeks) and multiple surgical debridement. Median follow-up was 2,5 years.

**Conclusion:** Timely diagnosis and appropriate treatment are the paramount to minimize complications in BI, particularly in SCD patients. Optimal antibiotic regimens remain controversial since data are still lacking for children with BI.

OP1: ORAL PRESENTATIONS: SESSION 1

ID: 72 / OP1: 7  
ORAL

**THE CHANGING BACTERIOLOGICAL EPIDEMIOLOGY OF OSTEOARTICULAR INFECTIONS IN CHILDREN**

**Celine Juchler<sup>1</sup>, Vasiliki Spyropoulou<sup>2</sup>, Noemie Wagner<sup>2</sup>, Laura Merlini<sup>3</sup>, Amira Dhoub<sup>3</sup>, Sergio Manzano<sup>4</sup>, Eleftheria Samara<sup>5</sup>, Dimitri Ceroni<sup>5</sup>**

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**Introduction:** Staphylococcus aureus is classically described as the most common pathogen for osteoarticular infections in children. But recently, with real-time polymerase chain reaction (PCR) methods, K. kingae has been demonstrated to be the predominant cause of OAI in young children.

**Purpose:** This study aimed to assess the changing bacteriological epidemiology of pediatric osteoarticular infection (OAI) using polymerase chain reaction (PCR) assays, with particular regard to children's ages.

**Patients and Methods:** This retrospective study enrolled children from 0–15 years old, admitted to our institution from 2007–2015, for suspected OAI (217 cases). Information on age, sex, and the bone or joint infected, imaging studies, and laboratory data (including bacterial investigations) were collected for analysis.

**Results:** Pathogens were recovered from 27.3% of the blood cultures performed, and from 30.7% of bone-biopsy specimens or joint-fluid cultures. Molecular probes identified pathogens in 79 additive cases. Using all these means of investigation together, microorganism identification was possible for 63.6% of infected children. The results of positive bacteriology specimens identified the most common causative pathogen for OAI as Kingella kingae (47.8%), significantly ahead of methicillin-sensitive Staphylococcus aureus (35.5%).

**Conclusion:** S. aureus is no longer the leading causative pathogen of OAI in children; using the appropriate PCR assays demonstrated that K. kingae is currently the major bacterial cause of pediatric OAI, especially in children less than 4 years old. Since standard culture methods usually fail to isolate the causative pathogen, PCR assays should be used in routine microbiological laboratory workups as they provide better diagnostic performance. However, despite these molecular methods, there are many OAI in which no microorganisms are detected, which suggests that these infections may be caused by other as yet unrecognized fastidious microorganisms

ID: 223 / OP1: 8  
ORAL

**TITLE CASE: DENGUE FEVER - A CASE REPORT**

**Riyanti Astrid Diahtantri<sup>1</sup>, Hendrawati Lilis Diah<sup>2</sup>**

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**Introduction:** Dengue fever is a leading cause of hospitalization and a common cause of child mortality in a tropical country like Indonesia.<sup>1</sup> The symptoms of dengue fever are biphasic fever, arthralgia, myalgia, and rash. These symptoms are similar to early phase of dengue hemorrhagic fever (DHF). The main characteristic of DHF is the presence of plasma leakage, which is absent in dengue fever.<sup>1,2</sup>

**Case Report:** This is a case report about 6 years old boy with a chief complaint of a high fever and body ache for 3 days. The fever was sudden and was worsening each day. On the 4th day the fever lowered down until the patient's body temperature was on the normal range. The patient developed abdominal pain without any signs of gastrointestinal bleeding. There is no history of sudden bleeding, headache, arthralgia, and myalgia. One of the patient's neighbors was admitted to the hospital with dengue fever. The patient was alert, vital signs were stable, four extremities were warm, and capillary refill time was brisk. The tourniquet test was negative. The patient's abdomen bloated with generalized abdominal pain, no sign of ascites. There were thrombocytopenia and leucopenia.

This patient came to the hospital 4 days after the fever first started and initially diagnosed with non-shock DHF with a differential diagnosis of dengue fever. The patient was given ringer lactate with constant monitoring of his vital signs, hematocrit, and thrombocyte level. 6 days after the fever initially started there were neither signs of pleural effusion, ascites, nor increased hematocrit level above 20% (hemoconcentration). This shows that there was no plasma leakage so the diagnosis is dengue fever. The initial diagnosis of DHF was made because the presence of plasma leakage was unknown. Therefore further investigation is needed to determine whether this patient is suffering from dengue fever or DHF.<sup>2</sup>

ID: 95 / OP1: 9  
ORAL

**LONG TERM FOLLOW-UP OF A PATIENT WITH HISTORY OF HYPOXIC-ISCHEMIC ENCEPHALOPATHY AND WHOLE BODY COOLING DONE – A CASE REPORT**

**Putu Amanda Yoga<sup>1</sup>, Joseph Manuel Gomez<sup>2</sup>**

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**Introduction:** Hypoxic-Ischemic Encephalopathy (HIE) is a condition where brain damage occurs in newborns due to reduced cerebral blood flow and/or systemic hypoxemia. This condition is associated with high mortality rate and neurodevelopmental delays. Whole body cooling or therapeutic hypothermia is a treatment method for HIE that reduces the combined risk of death or disability. The treatment gets its neuroprotective effect from lowering the temperature of the brain moderately to 32–34°C, which causes a decrease in cerebral metabolic rate.

**Purpose:** This case report is written to demonstrate a fourth year follow up of a child with a history of hypoxic-ischemic encephalopathy at birth and who underwent whole body cooling.

**Materials and Methods:** The patient was assessed on 12th May 2016 at the age of four years in a regular follow up clinic in a tertiary level children's hospital in Singapore.



**OP1: ORAL PRESENTATIONS: SESSION 1**

**Results:** On April 29th 2012, a female term baby was transferred to a tertiary level children's hospital in Singapore at four hours of age and was diagnosed with stage 2 HIE. The baby was delivered by a crash lower segment C-section due to placental abruption. Whole body cooling was started at four hours of age. Temperature was maintained within a 33-34°C range. The rewarming process was started at 72 hours of age. Patient was discharged on the fourteenth day of life and attends the outpatient clinic for regular follow-ups. She was assessed on May 12th 2016 when she was four years old. Her general health was observed to be very good. She demonstrated normal result in all aspects of growth and developmental with no evidence of neurodevelopmental sequelae.

**Conclusion:** Whole body cooling has been shown to be an effective way to reduce death and disability. This child has shown a very good outcome in all aspects of growth and development. A longer-term follow up is needed to assess for learning disabilities at school going age.

**ID: 167 / OP1: 10**  
**ORAL**

**CEREBRAL VASCULAR DISEASE IN SICKLE CELL DISEASE - PREVENTION AND SURVEILLANCE PROGRAM**

**Rosário Perry da Câmara<sup>1</sup>, Teresa Painho<sup>1</sup>, Manuel Manita<sup>2</sup>, Carla Conceição<sup>3</sup>, Sara Batalha<sup>1</sup>, Raquel Maia<sup>1</sup>, Paula Kjollerstrom<sup>1</sup>, Rita Lopes da Silva<sup>4</sup>**

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**Introduction:** Cerebral Vascular Disease is the main cause of chronic morbidity in pediatric Sickle Cell Disease (SCD) patients. Systematic screening using transcranial doppler (TCD) allows clinicians to stratify the risk of stroke and initiate effective primary prevention measures in high risk patients.

**Purpose:** Evaluation of the Cerebral Vascular Disease in SCD Prevention and Surveillance Program implemented since 2008 in a pediatric tertiary care center in Portugal.

**Materials and Methods:** Inclusion of children and adolescents with SCD and at least one appointment in the Pediatric Hematology clinic from January 2013 to December 2015. All children over 2 y.o. were scheduled a Pediatric Neurology appointment and follow-up TCD according to guidelines. MRI was requested if the patient had atypical headaches, abnormal neurological exam or previous pathological TCD results. Analyzed variables were demographic data, current therapy, pediatric neurology assessment (neurological exam, headaches and learning difficulties), TCD and MRI results.

**Results:** A total of 110 patients were included, median age of 10, 47% were female. Eighty-one patients (74%) attended the Pediatric Neurology appointment, 10 (12%) had an abnormal neurological exam. In clinic 32 (40%) reported regular headaches and 40 (49%) had learning difficulties. Six patients (5.5%) had a stroke (5 ischemic and 1 hemorrhagic) – only 3 occurred after 2008, 2 of which diagnosed after findings of mild hemiparesis in patients with normal TCD. From the group of 97 patients older than 2 y.o., 95 (98%) had at least one TCD performed, 63 (65%) done in the past year. In the last TCD performed, only 1 (1%) had a time-averaged maximum mean (TAMM) velocity  $\geq 200$  cm/sec and 4 (4%) had velocities in the conditional range (170–199cm/sec). Thirty-six patients (33%) performed cranial MRI, 16 (44%) had vascular pathological findings - 5 ischemic strokes, 1 hemorrhagic stroke, 10 silent cerebral infarcts (5 of which isolated), 6 intracranial stenosis or moya-moya pattern and 3 showed other changes such as fused basal ganglia.

**Conclusion:** The follow up of the patients is being done according to International Guidelines and the majority performs TCD regularly with a reduced number of pathological findings. In the last few years the clinical presentation of ischemic strokes was mild limb paresis diagnosed in the pediatric neurology appointment. This multidisciplinary prevention and surveillance program has contributed to improve health care in SCD patients.

**ID: 49 / OP1: 11**  
**ORAL**

**PRIMARY IMMUNODEFICIENCY: SITUATION IN KAZAKHSTAN (2013-2015)**

**Minira Bulegenova, Riza Boranbaeva, Liyat Manzhua, Tatyana Marshalkina, Alain Rumbault**  
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**Introduction:** The present report analyses the distribution and the symptoms of 28 cases of primary immunodeficiency (PID) among children admitted to the Scientific Center of Pediatrics and Children Surgery, Almaty, Kazakhstan over the period 2013-2015. Our data confirm that PID mimics various clinical syndromes, which makes an early diagnosis difficult. In fact, 3 fatal outcomes were observed in our center. Replacement therapy with immunoglobulins was used in 20 of the cases. Three patients (Wiskott-Aldrich syndrome, combined immunodeficiency and X-linked chronic granulomatous disease) are waiting for bone marrow transplantation. The mean time for PID diagnosis (1-2 years) and the high percentage of PIDs remaining unresolved (17.9%) stress the insufficient level of diagnosis. PIDs being emerging diseases of particular concern, our data may contribute to set up a PID registry for Kazakhstan. They also indicate the urgent need for physician education and to initiate collaborative efforts to implement modern immunogenetic methods.

**Conclusion:** From this present report, following points must be emphasized:

- (i) PID has different clinical aspects, which creates certain difficulties for an early diagnosis.
- (ii) There is a great need for more extensive information about PID among patients and their relatives to provide ongoing education for a careful adherence to medical recommendations.
- (iii) It is imperative to introduce during the medical formation specialized topics about PID for physicians of all clinical specialties to subsequently obtain their collaboration in diagnosis.
- (iv) Modern laboratory techniques for immunodiagnostics and the establishment of collaborative networks with other laboratories for immunogenetics and DNA sequencing must be implemented.

OP1: ORAL PRESENTATIONS: SESSION 1

**ID: 115 / OP1: 12**  
**ORAL**

**IBUPROFEN-INDUCED ASEPTIC MENINGITIS: A CASE REPORT**

**Sofia Alexandra Pires, Ana Lemos, Ester Pereira, Paulo Maia, João Agro**

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**Introduction:** Aseptic meningitis is one of the most common inflammatory disorders of the meninges and can be caused by infectious and noninfectious agents.

**Case report:** A previously healthy 15-year-old male presented to the emergency department with headache, nausea, dizziness, fever and blurred vision beginning 30 minutes after taking ibuprofen. A week earlier, he also had headache, nausea and fever during 1 day after ibuprofen-intake, prescribed because of a fracture. On examination, he was febrile and with conjunctival hyperemia. Laboratory tests revealed total white cell count 9900/ $\mu$ L (76,9% neutrophils and 19,4% lymphocytes), C-reactive protein 1,2 mg/L and negative blood culture. He was admitted for clinical surveillance. On day 2, the patient maintained fever and headache became worse, with emesis. On examination, he presented neck stiffness. Lumbar puncture showed clear cerebrospinal fluid with total white cell count 268/mm<sup>3</sup> (0% neutrophils and 100% lymphocytes), glucose 58 mg/dL, total protein 720 mg/dL, no organisms seen on Gram stain, negative screening for bacterial antigens and negative enterovirus polymerase chain reaction. Ibuprofen was discontinued and the symptoms resolved within 48 hours. The patient was discharged with a presumptive diagnosis of aseptic meningitis induced by ibuprofen. He was advised not to take non-steroidal anti-inflammatory drugs (NSAID). Screening for autoimmune diseases was negative.

**Discussion:** Ibuprofen is a NSAID widely used, being a main cause of aseptic meningitis drug-induced (AMDI). In our patient, the temporal relationship between ibuprofen-intake and onset of symptoms and the increased severity of symptoms during the second exposure to ibuprofen were helpful clues. AMDI is a diagnosis of exclusion and it must be considered in recurrent episodes and with rapid clinical resolution after drug removal, as observed in our case report. There is an association between AMDI and autoimmune diseases, but screening was negative.

**ID: 84 / OP1: 13**  
**ORAL**

*Topics:* GENERAL PEDIATRICS

*Keywords:* vitamin D deficiency in sunny kuwait

**VITAMIN D DEFICIENCY IN SUNNY KUWAIT**

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**Introduction:** Vitamin D deficiency is not uncommon in children; the lack of Vit D may result in signs and symptoms of rickets, generalized aches and pains or even a symptomatic. It is the Vit of the moment, it does not affect bone remodeling only but also in hormone secretion, immune dysfunction, cardiovascular system, cancers, and gum diseases. The aim of this retrospective study is to assess the prevalence of Vit D def in a sunny country like Kuwait and whether measuring Vit D level with any check up blood is worth doing for early recognition, treatment and concomitantly preventing disease progression. A total of 139 paediatric patients whose 25 OH Vit D3 level has been measured in the lab of New Mowasat Hospital in Kuwait over 6 months from Jan-July /2013 were recruited in this study, 86 boys and 53 girls, age range between few months-15 yrs. Lab results were considered normal, insufficient or deficient according to the hospital lab standard levels

**Results:** Most patients were vit D deficient, low levels were mostly in age group of >5 yrs, Most of the low levels were in summer months than winter.

**Conclusion:** Vit D deficiency is common in Kuwait, measuring Vit D level with any check up blood is worth doing for early detection and treatment which leads to early prevention of the disease progression. To start prophylactic treatment for under 5 yrs of age, to consider repeating this study in 2 yrs time to assess the value of prevention, early detection and treatment.

**OP2: ORAL PRESENTATIONS: SESSION 2**

Time: **Thursday, 08/Dec/2016: 2:00pm - 4:00pm**

**Presentations**

**ID: 126 / OP2: 1**  
**ORAL**

**BEWARE OF TEMPERATURE CHANGES... A CASE REPORT OF PAROXYSMAL COLD HAEMOGLOBINURIA**

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**Introduction:** Paroxysmal cold haemoglobinuria is an immune haemolytic syndrome characterized by the presence of autoantibodies reactive against specific red blood cell antigens. At low temperatures, this antibodies and the complement will fix to the red blood cells, leading to haemolysis upon warming up. This syndrome is mainly prevalent among paediatric age groups, affecting mostly male and children up to 5 years old. It is more frequently associated with viral infections and vaccinations post-immunization status.

**Clinical case:** 21-months-old male child, who presented with a six-day history of malaise, productive cough and fever, already medicated with Co-amoxiclav two days before. On physical examination, the child was prostrated, severely pale, but with no hemodynamic instability or difficulty



**OP2: ORAL PRESENTATIONS: SESSION 2**

breathing. He also had hyperaemic tympanic membranes and tonsil's hypertrophy with purulent exudate could be seen. Blood tests revealed the presence of severe anaemia (Hb 5.4g/dL), leucocytosis (19.90x10<sup>9</sup>/L), without immature cells in the blood film; reticulocytosis (4.6%) and evidence of hemolysis (haptoglobin <8mg/dL; LDH 1328U/L; bilirubin 1mg/dL and unconjugated bilirubin 0.6mg/dL), C-reactive-protein 56.7 mg/L. He received a transfusion of red blood cells (RBC) (15mL/Kg), initiated treatment with oral clarithromycin and reinforced the rewarming of the extremities with good results (Hb 9.6g/dL). He was discharged after six days, in a stable condition, after clinical and laboratorial improvement, with haemolysis resolution. Regarding serological investigation, the results revealed a positive IgM for *Mycoplasma pneumoniae*; positive direct coombs test, with specificity for CD3, and positive Donath Landsteiner test, leading to the diagnosis. An appointment in a paediatric haematology consult was made in order to assure the child's follow-up.

**Discussion:** This case reports a rare haemolytic syndrome, addressing the importance of being aware of its clinical features, in order to provide a prompt diagnosis and adequate treatment. Severe anemia, haemoglobinuria, presence of intravascular haemolysis, without hepatosplenomegaly, secondary to a viral infection are the main ones. In the clinical case presented there was a significant improvement just with treatment measures such as RBC transfusion and antibiotics for the underlying infection, with no need to use corticosteroids or immunosuppressive drugs. Despite the favourable outcome, additional follow-up must be placed in consult setting with periodic clinical and laboratorial reevaluations.

**ID: 179 / OP2: 2**  
**ORAL**

**CLASSIC GALACTOSEMIA – AN UNUSUAL FORM OF PRESENTATION**

**Catarina Melo Borges<sup>1</sup>, Tânia Filipa dos Santos Mendo<sup>1</sup>, Sónia Cristina Pereira Fernandes<sup>1</sup>, Cláudia Dias da Costa<sup>2</sup>, Laura Ferreira Teixeira Vilarinho<sup>3</sup>, Isabel Antolin Rivera<sup>4</sup>, Ana Maria Simões Mendes Gaspar<sup>2</sup>, Maria de Fátima Piedade Álvares Furtado<sup>1</sup>**

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**Introduction:** Classic galactosemia is a genetic condition, occurring in approximately 1 in 60,000 livebirths, inherited in an autosomal recessive pattern, associated with mutations in the GALT gene mutations, which predisposes to a compromised ability to metabolize galactose. It usually presents in the first days of life with jaundice, vomiting, hepatomegaly, failure to thrive, poor feeding, diarrhoea and sepsis. Although in some countries, its screening is routinely performed by newborn screening (NBS) program that does not happen in Portugal.

**Clinical Case:** We describe the case of a 2-month-year-old male child, without inbreeding and no relevant prenatal background, except for a minor unilateral hydronephrosis. He was admitted in our emergency department with paroxysmal nonepileptic events, mostly feed related, frequent regurgitation and failure to thrive. On physical examination, plagiocephaly and torticollis were noticed. Routine medical exams performed were normal, except for proteinuria. After medical discharge, he was referred to our out-patient clinic. His clinical evolution was characterized with maintenance by failure to thrive and developmental delay and Metabolic Disease Unit evaluation was requested. Inborn errors of metabolism (IEM) investigation revealed CDT > 5.3% (VR<2.6%), and renal tubular dysfunction. Urinary organic acids, sugars and polyols chromatographs were done. Ophthalmic evaluation was unremarkable. Brain MRI suggested IEM affecting mainly the white matter. Meanwhile CDG gene panel was inconclusive. A secondary CDG alteration where considered. Urinary profiles showed: polyol accumulation with Galactitol, 201mmol/mol Creatine (VR 6-71) and total Galactose on Guthrie's NBS was high: 36mg/dL e 52.3mg/dL. Compound heterozygosity mutation for Classic Galactosemia was detected. Galactose-restricted diet was initiated with great improvement in both his growth and development. CDT and urinary profile normalised and eGALP1P is now in good metabolic control reference pattern. Brain MRI was repeated by the age of two and significant regression of the signs seen before was noticed.

**Conclusion:** This case reveals an unusual form of presentation for a treatable disease. In our country Galactosemia is not on NBS panel so it was a diagnostic challenge that we have to consider when we have CDG profile alterations.

**ID: 31 / OP2: 3**  
**ORAL**

**CLINICAL CASE: BERARDINELLI-SEIP SYNDROME IN A 5 MONTH OLD CHILD**

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Lipodystrophies are heterogeneous inherited or acquired disorders that are characterized by selective loss of adipose tissue and a predisposition to developing insulin resistance and its associated complications, such as diabetes mellitus, hypertriglyceridaemia and hepatic steatosis. The clinical diagnosis of lipodystrophy is made on the basis of a physical examination. Level loss of adipose tissue should be measured in a clinic, but is not crucial for the diagnosis. The prognosis for this disease is poor and patients suffer from a severe form of diabetes.

**Clinical case:** Child R.N., 05.15.2015, was charged in Scientific Center of Pediatrics and children surgery (SCPCS) with preliminary diagnosis: Malabsorption syndrome, fermentopathy, malnutrition, celiac disease. Complaints at admission: fatigue during feeding, weakness, anxiety, unstable stool (8 times a day), abdominal distension.

**Health status at admission:** Weight of the child was in compliance with the age, therefore, the diagnosis of malnutrition was disputable. However, a child had a elongation of the upper and lower extremities, enlargement of foot, hands. Hypertrophy of the muscular tissue of the upper and lower extremities with severe hypotrophy of gluteal muscles. Hypertrichosis, premature teething, hyperpigmentation in the axillary and inguinal regions. The enlargement of the external genitalia. Progeroid like phenotype. Hepatosplenomegaly. The following competing diagnoses were proposed: lysosomal acid lipase deficiency, progeria, celiac disease, pituitary microadenoma. The biochemistry analyses revealed the considerable increase of the total protein, a significant hypertriglyceridemia, high atherogenic index (12.3), high levels of LDL (up to 320 U/ml), cholesterol within references parameters. X rays the bones: without marked changes, bone age corresponds to the patient's age. MRI of the abdomen and pelvic organs: a significant increase of the liver, the lower contour of the right lobe is located below the iliac crest, left lobe shifted the spleen downward.

**Consilium conclusion:** the diagnosis of acid lipase deficiency was disputable due to the lack of pathognomonic features of this disease. The study of acid lipase and beta-galactosidase activity was carried out on the basis of "Medical Genetic Research Center" Moscow, Russia. The enzyme activity in dried

**OP2: ORAL PRESENTATIONS: SESSION 2**

blood spots was within the reference range. The final diagnosis could be established only after a genetic test to identify the mutations that characterize the 4 main types of congenital generalized lipodystrophy. A homozygous mutation c.823C>T (p.R275\*) on the BSCL2 gene was identified, which corresponds to the type 2 of congenital generalized lipodystrophy. Despite the fact that the second type of congenital lipodystrophy is more common than other types of the disease in the Kazakh population it was identified and confirmed for the first time. Since the prognosis of congenital lipodystrophy is unfavorable, specific therapy with Metreleptin should be conducted. At the moment, the child's condition is stable and is under the supervision of pediatricians

**ID: 213 / OP2: 4**  
**ORAL**

**EFFECT OF KINESIO TAPING METHOD ON KINESIOPHOBIA, BALANCE AND PAIN IN A PATIENT WITH DUCHENNE MUSCULAR DYSTROPHY: A CASE REPORT**

**Baha Naci, H.Nilgun Gurses, Semiramis Ozyilmaz**

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**Introduction:** Duchenne muscular dystrophy (DMD) is a lethal neuromuscular disorder characterized by growing mobility and balance problems resulting from progressive weakness of body's muscles. In addition muscle contracture leads to limitation of joint motion, pain and fear of movement. Individuals with DMD typically become wheel chair-bound between the ages of 8 and 12 years. Kinesio Taping (KT) is a relatively new therapeutic approach applied for improving muscle function and circulation, decreasing pain, and increasing balance and functional capacity by supporting joint stability.

**Purpose:** The aim of this study was to investigate the effect of KT application on kinesiophobia, balance and pain in a case with DMD.

**Materials and Methods:** A boy with DMD (age: 8 years 9 months), who lost ambulation 6 weeks ago was included in the study. Kinesiophobia, balance and pain severity were measured by The Tampa Scale for Kinesiophobia (TSK), Pediatric Berg Balance Scale (PBBS) and Visual Analog Scale (VAS) at baseline and four weeks after treatment, respectively. Facilitation techniques of KT for musculus quadriceps femoris, rectus abdominis (Picture 1) and deltoideus were applied in conjunction with KT for ankle stability (Picture 3) and thoracic spine stability (Picture 4). All the applications were performed 2 times a week during a 4-week period bilaterally.

**Results:** TSK, PBBS and VAS scores were "58", "3" and "6.4 cm" in the first assessment. After treatment TSK, PBBS and VAS scores were "51", "5" and "3,8 cm", which suggests improvement in kinesiophobia, balance and pain scores with KT application.

**Conclusion:** The results indicate that various KT methods used for lower limb, trunk and upper limb were slightly effective on kinesiophobia and balance while they significantly improved pain relief. For further studies long term follow-up and higher participation rates are necessary to investigate the effect of different KT techniques.

**ID: 101 / OP2: 5**  
**ORAL**

**IMPACT OF EARLY DIAGNOSIS ON THE OUTCOME OF PEDIATRIC PATIENTS WITH MEDULLOBLASTOMA**

**Beatriz Corredor Andrés<sup>1</sup>, Jose Antonio Cadenas Alonso<sup>1</sup>, María del Mar Velilla Aparicio<sup>1</sup>, Teresa de Rojas<sup>2</sup>, Francisco Jose Bautista<sup>2</sup>, Lucas Moreno<sup>2</sup>**

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**Introduction:** Medulloblastoma is the most common central nervous system (CNS) malignant tumor in childhood. It is an embryonal, highly aggressive tumour, primarily located in posterior fossa and with marked tendency to spread along the neuroaxis. Given the low incidence and the lack of specificity of the signs and symptoms, diagnosis may be delayed.

**Purpose:** The aim of this work is to describe the main symptoms of children with medulloblastoma at diagnosis and to analyse the impact of delayed diagnosis (longer duration of symptoms) on overall survival.

**Materials and Methods:** Patients 0-21 years old with histological diagnosis of medulloblastoma from January 2003 to December 2014 were recruited in a Spanish reference pediatric oncology institution. Baseline characteristics, symptoms and their duration, extent of disease at diagnosis and overall survival were collected.

**Results:** 52 patients were included. Median age at diagnosis was 4.9 years (range 0.6-15.1). Main symptoms are shown on Table 1. Median duration of the main symptoms was 4.0 weeks (range 0.1-60.0). Overall survival at 5 years was 56.4% (95%CI 42-71%). The impact on survival of the duration of symptoms to diagnosis (<4 weeks versus >4 weeks) showed no statistically significant differences in univariate analysis (p>0.05).

**Conclusion:** As described in similar works in the literature, we were not able to demonstrate an impact on survival secondary to delayed diagnosis of medulloblastoma. Nevertheless, we consider it crucial for primary healthcare centre paediatricians to be familiar with the main symptoms at presentation of these patients, in order to continue providing early diagnosis.

**OP2: ORAL PRESENTATIONS: SESSION 2**

**ID: 100 / OP2: 6**  
**ORAL**

**PRE-DIAGNOSTIC CLINICAL PRESENTATION IN CHILDREN WITH MUCOPOLYSACCHARIDOSIS**

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**Introduction:** Mucopolysaccharidosis (MPS) are a group of rare diseases that lead to chronic and multisystemic disorders. They are caused by the absence or malfunction of lysosomal enzymes. MPS have a low incidence, with 1/22500. They are 6 main types of MPS, being I, II, III and IV the most common.

**Purpose:** The aim of this work is to describe the main symptoms and surgical procedures prior to the diagnosis of mucopolysaccharidosis.

**Materials and Methods:** Patients 0-18 years old with MPS were recruited in a Spanish reference pediatric neurology institution from January 2003 to December 2015. Symptoms, surgical procedures and psychomotor development prior to diagnosis were collected. Time to diagnosis was assessed from date of onset of first symptoms to date of diagnosis (defined by enzyme assays).

**Results:** 41 patients were included. Median age at diagnosis was 2.16 years (range 0-9.1). Main symptoms were: visceromegalies and/or umbilical/inguinal hernias 37%, otorhinolaryngological (ORL) disorders 34%, musculoskeletal disorders 27%, dysmorphic phenotype 27%, neurological disorders 10% and ocular disorders 2%. The most frequent initial symptoms according to MPS type were: musculoskeletal disorders (50%) in MPS1; ORL disorders (67%) in MPS2 and visceromegalies/abdominal hernias (71%) in MPS3. Psychomotor impairment was present at diagnosis in 35% patients. 41.5% patients were subjected to surgery prior to diagnosis. Most frequent procedures included: reduction of abdominal hernias (24%), ORL procedures (22%) and ventriculoperitoneal shunting 5%. 93% patients had developed symptoms during the first year of life. Nevertheless, only 59% were diagnosed with MPS before the age of 2.

**Conclusion:** Main initial symptoms in patients with mucopolysaccharidosis include visceromegalies, abdominal hernias, ORL, ocular and musculoskeletal disorders, dysmorphic phenotype and psychomotor impairment. A large proportion of patients have already been subjected to surgery at the moment of diagnosis. Most common procedure indications are ORL disorders, abdominal hernias and hydrocephalus. We consider it crucial for paediatricians to be familiar with the main symptoms of MPS and the most common surgeries of these patients. This will improve early diagnosis.

**ID: 138 / OP2: 7**  
**ORAL**

**RECURRENT IPSILATERAL ABDUCENS NERVE PALSY - RARE MANIFESTATION OF PSEUDOTUMOR CEREBRI: A CASE REPORT**

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**Introduction:** Abducens nerve palsy causes strabismus and abduction deficit. In pediatric age, isolated abducens nerve palsy may be congenital or acquired (post-viral, traumatic or idiopathic). Its incidence is 2,5 cases per 100000 in United States. Recurrences are rare.

**Case Report:** We describe a 6-year-old girl who presented four episodes of convergent strabismus of the left eye and diplopia since the age of 2 years. Episodes occurred once a year. Previous history of trauma, recent infectious disease and immunizations were denied. Family history was irrelevant. She was evaluated by a neuro-ophthalmology who confirmed abducens nerve palsy without papilledema on fundoscopy. Other cranial nerves were not affected. Her blood pressure was normal. Laboratorial evaluation revealed a normal hemogram and no changes in hepatic and renal function. Free thyroxine (FT4), free triiodothyronine (FT3) and thyroid-stimulating hormone (TSH) were normal and antithyroid peroxidase and antithyroglobulin antibodies were negative. Serologies for neuropathic virus and Borrelia were always negative. Myasthenia gravis was ruled out by a normal electromyography (EMG) and negative anti-acetylcholine receptor and anti-MuSK (muscle-specific kinase) antibodies. Brain and orbital magnetic resonance imaging were normal. The patient was treated with alternate patching. The symptoms improved slowly and abducens nerve palsy resolved completely and spontaneously within two to three months in all of the episodes. In the last episode, even without signs of papilledema on fundoscopy, lumbar puncture was performed and opening pressure measurement was slightly high (25 cmH<sub>2</sub>O). Cerebrospinal fluid (CSF) was limpid, with 3 cells/mm<sup>3</sup> and normal glucose and proteins concentrations. CSF culture was sterile. Treatment with acetazolamide (40 mg/kg/day) was started leading to a fast recovery. Idiopathic recurrent abducens nerve palsy as a manifestation of pseudotumor cerebri was assumed.

**Conclusion:** Benign recurrent abducens nerve palsy is rare in children. Some cases were related to febrile viral illness and immunization. We report a case of benign recurrent nerve palsy apparently associated with increased intracranial pressure. This diagnosis should be considered in any child who experiences abducens nerve palsy even in the absence of underlying pathology or precipitating factors.

**ID: 236 / OP2: 8**  
**ORAL**

**TYPOLOGY OF DISABILITY AND CHRONIC CONDITIONS IN ADOLESCENTS, RESULTS FROM HBSC FINLAND**

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**Introduction:** Article 31 of the United Nations Convention on the Rights of Persons with Disabilities states the need to report statistics on disabilities. However, definitions of disability have been constantly changing and therefore measurement of disabilities has been difficult. Studies have demonstrated that chronic conditions among adolescents are on the increase. Moreover, as a result of this activity limitations are on the rise.

**Purpose:** Explain the types of disabilities and chronic conditions from a generic question concerning the chronic conditions short questionnaire.

**OP2: ORAL PRESENTATIONS: SESSION 2**

**Methods:** The 2014 Finnish school survey data (n=3771) from the WHO Collaborative study Health Behaviours in School Aged Children (HBSC) Study. Only grade 7 (13-yrs-old) and 9 (15-yrs-old) took part in this study. Adolescents completed the Chronic Conditions Short Questionnaire, a modified Model Disability Questionnaire, and modified Disease symptom checklist for adolescents. Standardised cut-offs were based on modified WHO International Classification of Functioning, Disability and Health qualifiers.

**Results:** A quarter of adolescents (n=938) reported to have long term illnesses, disabilities or medical conditions. There were more girls (54.5%) than boys (p=.015) and no statistical differences were reported with age. Many adolescents reported to experience health related symptoms as a result of allergies (65.2%), as well as difficulties in remembering things or concentrating (52.7%) and breathing difficulties (28.6%). The extent of reported functional difficulties and symptoms were also reported. In many cases, combinations of these health conditions were common among adolescents.

**Conclusion:** Adolescents who responded to the chronic conditions short questionnaire also reported different categories of functional difficulties and health conditions. Measuring disability statistics in children is important for health promotion strategies that target populations with activity limitations and participation restrictions.

**ID: 66 / OP2: 9**  
**ORAL**

**EFFECTIVENESS OF PROTOCOLIZED SEDATION WITH THE COMFORT B SCALE IN MECHANICALLY VENTILATED CHILDREN**

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**Background:** Appropriate sedation in mechanically ventilated patients is important to facilitate adequate respiratory support and maintain an optimal level of sedation. However, no effective sedation protocol has been reported in children.

**Objective:** To assess the effectiveness of protocolized sedation with the COMFORT B scale in reducing the duration of ventilator use in mechanically ventilated children.

**Methods:** Prospective study conducted between November 2015 and August 2016 in 58 mechanically ventilated patients admitted to pediatric intensive care unit, Songklanagarind Hospital. All received protocolized sedation using the COMFORT B scale, which was assessed every 12 hours after intubation by single assessor. The prospective data was compared to the retrospective historical data of 58 mechanically ventilated patients who received usual care sedation from November 2014 to August 2015.

**Results:** A total of 116 mechanical ventilated patients were enrolled to this study. Patients in the intervention group showed no difference in the duration of mechanical ventilation (4.5 [2.2, 10.5] vs 5 [3, 8.8] days). There were no significant differences in PICU length of stay (7 vs 7 days, p = 0.59), hospital length of stay (18 vs 14 days, p = 0.14) between the intervention and control groups. The percentages of using sedative drugs in each group were not statistically different.

**Conclusion:** Using the COMFORT B scale with protocolized sedation in mechanically ventilated pediatric patients in the PICU did not reduce the duration of mechanical ventilation when compared to usual care.

**ID: 121 / OP2: 10**  
**ORAL**

**CEREBRAL VENOUS THROMBOSIS IN PEDIATRIC POPULATION, A DIAGNOSTIC CHALLENGE**

**Inês Ganhaõ, Catarina Lacerda, Mafalda Matias, Carolina Prehaz, Susana Rocha**

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**Introduction:** Cerebral venous thrombosis (CVT) represents an emerging cause of stroke in childhood thanks to the advances in neuroimaging techniques. It has an estimated annual incidence of 0,67/100000. The diagnostic process is challenging and often delayed, mostly due to the variable and low specificity clinical presentation. CVT results from a combination of genetic and acquired risk factors (e.g. infection, dehydration), which are generally identified upon diagnosis.

**Case History:** We present a 9-year-old boy, with a 3-month history of episodic headache, exacerbated within the last month, associated with intermittent fever, productive cough, nasal obstruction and occasional vomiting. Four days before admission, a right eye convergent strabismus became apparent, leading the child to our emergency department. Physical examination revealed right abducens nerve palsy, with secondary diplopia within the extreme direction of gaze, bilateral papilledema and decreased visual acuity. Contrast-enhanced head computerized tomography (CT) revealed sphenoid sinusitis, predominant on the left side, and right otomastoiditis. Blood tests showed lymphomonocytosis, with activated lymphocytes in the peripheral smear, and positive immunoglobulin M for cytomegalovirus (CMV).

He was admitted under antibiotic treatment with co-amoxiclav. Lumbar puncture was performed, revealing 36 cmH2O opening pressure. Cerebrospinal fluid studies were negative. Pseudotumor cerebri was considered. Treatment with acetazolamide was initiated, with headache improvement, as well as strabismus and optic disc swelling partial regression. However, magnetic resonance imaging (MRI) performed 9 days after admission revealed, besides the inflammatory process of right mastoid and sinusopathy, partial occlusion of right sigmoid and transverse sinus in a context of venous thrombosis. At this time, he started anticoagulant therapy with low-molecular-weight heparin. Further investigation revealed the allelic variant of plasminogen activator inhibitor-1 (PAI-1) 4G/4G in homozygosity and elevated homocysteine.

**Conclusion:** The diagnosis of pseudotumor cerebri is made in the presence of intracranial hypertension criteria, after exclusion of an underlying cause on appropriate neuroimaging techniques. These should always include a contrast-enhanced MRI in venous phase, the gold-standard exam for the diagnosis of CVT, even in the absence of visible lesions in the contrast-enhanced head CT.

OP2: ORAL PRESENTATIONS: SESSION 2

ID: 152 / OP2: 11  
ORAL

**COMPLICATED OSTEOMYELITIS – A DIAGNOSIS TO CONSIDERATE IN CLAUDICATION**

**Sara Soares<sup>1</sup>, Ana Lúcia Cardoso<sup>1</sup>, Catarina Ferraz de Liz<sup>1</sup>, Catarina Carvalho<sup>1</sup>, Carolina Oliveira<sup>2</sup>, Joana Manuela Freitas<sup>2</sup>, Joaquim Cunha<sup>1</sup>, Leonilde Machado<sup>1</sup>**

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**Introduction:** Bone infections are an important reason for incapacity in children, affecting mostly newborn and young children. Most infections occur through haematogenous spread, but minor trauma may be responsible for about 30% of cases. Large bones are the most frequently involved, with increased severity if affecting the epiphysis. Localized pain is the main warning sign, presenting sometimes in younger children with limb immobilization or constitutional symptoms. Diagnosis requires a high index of suspicion and a prompt start of treatment is crucial for the prognosis. Complications such as limited bone movement or length can occur in prepubertal children.

**Materials and Methods:** Case report of a 12 years old adolescent with a complication of sacroiliac joint osteomyelitis.

**Results:** A previously healthy twelve year-old female came to the emergency department (ED) with right sacroiliac pain radiating to the knee and muscular weakness. The pain had started 36 hours before, initially on her lower back, and was getting worse. Except for tenderness on the affected region, physical examination (PE) was normal and she was discharged home with symptomatic treatment. Seven days later, she returned to the ED for similar pain now associated with morning fever. A hip CT scan was performed, revealing no relevant alterations and she was discharged home with analgesia. Eleven days later, the pain kept getting worse and was now incapacitating, associated with insomnia and anorexia, and the morning fever was higher. On PE, she had a limp and severe hip tenderness with mobility limitation. Blood tests revealed anaemia, leukocytosis, thrombocytosis and increased inflammatory markers. Blood and urine cultures were negative. Abdominal ultrasound revealed a homogenous splenomegaly and a psoas abscess, which was confirmed by a CT scan, also showing right sacroiliitis with osteomyelitis. The patient was transferred to the Orthopaedic Department of a reference centre and the diagnosis was confirmed with MRI. The teenager was treated with flucloxacillin for 41 days and surgical debridement was required on the 25th day of admission. Staphylococcus epidermidis was isolated from surgical debridement samples. After clinical improvement the patient was discharged home with an 18 weeks course of antibiotics and is still in orthopaedics outpatient revision.

**Conclusion:** An osteomyelitis of the sacroiliac joint complicated with a psoas muscle abscess following minor trauma is a rare event. Correct diagnosis requires an adequate valuing of clinical findings and an early detection with prompt treatment is essential to decrease comorbidities.

ID: 123 / OP2: 12  
ORAL

**DEEP VEIN THROMBOSIS - A CHALLENGE TO THE PAEDIATRICIAN**

**Tânia Filipa dos Santos Mendo, Catarina Melo Borges, Teresa Sofia Moreira de Oliveira e Castro, Maria João Delgado Modesto Hrotkó, Isabel Alexandra Fonseca Morais Sevinete Pontes Brito Lança, Maria da Graça Rodriguez Seves**

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**Introduction:** Deep Vein Thrombosis (DVT) is a disease rarely seen in Paediatrics. The incidence is 0.07 cases per 10,000 children aged between 1 month and 18 years with a mortality rate of 2.2. There a number of causes of DVT, and whilst infants and teenagers are most affected, it can present at any age. A prompt diagnosis is the key to achieve a better prognosis.

**Clinical Case:** Here we describe the case of a 16-year-old female adolescent, who presented at our emergency department with severe pain in the right lower limb which intensified with walking. She started a combined oral contraceptive pill 6 months before, with no relevant past or family history of DVT. On the examination she had a cold and cyanotic right lower limb, with palpable pedis pulse and no other relevant findings. The laboratory tests showed positive D-dimer (36218ng/mL) and C-reactive protein (7.9mg/dL). The doppler ultrasound performed showed suggestive signs of phlebothrombosis in the right femoropopliteal veins, extensive deep thrombosis involving the internal gastrocnemius vein, popliteal vein and the superficial femoral vein until the common femoral vein, with almost total endoluminal hypoechogenic ultrasound signals. The homolateral superficial veins were compressible. Considering the hypothesis of DVT, she was admitted to our ward and started enoxaparin (1mg/kg bid). During the hospitalization, she displayed significant clinical improvement, with almost complete recanalization of the venous system. She completed 30 days of enoxaparin after which we switched to dabigatran on the advice of the Vascular Surgery Department.

From the initial investigation, there was a strongly positive lupus anticoagulant. All the other results were normal (complement, genetic tests and coagulation study). Tests were repeated after 12 weeks (per protocol) and these showed a moderately positive lupus anticoagulant remained. As the main diagnostic hypothesis was antiphospholipid syndrome she was referred to a rheumatology consultation for further investigation and follow-up.

**Conclusion:** Cases regarding adolescents provide new challenges as they often present pathologies that are not that common in Paediatrics. It is therefore of the utmost importance the screening and identification of the risk factors needed for an assertive diagnosis. For the orientation and therapeutics it may be important the engage with other medical specialists as in our case with Vascular Surgery and Rheumatology.

ID: 64 / OP2: 13  
ORAL

**HOW DOES ATTIRE INFLUENCE THE PERCEPTION OF DOCTORS BY CHILDREN AND THEIR PARENTS?**

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**Introduction:** Whether or not a doctor's attire has an impact on a patient's perspective of them has long been questioned. Adult's perceptions of doctors based on attire have been analysed numerous times, but literature on children's opinions is lacking and outdated. With the increasing range



## OP2: ORAL PRESENTATIONS: SESSION 2

of acceptable dress for doctors, children's attitudes towards a doctors clothing should be analysed, as well as the reasons for their answer choices in order to consider whether doctors in the media or literature will have had an influence on their responses.

**Purpose:** Evaluate the perceptions of doctors by children and their parents based on the doctor's attire, and assess whether parents are good predictors of their children's preferences or not.

**Materials and Methods:** 297 children aged 5-16 (divided into two age groups: 5-10 and 11-16 year olds), and their respective parents were individually asked a series of questions from age relevant questionnaires. Each question required participants to choose from a sample of four doctors wearing different attire: casual (Doctor A), theatre scrubs (Doctor B), formal (Doctor C), and white coat (Doctor D). The questionnaires were duplicated for male and female doctors. Age groups and genders were compared and all results analysed using chi-squared test.

**Results:** 11-16 year olds preferred female Doctor C (40.7%) and male Doctor B (41.5%). Doctor A (casual) was considered least knowledgeable, least clean, and liked least by 11-16 year olds. All results were statistically significant ( $p < 0.05$ ). 5-10 year olds preferred Doctor C (male doctor – 33.9%, female doctor – 29.3%,  $p < 0.01$  for both), and least liked Doctor A (male doctor – 37.9%, female doctor – 36.2%,  $p < 0.01$ ). Parents incorrectly identified their children's preferences for doctors based on attire with only 24.2% ( $p = 0.87$ ) and 22.6% ( $p = 0.40$ ) of parents correctly choosing for male and female doctors, respectively.

**Conclusion:** Children's and parent's perceptions of doctors are influenced by attire. Primary School children prefer a doctor in formal dress. Older children expressed a preference for a male doctor in theatre scrubs. Parents are poor predictors of their children's preferences for doctors based on attire.

ID: 76 / OP2: 14  
ORAL

### CLINICAL MARKERS AND PREDICTORS OF MALARIA-ASSOCIATED RENAL IMPAIRMENT IN UNDER-FIVES SEEN IN A TERTIARY HEALTH INSTITUTION IN NIGERIA

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**Introduction:** Malaria contributes 25.0% of disease burden in Nigerian children and may manifest with life threatening features and multiple organ dysfunctions. Acute kidney injury in children with severe Plasmodium falciparum malaria has high mortality even in best centers with facilities for renal replacement therapies. Therefore, clinical markers of malaria-associated renal impairment remain key factors to improved outcome. In view of this, identification of features and predictors of malaria-associated renal impairment, which may enhance early diagnosis and treatment in a resource poor country, becomes pertinent.

**Purpose:** To document clinical markers and predictors of malaria-associated renal impairment in under-5s in a tertiary health institution in South-south, Nigeria.

**Materials and Methods:** A cross-sectional study carried out from September 2012 to May 2013. Study participants were under-5s with severe malaria according to World Health Organization criteria. Malaria was confirmed in all children by standard protocol. Renal impairment was identified by glomerular filtration rate lower than the standard cut-off values ( $< 90$  mls/ min/  $1.73m^2$ ).

**Results:** The prevalence of renal impairment in children with severe malaria was 136 (68.0%). Mean  $[+]$  age of children with evidence of renal impairment ( $22.5 \pm 11.7$ ) months was significantly lower than  $26.6 \pm 11.8$  months observed in those without. Features of severe malaria that significantly were associated with renal impairment included severe anaemia ( $p = 0.048$ ) and coma ( $p = 0.02$ ). Development of malaria-associated renal impairment was 69.0% significantly higher with decreasing age ( $\beta = -0.40$ , O.R = 0.69,  $p = 0.02$ ).

**Conclusion:** Severe anaemia and coma in the younger age were significant clinical markers of malaria-associated renal impairment in under-5s.

## OP3: ORAL PRESENTATIONS: SESSION 3

Time: Friday, 09/Dec/2016: 9:00am - 11:00am

### Presentations

ID: 55 / OP3: 1  
ORAL

### LOCAL SCHOOL WELLNESS POLICIES ON NUTRITION & PHYSICAL ACTIVITY AMONG PRINCIPALS IN ISRAEL

Riki Tesler<sup>1</sup>, Yossi Harel-Fisch<sup>2</sup>

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**Background:** A most significant factors of a school's entire health program is a properly structured health promotion policy (school wellness policy) delineated by the principal. This policy includes mapping the school's needs, establishing procedures, determining desired behaviors, and developing and advancing health promotion programs. According to well-known models in the scientific literature on the subject of health promotion and education, the school principal has a decisive role and direct impact on the development and design of the behavioral-health culture among students and teachers, and of course on the success of health change and implementation.

**Purpose of the research:** Examination of the relationship between the nutrition and physical activity encouragement policy and actual implementation.



### OP3: ORAL PRESENTATIONS: SESSION 3

**Study population:** Participants were 146 principals (72 females and 74 males).

**Method:** Quantitative research that is part of a multinational study Health Behavior in School-Aged Children (HBSC) under the auspices of the World Health Organization (WHO).

**Results:** The findings indicate a relationship in all areas relating to nutrition, more so than to physical activity, and greater among female compared to male principals. The relationship is more prevalent among elementary school principals than junior high school and high school principals.

**Conclusion:** This study emphasizes the importance of the principal's "school wellness policy" in actual implementation of a healthy lifestyle (nutrition and physical activity) among the school community: students, teachers and parents. In Israel, continued development and planning, and in particular implementation, of School Wellness Policies in schools are needed.

ID: 97 / OP3: 2  
ORAL

### THE SOCIOECONOMIC IMPACT OF PAEDIATRIC FRACTURE CLINIC ATTENDANCE

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**Introduction:** Many common fractures in children have been identified as stable injuries that do not require specialist orthopaedic intervention or follow up. Recent studies have demonstrated the financial benefit to the NHS of reducing fracture clinic attendances for patients with these injuries, through the use of various strategies; including virtual clinics and emergency department direct discharge protocols. However, few studies have demonstrated the benefits to patients and relatives of reducing clinic attendances.

**Purpose:** The aim of this study was to determine the socioeconomic and educational impact of attending paediatric fracture clinic appointments by quantifying the cost incurred by parents or guardians and the amount of days of work and school lost to attend clinic.

**Materials and Methods:** Patients attending clinic over a one-week period were given an optional questionnaire at the time of attendance.

**Results:** Data was collected for 64 paediatric patients. 61 patients were in full time education. All patients were accompanied (58 by parents, 3 by others). 24 patients were accompanied by more than one person. The average number of appointments previously attended by patients for this diagnosis was 1.84 (Standard deviation 0.98 range 1-6). This accounted for 36 days of school lost (13 full days, 40 half days) and 18 days of work lost (5 full days, 26 half days). 20 people lost pay due to children attending fracture clinic at an average of £49.13 (standard deviation 47.13, range £7.50 -£200.00). 2 patients arrived by public transport at an average cost £5.50 (standard deviation 0.71 range £5.00 - £6.00), 45 patients arrived by car with an average parking cost of £2.61 (standard deviation £2.41 range £0.00 - £12.00), 13 patients arrived by taxi at an average cost £6.72 (standard deviation 3.74 range £1.80 - £15.00), 2 patients reported other costs associated with attending clinic at an average of £10.00 (standard deviation 7.07 range £5.00 - £15.00).

**Conclusion:** Our results demonstrate that the average cost of attending a paediatric fracture clinic appointment is £18.14, 0.30 work days and 0.55 school days. No previous studies have quantified the direct financial cost to of attending paediatric fracture clinic appointments in the UK. Along with the already established financial benefit to the NHS, employing various strategies to reduce the number of fracture clinic attendees can not only also financially benefit patients individually, but can also have financial benefits to the UK economy, and minimise the educational impact of missed school days.

ID: 107 / OP3: 3  
ORAL

### TOWARDS A BETTER UNDERSTANDING OF TEACHER CONNECTEDNESS IN ADOLESCENCE: THE ROLE OF SCHOOL LEVEL FACTORS

**Irene Garcia-Moya<sup>1</sup>, Fiona Brooks<sup>1,2</sup>, Neil Spencer<sup>1</sup>**

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**Introduction:** School is an important site for young people's health and wellbeing, with teachers having the potential for being a key element of the wider public health workforce. School characteristics, such as school size and the number of different teachers students engage with, can have a significant impact in the quality of teacher-student relationships. Unfortunately, most studies in this area have tended to subsume relationships with teachers within the broader concept of school connectedness, and therefore the impact of school factors on teacher connectedness specifically has remained under-explored.

**Purpose:** As part of the EU funded Teacher Connectedness Project, this study aimed to conduct an initial examination of the potential contribution of a wide variety of school-level factors (including type of school, single-sex vs mixed schools, school size, student-teacher ratio, mean number of students per class and percentage of female teachers) to teacher connectedness in a representative sample of English adolescents.

**Materials and Methods:** Sample in the 13/14 edition of the Health Behaviour in School-aged Children in England consisted of 5,335 adolescents aged 11, 13 and 15 years from 48 schools (a total of 261 classes). Multilevel modelling was carried out using teacher connectedness as the dependent variable. The aforementioned school-level variables along with sex, grade and family affluence were automatically included in the model based on our literature review, whereas stepwise selection (with the criterion for entry set at the 1% level of significance) was undertaken to investigate the possibility to include additional school-level factors.

**Results:** Grade, family affluence, student-teacher ratio, single-sex vs mixed school and school location were significantly associated with teacher connectedness ( $p < .01$ ).

**Conclusion:** It is important that the design of health interventions in schools considers how teacher connectedness changes by age and SES, since connectedness tended to decrease in higher grades and be lower in those from less affluent families. In terms of school characteristics, it was not the size of the school but the ratio of students per teacher which was significantly associated to teacher connectedness. Our results also showed more positive results in mixed schools than in all-girls schools, although this finding must be cautiously interpreted given that only 4 all-girls schools were part of the study sample. This is an aspect, nonetheless, that deserves further examination in future research.

**OP3: ORAL PRESENTATIONS: SESSION 3**

**ID: 170 / OP3: 4**  
**ORAL**

**RISKS AND ASSETS IN ADOLESCENTS LIVING IN A DISORDERED NEIGHBOURHOOD**

**Ana Villafuerte-Díaz<sup>1</sup>, Francisca López-Gaviño<sup>2</sup>, María del Mar González<sup>2</sup>, Antony Morgan<sup>3</sup>, Concepción Moreno-Maldonado<sup>1</sup>, Carmen Moreno<sup>1</sup>**

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**Introduction:** Previous studies have shown that living in a disordered neighbourhood (with low social cohesion, socioeconomic disadvantages and high rates of criminality) has an effect on adolescent health and lifestyles. Specifically, findings support that adolescents living in this context and with a higher awareness of disordered neighbourhoods tend to present higher rates of alcohol, cannabis and tobacco consumption, as well as having more antisocial lifestyles and psychosomatic complaints. However, little is known about the assets of those adolescents living in an at-risk neighbourhood.

**Purpose:** The aim of this study is to identify risks and positive factors related to adolescent lifestyles, health and social context in a group of adolescents living in a disordered neighbourhood, compared with normative adolescents.

**Materials and Methods:** Data comes from the 2014 edition of the Health Behaviour in School-aged Children (HBSC) study in Spain. For this study the sample includes (1) 461 students from an at-risk neighbourhood in the region of Andalusian and (2) two groups of normative students representative of the adolescent population at a regional and a national level (composed of 1,977 and 31,058 students respectively) between 11 and 16 years old. Items related to lifestyles (eating habits or risk behaviours), health (life satisfaction or psychosomatic symptoms) and social context (family and friends relationships) were selected from the HBSC Questionnaire. Descriptive analyses, as well as mean comparisons and correlational analysis were performed, using different tests for assessing the effect size.

**Results:** Findings showed that adolescents living in an at-risk neighbourhood presented more unhealthy habits regarding breakfast, fruit, sweets and soft drink consumption, frequency of teeth brushing, sedentary behaviours and sleeping habits when compared with the normative population. However, there were no differences in alcohol or tobacco consumption, and adolescents living in disordered neighbourhoods presented even lower cannabis consumption. Despite reporting having more sexual relationships and using condoms less frequently, girls in at-risk neighbourhoods also showed less use of the 'morning after' pill than the normative sample. In addition, adolescents in at-risk neighbourhoods reported similar or even higher levels of family and friends satisfaction as well as liking school when compared to the normative adolescents, however, showed almost double of the amount of antisocial behaviour and higher proportion of adolescents feeling low and irritable.

**Conclusion:** An interpretation of some unexpected findings, as well as similarities and differences between the normative and the at-risk adolescents will be discussed, attending previous literature and also differences reported between the age groups. Some implications for designing effective interventions will be also offered.

**ID: 90 / OP3: 5**  
**ORAL**

**THE EVIDENCE AND THE EFFECT OF THE ECONOMIC RECESSION ON THE HEALTH OF ITALIAN ADOLESCENTS.**

**Alberto Borraccino, Paola Dalmasso, Franco Cavallo, Patrizia Lemma**

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**Introduction:** In the last 10 years many countries within the European Union have faced a strong economic crisis, often referred to as the Eurozone crisis. The crisis had significant adverse political, economic and labour market effects. The Italian National Statistical Institute (ISTAT) set the beginning of the economic crisis in Italy in 2008-2009 with a peak of recession in 2012-14. Several studies showed a relationship between the crisis and reduction of many health indicators in the adult population. While the phenomenon has interested the whole population it still remains poorly explored among adolescents.

**Objective(s):** The study aims to explore whether one of the economic indicator validated to be used in adolescents' surveys is able to depict the economic recession in Italy in the period 2001-2014, and whether it is possible to discuss any effect on specific health outcomes among youths.

**Method:** The Family Affluence Scale (FAS) is a reliable Socio Economic (SES) Indicator of family wealth. It has been developed in the WHO Health Behaviour in School-aged Children (HBSC) Study as an alternative measure of family income and occupation to be used in youth surveys. For the first study' aims the FAS national trend was analyzed in the four consecutive waves 2002, 2006, 2010 and 2014 using the Italian HBSC international data. The relationship between the FAS and specific health indicators (adolescents self rated health, life satisfaction and psychosomatic health complaints) was explored using the 2010-2014 Italian samples, collecting more than 60.000 students for each study wave.

**Results:** The FAS reflects the economical pattern observed in Italy during the crisis. The students in the highest FAS group increased from 26.7% to 44.5% during 2002-2010, reversing in 2014 to 24.1%. Consistent patterns were also observed in medium- and lower- FAS-group. While Self-rated health was steady between 2010-2014, the Life Satisfaction scale showed a significant decrease among 13- and 15-year-old girls. Consistently, psychosomatic health complaints increased, mainly for psychological symptoms, among the same age- and gender-group.

**Conclusion:** The FAS is able to describe the shifting in the economic affluence among adolescents' families, coherently with the change observed in health outcomes. Our results show that the economic crisis was somehow perceived also by adolescents, and it could have had an immediate effect also on their health, in particular among the girls and in the highest SES. Further analyses should be conducted on a broader set of health outcomes and among other hit countries.

OP3: ORAL PRESENTATIONS: SESSION 3

ID: 89 / OP3: 6  
ORAL

**A CASE STUDY WITH PORTUGUESE ADOLESCENTS WITH CHRONIC DISEASES IN A CLINICAL CONTEXT: INFLUENCES FROM HBSC STUDY**

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**Introduction:** A chronic condition during adolescence can represent a major challenge for adolescents and it may place them at higher risk for vulnerable health outcomes. However, the impact of chronic disease on Health-related Quality of Life (HRQoL) and physical/psychological functioning in adolescence is a complex phenomenon, frequently with controversial results.

**Purpose:** Inspired by previous studies that explored and characterized Quality of Life (QoL) and psychosocial functioning in chronically ill Portuguese adolescents at a national-representative level (using the cross-sectional and international survey Health Behaviour in School-aged Children - HBSC 2010), the main aim of the present work is to assess the impact of living with a chronic disease on Health-related Quality of Life (HRQoL) and Psychosomatic Health in chronically ill adolescents in a specific clinical context.

**Materials and Methods:** Using cross-sectional data collected in a paediatric outpatient department in a hospital setting, a sample of 135 adolescents (51.9% boys, 14±1.5 years old), having an average age of 14±1.5 years (SD=1.5), with diabetes mellitus (DM), allergic diseases (AD), or neurological diseases (ND) was included. From these, the majority of the adolescents reported not to feel affected in regular attendance at school (82.2%), and nor in leisure time with friends (86.7%). Chronic condition was defined as a long-term disability, illness or medical condition that has been diagnosed by a doctor. The study variables were respectively measured with the KIDSCREEN-10 (HRQoL) and the HBSC Symptom Checklist (Psychosomatic Health). Comparisons by type of chronic diseases were conducted and descriptive statistics and ANOVA were performed. The significance level was set at  $p < 0.05$ .

**Results:** No statistically significant differences were observed between the three groups of chronic diseases, both for HRQoL (DM=80.0±13.0 vs. AD=79.7±12.7 vs. ND=79.2±11.6)  $F(2,132)=0.24$ ,  $p=0.976$ ), and for Psychosomatic Health (DM=35.3±4.3 vs. AD=36.1±5.0 vs. ND=35.0±5.2)  $F(2,132)=0.627$ ,  $p=0.536$ ).

**Conclusion:** These findings must take into consideration that this is a clinical and non-representative sample. Nevertheless, such results highlight and are in accordance with a non-categorical approach defined in the literature, which suggests that regardless of the biological diversity of different diseases and independently of the nosological categories, the experience of living with a paediatric chronic disease can have similar psychosocial features. In a wider and generic perspective, this can be particularly relevant for clinicians and health-care policies while planning supportive interventions, addressing the common needs of most youths. However, in addition to generic interventions, it may be proposed the need to simultaneously take into account the evaluation and identification of individual specificities.

ID: 69 / OP3: 7  
ORAL

**IS PARENTAL UNEMPLOYMENT A CALL FOR ADOLESCENTS' GREATER PSYCHOSOCIAL SUPPORT? FINDINGS FROM THE PORTUGUESE HBSC STUDY**

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**Introduction:** Since the economic recession, Portugal has one of the highest unemployment rates in the EU. The negative effects of unemployment on adults' well-being have been widely recognized. Because adolescents' well-being is highly shaped by their living contexts, these negative may follow a chain-effect pattern, whereby unemployed parents and their children may be both affected.

**Purpose:** The purpose of this study was to examine, in a national representative sample, the presence of significant differences in levels of adolescents' well-being living with or without unemployed parents in a country with a high unemployment rate (Portugal).

**Materials and Methods:** The analyses were based on data from the cross-sectional Portuguese Health Behaviour in School-aged Children study (HBSC/WHO) from 2010 and 2014. The study included a sample of 4541 students (48% boys) with a mean age of 14 years old ( $\pm 1.3$ ) in 2010 and of 3152 students (47% boys) with a mean age of 15 years old ( $\pm 1.2$ ) in 2014. To determine if the differences in well-being outcomes (life satisfaction, emotional well-being and subjective health complaints) were statistically significant, linear and binary logistic regression models were applied (95% confidence intervals,  $p < 0.05$ ), considering parental unemployment as a predictor.

**Results:** The analyses showed there was a statistically significant association between living with unemployed parents and reporting low well-being outcomes. The main vulnerability factors found were: paternal unemployment, poor family relationships, low socioeconomic status, being a girl, being younger or an older son with unemployed father.

**Conclusion:** The findings from this present research work enhance our understanding of how parental unemployment may affect adolescents' well being and drive implications for future research and for public policy. Such knowledge may improve the design of actions to increase well-being among adolescents dealing with unemployment in the family, which will tend to shape better future adult well-being.

OP3: ORAL PRESENTATIONS: SESSION 3

ID: 129 / OP3: 8  
ORAL

**THE FORGOTTEN AGE OF CHILDHOOD**

**Philip Anthony Stewart<sup>1</sup>, Caoimhe Costigan<sup>1</sup>, Aisling McCann<sup>2</sup>, AnneMarie Murphy<sup>1</sup>, Edward Michael A Corry<sup>2</sup>**

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**Introduction:** Adolescence, the seventh age of childhood is the least understood, least researched and therefore the least resourced of all the developmental ages. The 2016 Government of Ireland projects reports that there are now 404,540 people between the ages 12 and 18 years living in Republic of Ireland. Of these, 173,146 inhabit that twilight zone of 14-16 years of age. Our institution encompasses 6 hospital sites including stand-alone Maternity and Orthopaedic hospitals and caters for a catchment area of 100,000 individuals under 18 years of age with 18,387 of these estimated to be in the 14 – 16 year age group. Their needs are currently not met by either Paediatric Services targeted at younger children or a General healthcare services designed for adults.

**Purpose:** The aim of our study is to collate data on the characteristics of hospital admissions of patients aged between 14 and 16 years in our region with a view to appropriate infrastructure and workforce planning for the future for this neglected age group.

**Materials and Methods:** The study period was taken as a ten year time frame between the 01.07.2006 and 01.07.2016. Details of hospitalisations of patients aged between 14 and 16 years admitted to each of the six hospitals in our hospital group were identified from our electronic databases. Diagnosis, reason for inpatient stay, comorbidities, duration of stay, specialty of admitting consultant and type of inpatient ward were documented.

**Results:** A total of 10,992 patient contacts met the criteria for inclusion in our study. Of these 7,880 were admitted to the main hospital, 240 to the Maternity Hospital, 379 to the Orthopaedic Hospital and 941, 949 and 593 respectively to the three level one hospitals in our hospital group. Patients were housed in Paediatric wards in 1,873 cases, Maternity wards in 240 cases, Surgical in 3,201 cases, Medical in 1,669 cases and mixed or others in 4,009 cases. Patients were admitted under Consultants as follows – Surgeon 55.88%, Physicians 28.5%, Obstetricians/Gynaecologists 3%, Paediatricians 11.3% and others 1.2%. Diagnosis in order of frequency were Medical, Surgical, Trauma, Obstetric, Psychiatric illnesses and others.

**Conclusion:** The appointment of a physician with a special interest in Adolescent Medicine would lead to the creation of an age appropriate environment for patients at this sensitive developmental age and a more standardised and structured approach to their care.

ID: 141 / OP3: 9  
ORAL

**HEALTH INDICATORS AMONG GUATEMALA CITY YOUTH**

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**Introduction:** Despite the inclusion of Adolescent health in the UN Secretary General's Global Strategy for Children's Health as well as the UN's Sustainable Development Goals framework, there has been limited data on adolescent health indicators in low-income countries.

**Purpose:** To identify a series of risk behaviors, socio-economic measures, and health status of youth in Guatemala.

**Methods:** We conducted a secondary data analysis of the Pan American Health Organization's (PAHO) Sistema Informatico del Adolescente (SIA) clinical registry of youth aged 10-24 years in the greater Guatemala City region. Registry items include a series of measures encompassing the following domains: (1) medical history, (2) socio-economic status, (3) risk behaviors, and (4) mental health status, collected during a medical visit in an adolescent interdisciplinary clinic. We examined frequencies for a core set of registry items from 2009 - 2014. Chi-square and non-parametric rank-based tests were used to evaluate differences in these responses by gender.

**Results:** Among 2832 youth (median age 14 years (25th, 75th) quartiles = (12, 17) years, 72% female), 17% reported a history of chronic illness, 17% reported severe psychological problems, and 11% had experienced violence. Socio-economic status was measured by maternal and paternal education levels (32% of youth's mothers and 35% of fathers had completed secondary education), parental employment (52% of fathers and 21% of mothers with a stable job), and housing stability (less than 3% of youth reporting overcrowding, lack of electricity, running water, or outdoor plumbing). Youth were food secure with a median of 3 meals per day; and fairly sedentary with a median reported physical activity of less than 1 hour a week; a minority (12%) were dissatisfied with their body image. Nearly one-third (30%) of youth reported being sexually active; the median age for coitarche was 15 years, and 75% of those who were sexually active report routine condom use. Finally, the large majority (80%) reported their mood as normal, 91% felt socially accepted, and 63% had a life trajectory they were working to achieve. We found that males were more likely than females (26% vs 14%, p=0.04) to have a history of psychological problems, and less likely (8% vs 38%, p<0.01) to be sexually active, possibly due to the overall younger male subcohort (median male age = 13 years compared to 15 years in females). physical activity also varied significantly by gender with males reporting higher levels of activity (p<0.01).

**Conclusion:** In this young population seeking services, the prevalence of risk behaviors and mental health concerns was surprisingly low. Findings from this study underscore the importance of expanding adolescent health surveillance measures to youth outside of the interdisciplinary clinic, and in suburban and rural locations throughout the country.

**OP3: ORAL PRESENTATIONS: SESSION 3**

**ID: 45 / OP3: 10**  
**ORAL**

**AN EPIDEMIOLOGICAL STUDY OF EATING DISORDERS IN CHILDREN AND ADOLESCENTS – A LONGITUDINAL ANALYSIS OF 5 YEAR DATA IN A SINGAPORE COHORT.**

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**Aim:** To understand the demographics, clinical features and outcomes of paediatric and adolescent patients attending the multi-disciplinary Eating Disorder (ED) program at the National University Hospital, Singapore.

**Methods:** The case notes of all patients (n=82) followed up by the ED Program under the adolescent medical service at the National University Hospital (NUH) Singapore between January 2011 and June 2016 were reviewed. Patient characteristics and outcomes data were abstracted and summarized.

**Results:** The average age at onset of symptoms was 14.6 years. The patients were predominantly Chinese (84 %) and females (93%). Majority (87%) had a diagnosis of anorexia nervosa (AN) with 9% and 5% diagnosed with eating disorder not otherwise specified (ED NOS) and avoidant/restrictive food intake disorder (ARFID), respectively. There were no patients with bulimia nervosa (BN). A large proportion (57%) of patients required inpatient management, for an average length of stay of 64 days. 9% of our patients developed refeeding syndrome during the nutritional rehabilitation, which is 15% of the admitted patients. Major depressive disorder was the most common psychiatric co-morbidity (38%). Self-harm was noted in 13%, with active suicidal ideation in 6%. 13% of our patients were discharged after full remission. We did not have any mortality so far.

**Conclusion:** Further evaluation of the low rates of patients suffering from BN, boys and patients of Malay background is required. Comorbid psychiatric conditions were common, the proportion of patients requiring inpatient care was large and hospital stay was long. This could be addressed by the addition of an integrated ambulatory day therapy program and introducing family based therapy as the recommended treatment.

**ID: 103 / OP3: 11**  
**ORAL**

**PREGNANCY IN ADOLESCENCE: A REALITY IN A SUBURBAN REGION OF LISBON**

**Catarina Lacerda, Eliana Teixeira, Mafalda Matias, Inês Ganhão, Sérgio Neves, Susana Correia**

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**Introduction:** According to the World Health Organization about 16 million adolescent girls (15-19 years-old) give birth each year. Portugal has one of the highest rates of adolescent mothers in Europe, but also a significant number of abortions at this age. Several studies demonstrated that teenage pregnancy is associated with adverse maternal and fetal/neonatal outcomes, with a strong negative effect in their educational, social and personal achievement.

**Purpose:** Characterize pregnancy in adolescence regarding obstetric and fetal outcomes and neonatal morbidity at our hospital within the last 2 years.

**Materials and Methods:** A retrospective study of medical records of all pregnant adolescents who had attended our hospital for delivery or abortion between the 1st January 2014 and 31st December 2015. Variables analyzed: maternal age, socio-demographic factors, pregnancy monitoring and outcome, type of delivery, need of neonatal resuscitation, birth weight, maternal and newborn complications, newborn destination and family planning appointment. We used the statistical software SPSS®, v. 21.0 for parameter analysis.

**Results:** In the study period, there were 245 pregnant adolescents (7.8% of all pregnancies in our hospital). 39.2% had already had at least one previous pregnancy. The distribution by age was: 0.4% (10 – 13 years-old), 20.3% (14-16 years-old) and 79.3% (17-19 years-old). The rate of abortion was 40.4%, which accounts for 1/3 of the total abortion rate at our hospital. There were 2 medical interruption of pregnancy by fetal malformation. In the past two years, there were a total of 145 live births newborns of adolescent mothers (5% of all deliveries). Of those mothers, more than 1/3 were gipsy or foreign. Most of them had monitored and low risk pregnancies. We had 66% eutocic deliveries. 7.6% were preterm newborns and 3.8% of full-term newborns had low birth weight. There was no need for neonatal resuscitation in any case. 7.6% of newborns were hospitalized; the majority to solve social situation but only 1 newborn was given for adoption. Most teenagers didn't attend the follow-up in family planning appointment.

**Conclusion:** The pregnancy and abortion rate in adolescence at our hospital is higher than the national average. This may be due to the unfavorable socio-economic conditions and minority ethnic communities in this area. The majority of adolescents were 17-19 years old, which can be responsible for fewer adverse obstetric and neonatal outcomes. We are concerned about the significant percentage of adolescents who had a previous pregnancy and continue without follow-up in a family planning appointment.

**ID: 195 / OP3: 12**  
**ORAL**

**A MULTI-CENTRIC EDUCATIONAL PROGRAM FOR TRAINING AND PREVENTION OF FOOD ANAPHYLAXIS IN PORTUGUESE SCHOOLS AND PRE-SCHOOLS**

**Francisco Ribeiro-Mourão<sup>1</sup>, Vera Gonçalves<sup>1</sup>, Alberto Costa<sup>2</sup>, Márcia Quaresma<sup>3</sup>, Jorge Romariz<sup>4</sup>, Herculano Costa<sup>4</sup>, Estefânia Maia<sup>5</sup>, Ana Almeida<sup>5</sup>, Ana Rita Araújo<sup>1</sup>, Cláudia Pedrosa<sup>4</sup>**

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**Introduction:** Prevalence of food allergy has been raising and the nature of the condition, with the potential of developing anaphylaxis, a life-threatening event, requires a holistic approach. Anaphylactic events in schools and pre-schools are frequent and international guidelines



**OP3: ORAL PRESENTATIONS: SESSION 3**

advocate for the need of training people with closer contact to the patient. The development of educational programs for schools can be one answer for this need.

**Purpose of the Program:** This project aims to raise awareness of school and pre-schools' staff on the necessary measures to deal with a student with the diagnosis of food allergy and how to prevent, recognize and primarily treat anaphylaxis.

**Program description:** A group of Portuguese hospitals designed an intervention program with the support of the Portuguese Society of Pediatric Allergy (SPAP). On the participating hospitals, patients with diagnosis of severe food allergy who had prescription of epinephrine auto-injector were selected. Informed consent to perform the training session at the schools was obtained from their parents. Schools were contacted in order to present the project and to plan and schedule the session. Our target population were school and pre-schools teachers and auxiliary teaching staff as well as the kitchen, cafeteria and dining facilities' staff. A 30-minute session, delivered by pediatricians, was designed. Definition of food allergy and its clinical presentation, preventive measures, recognition of anaphylaxis and treatment, including intramuscular epinephrine administration were the main topics. A video was created to demonstrate the administration of epinephrine as well as hands-on training with a placebo auto-injector. Handouts were delivered as well as a pre and post-intervention survey.

**Preliminary Results:** Until now, 85 patients were selected from 5 of the hospitals that joined the project. 67% of the patients were male with an average of 6 years of age. 57% had £1 episode of anaphylaxis previous to the intervention while 43% had 2 or more. 27% had allergy to multiple aliments, 18% to fish/shellfish, 17% to milk, 13% to fruits and 12% to nuts/dried fruits. Egg, seeds and vegetables account for the remaining. 100% of the schools accepted to be part of the project and the sessions are still being held.

**Conclusion:** Anaphylaxis is a life-threatening condition that can be avoided and easily treated if rapidly recognized. Schools are interested in projects that enhance their safety and quality. Educational projects have the potential to have a great impact and, at the end of the day, save lives.

**ID: 98 / OP3: 13**  
**ORAL**

**ADVANCING CHILD HEALTH RESEARCH IN THE UK: THE INFANTS', CHILDREN'S AND YOUNG PEOPLE'S CHILD HEALTH RESEARCH CHARTER**

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**Introduction:** Children and Young People's Right to participate is laid out in the United Nations Convention on the Rights of the Child (1989), and is key component of the child health research process. In recent years, there has been considerable development in the UK to advance this agenda. The 2012 RCPCH "Turning the Tide" report highlighted the importance of child health research and the need to support clinicians to involve children and young people in research was essential.

**Purpose:** To develop the Research & Us®, Infants', Children's and Young People's Child Health Research Charter (Charter) to support children, young people, families and healthcare professionals in active engagement and participation in research.

**Materials and Methods:** A literature review of research guidance in the UK and internationally was carried out. This informed a series of consultation workshops to collect data on children's and young people's views and opinions on research involvement and processes. Themes emerging from the workshops were collated and reviewed, and following a wide external consultation, the Charter principles were drafted. The Charter was released for external consultation, over a three week period in February and March 2016, with individuals and organisations invited to comment. Two Survey Monkey questionnaires were developed to collate consultation responses from children, young people, parents/carers and healthcare professionals. These were widely disseminated through the RCPCH networks, website and committees.

**Results:** 23 relevant publications were identified in the literature review and 56 children and young people consulted in workshops. 73 children and young people, 7 parents and 41 child health professionals responded to the external consultation, enabling the team to refine the 8 Charter principles. The Charter was launched at the 2016 RCPCH Annual Conference.

**Conclusion:** The Charter has built on the work of the UNCRC, Turning the Tide and organisations across the UK to ensure the rights of children and young people are asserted and accessible to a wide audience. Speaking from the child's perspective the Charter provides over-arching principles, collating relevant and useful information for the ethical and active involvement of children and young people in research.

**ID: 172 / OP3: 14**  
**ORAL**

**KNOWLEDGE, SKILLS, AND BEHAVIORS THAT PROMOTE SAFE WATER DRINKING AMONG WOMEN OF REPRODUCTIVE AGE**

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**Background:** In April 2014, the municipal water supply in Flint, Michigan changed sources from Lake Huron to the Flint River. The higher corrosiveness of Flint River water and inadequate water treatment resulted in lead contamination in household tap water. On 24 September 2015, local physicians urged Flint residents to stop using their tap water after finding high blood lead levels in local children. Although the supply has switched to Detroit water, water is still running through contaminated pipes thus causing additional leaking of lead in tap water in Flint, MI. The Flint Water Crisis increased awareness of the dangers of lead-contaminated drinking water. Pregnant women are especially susceptible to the effects of lead exposure. Maternal elevated blood lead levels are associated with increased incidence of spontaneous abortion, lower birth weight, and infant mortality. During the Washington DC Water Crisis (2000-2004), exposure to lead-contaminated drinking water was associated with fetal death and reduced birth rates. Lead-contaminated water may be a concern around the world due to aging infrastructure. Some strategies to decrease exposure to lead in drinking waters among women include: installing a lead water filter, running tap water at least 1 minute before use, and cleaning the aerator of bathroom sinks.



### OP3: ORAL PRESENTATIONS: SESSION 3

**Purpose:** Since approximately half of all pregnancies in the United States are unintended, it is recommend that all women of reproductive age adopt healthy behaviors. Our research helps understand knowledge, behaviors, and skills related to safe water drinking among women of reproductive age.

**Methods and Materials:** A total of 83 females of reproductive age in Michigan responded to our survey on knowledge, skills, and behaviors related to lead and safe water drinking in May, 2016.

**Results:** Low levels of knowledge, skills, and healthy behaviors existed. Specifically, 71.1% of females rated their knowledge on how to decrease exposure to lead before, during and after pregnancy as poor or fair. Over 50% rated their knowledge about the health effects of exposure to lead in the pregnant woman during pregnancy as poor or fair. While one may expect that levels of knowledge, skills, and behaviors in the City of Flint were higher than those out of Flint because of the Flint Water Crisis, for most survey responses, there were no statistically significant differences in knowledge using chi-square tests.

**Conclusion:** Interventions are needed to increase knowledge regarding safe water drinking among women of reproductive age and pregnant women.

## ■ OP4: ORAL PRESENTATIONS: SESSION 4

Time: Friday, 09/Dec/2016: 11:30am - 1:30pm

### Presentations

ID: 116 / OP4: 1  
ORAL

#### DOCOSAHEXAENOIC ACID, CHOLINE AND LUTEIN INTAKES ARE ASSOCIATED WITH COGNITIVE PERFORMANCE IN SCHOOL-AGED CHILDREN

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**Introduction:** Docosahexaenoic acid (DHA) and choline are critical nutrients in the development and functioning of the brain. Lutein, a key antioxidant in neural tissue, may also impact cognitive function.

**Purpose:** To test the hypothesis that concurrent DHA, choline and lutein intakes are associated with cognitive performance in school-aged children.

**Materials and Methods:** In a cross-sectional cohort of healthy children (median age 5.8 years; n=59), DHA, choline and lutein intakes were estimated using a food frequency questionnaire. Cognitive performance including short-term memory, visual processing, long-term storage and retrieval, and general mental processing ability was assessed using the Kaufman Assessment Battery for Children. Associations between nutrient intakes were assessed using Pearson's correlation, and associations between nutrient intakes and cognitive performance scores were assessed by partial correlation controlling for other variables associated with cognitive performance in the study (child's sex, mother's age and ethnicity). To test the study hypothesis, children were divided into four subgroups based on intakes of DHA, choline, and lutein: G1 (intakes of all 3 nutrients above cohort medians; n=15), G2 (intakes of any 2 nutrients above cohort medians; n=14), G3 (intake of any 1 nutrient above cohort median; n=15), and G4 (intakes of all 3 nutrients at or below cohort medians; n=15). Cognitive performance scores were compared among the four subgroups using ANCOVA controlling for child's sex and mother's age and ethnicity.

**Results:** Median (interquartile range) intakes of DHA, choline, and lutein in these 59 healthy children were 76 (40-127), 311 (238-400), and 2.3 (1.1-4.1) mg/day, respectively. Significant correlations were found between each pair of nutrient intakes ( $r=0.42-0.67$ ,  $P\leq 0.001$ ). Intake of each of the 3 nutrients was significantly correlated with short-term memory ( $r=0.37-0.42$ ,  $P<0.05$ ); intakes of DHA and choline were each significantly correlated with general mental processing ability ( $r=0.38-0.42$ ,  $P<0.05$ ). Children with dietary intakes of all 3 nutrients above cohort medians (G1) had significantly better short-term memory ( $23.0\pm 1.1$  vs.  $18.4\pm 1.1$ ,  $P<0.01$ ) and general mental processing ability ( $82.9\pm 2.7$  vs.  $70.7\pm 2.9$ ,  $P<0.01$ ) compared to children with DHA, choline and lutein intakes below cohort medians (G4). Short-term memory scores were also significantly higher in G1 compared with G2 ( $19.9\pm 1.1$ ,  $P=0.0395$ ) and tended to differ in G1 compared with G3 ( $20.3\pm 1.1$ ,  $P=0.09$ ). No other subgroup differences were detected.

**Conclusion:** These data suggest that higher concurrent intakes of DHA, choline, and lutein are associated with higher scores of short-term memory and general mental processing ability in school-aged children. Potential mechanisms underlying this finding warrant further investigation.

ID: 42 / OP4: 2  
ORAL

#### MACRONUTRIENT INTAKE ASSOCIATED WITH WEIGHT GAIN IN ADOLESCENT GIRLS WITH ANOREXIA NERVOSA

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**Background:** It is known that adolescents and women with AN severely restrict fat intake and consume high amounts of fiber. However, clinical nutrition parameters predictive of weight gain in AN treatment are not well understood.

**Objective:** Prospectively investigate absolute macronutrient composition and changes in macronutrient composition associated with weight gain over a 6 to 12 month period.

**Design:** This was a prospective study of 90 girls 12-18 years old. 45 subjects with anorexia nervosa (AN) and 45 healthy control subjects (HC).

**OP4: ORAL PRESENTATIONS: SESSION 4**

Subjects completed four-day food logs and underwent body composition testing using DXA. Descriptive statistics included assessment of means  $\pm$  SEMs, and the Student's t test was used to determine differences between groups. For subjects without 12-month data, 6-month data were carried forward for analysis.

**Results:** At baseline, clinical characteristics and body composition measurements did not differ significantly between the group of AN girls who did not achieve weight gain (AN-0) and those who did gain at least 10% BMI (AN-1). Total caloric intake did not differ significantly between AN-0 and AN-1 at baseline or follow up. AN-0 consumed a greater percentage of total calories from protein at baseline and follow up, compared to AN-1 ( $p < 0.05$ ). From baseline to follow up, AN-1 had a significant increase in the percentage of calories obtained from PUFA ( $p = 0.007$ ) and a significant decrease in percentage of calories obtained from soluble fiber ( $p = 0.02$ ), compared with AN-0. Percent calories obtained from fat had a positive significant correlation with BMI at follow up ( $r = 0.25$ ,  $p = 0.02$ ), and absolute carbohydrate intake ( $r = -0.24$ ,  $p = 0.02$ ), percent calories obtained from carbohydrates ( $r = -0.24$ ,  $p = 0.03$ ), and soluble fiber ( $r = -0.22$ ,  $p = 0.04$ ) had a negative correlation with BMI at follow up.

**Conclusion:** Consuming a greater intake of fat may assist in weight gain during recovery from AN even without a significant increase in total energy intake.

**ID: 171 / OP4: 3**  
**ORAL**

**PAEDIATRIC OBESITY OUTPATIENT CLINIC IN A PORTUGUESE SECONDARY HOSPITAL – CHARACTERISTICS OF THE PATIENTS**

**Ana Lúcia Cardoso, Catarina Ferraz de Liz, Sara Soares, Ana Catarina Carvalho, Eunice Moreira, Ângela Machado**

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**Introduction:** Paediatric obesity is a global, public health problem. Its prevalence has been continuously increasing, especially in developed countries, and a parallel increase is happening for obesity-related diseases.

**Purpose:** The purpose of this study was to characterise the group of children and teenagers reviewed in the obesity outpatient clinic in a Portuguese secondary hospital.

**Materials and Methods:** A descriptive and observational study was conducted. Data was collected from medical records of all patients reviewed in clinic from 1st September 2015 to 31st August 2016. Information related to age, gender, anthropometry and obesity comorbidities was collected and analysed in a confidential and anonymous way.

**Results:** Medical records of 341 patients were analysed. The final sample was constituted of 46% male, with ages between 3 and 18 years old (mean age 12.8, SD 3.2). Body mass index (BMI) was over the 95th percentile in 76% of the patients and over the 99th in 16.4%. 26.4% had insulin resistance and 19.4% had started metformin. One patient had type 2 diabetes mellitus (DM), two had impaired fasting glucose and one had impaired glucose tolerance. 27.6% had dyslipidaemia and 7.3% had hepatic steatosis. Family history was available in 203 medical records, and a history of obesity and/or type 2 DM was found in 93.6% of those.

**Conclusion:** The results were comparable to those obtained in similar studies. The increase in obesity prevalence among children and teenagers is particularly alarming because obesity-related conditions rarely seen in children in the past, including type 2 DM, are increasingly diagnosed in paediatric patients.

**ID: 44 / OP4: 4**  
**ORAL**

**SMALL CHANGES MAKING BIG IMPACT**

**Bhargavi Kola**

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**Introduction:** Breast feeding is not only the best and complete nutrition for an infant, but offers benefits to both infant and mother like reduced incidence of multiple infections, asthma, atopic dermatitis diabetes mellitus type 2, and obesity in infants. Maternal benefits include reduction to pre-pregnancy weight, low post-partum depression rates, lactational amenorrhea. Hospitals play a significant role in how babies are being fed in their first hours of life and common hospital feeding practices don't reflect necessary steps to support exclusive breastfeeding. Some common hospital practices can lead to the infant receiving formula in the first weeks of life despite mothers' dedication to exclusively breastfeed.

**Purpose:** Our specific aim is to improve the overall and exclusive breast feeding rates at discharge to 75% using small and simple strategies.

**Materials and Methods:** We focus on utilizing the "Ten steps" and evaluate the impact of small but significant changes in primary provider's (lactation consultant, nursing staff, and physicians) approach on breastfeeding rates at discharge. "Ten Steps to Successful Breastfeeding", the combined efforts of WHO and UNICEF to create a global standard to help support breast feeding within a hospital setting, was successful in increasing the hospital participation. We follow the Plan-Do-Study-Act format to evaluate our results. Implementation of practices like skin-to-skin, rooming in, and avoiding pacifier and formula in the early post-partum period were consistently introduced into the post-partum care. Each month the results of the changes made were reviewed, barriers identified and steps were taken to overcome the barriers with the support of the primary providers. We compared our results with the Cohort C of NICHQ results (which collects data from 81 hospitals across 3 major geographical cohorts) at monthly intervals using a chi-square analysis.

**Results/Conclusion:** We found clinical and statistically significant improvement in exclusively breast feeding, skin to skin and parental breast feeding instructions ( $p < 0.001$ ). Other indicators like overall breast feeding, and discharge support and assistance with breast feeding rates although showed clinically significant increase compared to NICHQ, even if no statistical significance was detected due to small sample size compared to Cohort C. Based on this data, we believe that we have achieved significant strides in improving the breast feeding rates. Our success can be attributed to the hospital support staff in identifying the barriers and the most important being lack of consistency which we were able to overcome by thorough and continuous nursing staff education, scripted responses, pocket cards to answer promptly and effectively to aid in breast feeding.

OP4: ORAL PRESENTATIONS: SESSION 4

ID: 132 / OP4: 5  
ORAL

**THE EFFECTS OF MATERNAL AND EARLY CHILDHOOD DIETARY PATTERNS ON BMI, PERCENTAGE BODY FAT AND SLEEP AT 7 YEARS.**

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**Introduction:** New Zealand has the third highest prevalence of childhood obesity among OECD countries. Risk of later offspring obesity is associated with maternal diet and physical activity during gestation and early childhood. Reduced sleep duration may also be a risk factor. There are a number of hypotheses regarding the mechanisms for sleep–obesity associations including diet quality affecting sleep latency and duration.

**Purpose:** To determine the effects of maternal diet during pregnancy and early childhood diet (3.5 and 7 years of age) on body composition and sleep latency and duration at 7 years.

**Materials and Methods:** The longitudinal Auckland Birthweight Collaborative (ABC) Study included children born small for gestational age (SGA) and non-SGA. Data was collected on mothers at birth (n= 871), and their children at 3.5 (n=550) and, 7 (n=591) years. Dietary information was collected using food frequency questionnaires, and dietary pattern scores created using principal components analysis, resulting in 3 previously defined dietary patterns (Junk, traditional and healthy). At 7 years sleep duration and sleep latency were evaluated using both parent report and data collected from a single day using an G3TX Actigraph (Actigraph Ltd, Pensacola, Florida, USA). At 3.5 and 7 years Body Mass Index (BMI) was calculated (weight (kg)/height (m)) and percentage body fat (PBF) was estimated via the BIA4 (Impedimed Ltd, QLD, Australia). The relationship between maternal pregnancy diet and childhood diet at 3.5 years on body composition, sleep duration and latency at 7 years was assessed using linear regression.

**Results:** A higher maternal healthy dietary pattern score was inversely associated with offspring Z- BMI at 3.5 years (-0.20; 95% CI -0.35, - 0.05), 7 years (-0.26; 95% CI -0.47, -0.04) and PBF at 7 years (-1.81%; 95% CI -3.42%, -0.19%). A higher traditional dietary score at 3.5 years was associated with a decrease in PBF at 7 years (OR – 0.86%; 95% CI -1.65%, -0.08%). There was no association of childhood dietary patterns on sleep duration and latency but a higher maternal junk dietary pattern score was inversely associated with sleep duration at 7 years (OR – 14min; 95% CI -22min, -7min).

**Conclusion:** A healthy dietary pattern in pregnancy and early childhood was associated with lower childhood BMI and PBF at 7 years of age. The study findings emphasise the importance of the influence of maternal diet in pregnancy and early childhood diet on children's body composition. The effect of diet in pregnancy on sleep duration in mid-childhood requires further investigation

ID: 155 / OP4: 6  
ORAL

**THE INFLUENCE OF DIET ADJUSTMENTS ON NIGHTTIME URINE PRODUCTION AND URINARY OSMOLALITY IN ENURETIC PATIENTS**

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**Introduction:** In all recent guidelines urotherapy is the first step in treatment of enuresis. Diet adjustments are presented as an element of urotherapy, even though evidence on the possible effect of dietary adjustments in enuretic patients is limited in literature.

**Purpose:** In this investigation we want to examine the possible effect of diet adjustments with salt- and protein restriction on nighttime urine production and urinary osmolality in enuretic patients.

**Materials and Methods:** A prospective study on a tertiary population of new enuretic patients aged 6 – 16 years. Using voiding diary's before and after diet adjustments we have sought for an effect on nighttime urine production. Urinary samples before and after diet adjustments were performed to find a difference in urinary osmolality.

**Results:** 16 patients were included, 6 girls and 10 boys with an average age of 8 years old. No patients dropped out. 50% of the patients suffered non-monosymptomatic enuresis, 50% monosymptomatic enuresis. The majority of patients showed nocturnal polyuria following ICCS definition of 130% of estimated bladder capacity. After the diet adjustments a decrease in mean nighttime urine production was seen in the majority of patients. (figure 1) A significant decrease in wet nights was observed after diet adjustment. (figure 2) A median decrease of 1 wet night, from 7/7 wet nights to 6/7 wet nights, was observed. A median decrease of 1,5 wet nights on 7 nights with nocturnal polyuria according to the ICCS definition was observed. The result for urinary osmolality were very variable, no clear correlation could be made.

**Conclusion:** Our results show, in a small population of enuretic patients, that there is a positive influence of salt- and protein restriction on nighttime urine production, number of wet nights and number of nights with nocturnal polyuria. The decrease in nocturnal diuresis was insufficient to reach complete dryness. The majority of patients suffered nocturnal polyuria, which can affect our study results. Further investigation is required to select suitable candidates for diet adjustments.

ID: 200 / OP4: 7  
ORAL

**EOSINOPHILIC ESOPHAGITIS: CLINICAL PROFILE AND TRENDS IN CHILDHOOD**

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**Introduction:** Eosinophilic esophagitis (EoE) is a chronic, immune/antigen-mediated disease, with unclear etiopathogenesis. Considering the

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increasing incidence in all age groups, detailed clinical studies in childhood will further elucidate temporal trends, clinical expression and distinctive phenotypes.

**Purpose:** To describe EoE clinical presentation over a nine-year period, in a quite representative sample of paediatric patients.

**Materials and Methods:** Retrospective chart review concerning patients with EoE diagnosis (based on standard criteria) in a Tertiary Center, over a nine-year period (2007-2015).

**Results:** Sixty-nine patients were included (84% males), mean age 10,4 years (SD 4,65). The number of new cases has risen from 2007 (2) to 2015 (19) (mean case number per year 7,67). The most common presenting symptom in toddlers/pre-schoolers was vomiting (46,2%), versus impaction in older children (62,5%); 85,5% of the patients had multiple manifestations. Abnormal endoscopic findings were observed in all except one patient, including longitudinal striation (62,3%), whitish exudates (46,4%) and esophageal rings (23,2%). Most frequent histological finds were: dense eosinophil infiltrate (median eosinophil count/HPF: 28,5; range 15-100), basal cell hyperplasia 49,3%, elongation of vascular papillae 23,2%, eosinophilic abscesses 18,8%. No significant association was observed between symptoms and endoscopic findings, except for choking/esophageal rings ( $p=0,015$ ). Fifteen of 26 patients had concomitant evidence of acid reflux disease (in pH metry) and 28 of 48 had evidence of PPI responsive eosinophilia. Concomitant allergic disease (at least one manifestation) was identified in 45 (65,2%) patients (rhinitis 66,6%, asthma 27,6%, food allergy 15,9%) and familial allergic background in 59,1% of the patients (at least one first degree relative with asthma and/or allergic rhinitis). Total serum immunoglobulin E (IgE) levels were increased in 65,2% of the patients (median 294, range 114-5077). Sixty were submitted to serum-specific IgE testing, 41 for aero-allergens (31 were positive) and 54 for food-allergens (36 were positive).

**Conclusion:** Increased incidence of classical EoE phenotype was documented. We highlight: recognized differences in disease presentation, high prevalence of allergic background and a weak association between symptoms/endoscopic findings. Extensive allergic investigations and new clinical biomarkers are needed to a more selective therapeutic intervention.

**ID: 193 / OP4: 8**  
**ORAL**

**UPPER GASTROINTESTINAL BLEEDING IN CHILDHOOD: AINE'S AND VIRAL INFECTIONS TO BLAME? A 10-YEARS RETROSPECTIVE STUDY**

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**Introduction:** Upper gastrointestinal bleeding (UGIB) in paediatric age is not a common event and severe UGIB is even rarer. Only a few series reported worldwide differences in its prevalence and aetiology.

**Purpose:** To characterize clinical and epidemiologic features of UGIB in children/adolescents who underwent Esophagogastroduodenoscopy (EGD), in a Portuguese Tertiary Hospital.

**Materials and Methods:** A retrospective analysis of clinical charts concerning EGD was performed over a ten years period (January 2006-December 2015).

**Results:** Of 3099 EGD, 100 were performed for UGIB and 11 patients were excluded due to lack of complete clinical data. Study sample included 89 patients, 57% were male and median age was 7 years (range 0-17 years). In 80,9% it was the first UGIB episode and the most common presentation was hematemesis (82%), followed by melena (12,4%) and coffee-ground emesis (5,6%). There were no statistical differences between clinical presentation and admission haemoglobin (Hb) levels. Most patients (64%) underwent EGD in less than 72 hours (<48h in 50/89, these patients had the lowest Hb values). An aetiology was more frequently identified by early EGD, rather than later EGD ( $p=0,014$ ). 14/89 patients required transfusional support; 29% had underlying gastrointestinal/liver or neurological disease. Concerning endoscopic findings and UGIB source was: probable in 54/89; questionable 20/89 and normal 15/89. The most common diagnosis was erosive gastritis 28/89, erosive esophagitis 8/89 and esophageal varices 8/89. Lower Hb levels were associated with: a) gastric endoscopic findings ( $p=0,015$ ); b) type of drugs taken before UGIB ( $p=0,007$ ); c) NSAID's ( $p=0,001$ ); d) viral infections ( $p=0,005$ ). Erosive gastritis was significantly associated with viral infections ( $p=0,047$ ).

**Conclusion:** Early EGD is crucial for appropriate diagnosis, helping to determine the bleeding source. Erosive gastritis was the most frequent endoscopic abnormality and was significantly associated with viral infections. Medicines, mostly NSAID's, and viral infections were probable triggers associated with UGIB and lower Hb levels.

**ID: 35 / OP4: 9**  
**ORAL**

**EVALUATION OF A COMPUTERIZED SELF-MANAGEMENT TOOL FOR CHILDREN WITH TYPE-1 DIABETES**

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**Introduction:** Pediatric diabetes is a rising global public health concern, with an increasing prevalence in developed and developing countries alike. The World Health Organization appeals to the medical community to develop effective interventions, which will counteract the long-term negative health outcomes and high costs associated with diabetes. Self-monitoring blood glucose (SMBG) > 3 times per day is significantly correlated with lower hemoglobin HbA1c. Poor adherence to SMBG undermines its optimal benefits, yet a significant decline in SMBG is reported after the first year of diagnosis.

**Purpose:** KiDi SMS is an online tool developed to motivate children to self-monitor their blood glucose. Patients of McMaster Children's Hospital Pediatric Diabetes Clinic used KiDi SMS for three months. Each day that the child logs a minimum of three blood glucose readings, a game is unlocked. Once a game is unlocked it is only available until midnight. Thus, in order to unlock another game, the user is required to log three more readings the following day.



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**Materials & Methods:** Clinic staff identified potential participants based on their average rate of SMBG. Those who were logging their blood glucose < 3 times per day were approached. Children between the ages of 8 and 12 years of age, diagnosed with type 1 diabetes > 1 year were included. Participants were also required to have Internet access at home. Participants who were already logging blood glucose > 3 times per day were excluded. Access to this program was provided free of charge.

**Results:** 85% of participants logged their blood glucose readings daily using KiDi SMS. This is a significant improvement in patients' self-management regime, as all participants logged their blood glucose readings < 3 times per day prior to using KiDi SMS. 82% of participants, who used KiDi SMS daily, demonstrated a mean daily frequency of at least three logs. Participants were asked if they felt more encouraged to self-monitor their blood glucose daily after participating in this intervention; 91% answered in the affirmative.

**Conclusion:** While this study was designed as a simple feasibility study; future development of this program could whether KiDi SMS, as a cell phone application, would motivate more children to self-monitor. A reward system for having blood glucose readings within the user's target range might be included. The study population could be broadened to include children who are currently logging  $\geq 3$  times per day. These additional trials may further improve KiDi SMS.

**ID: 135 / OP4: 10**  
**ORAL**

**PORTUGUESE NEONATAL CONGENITAL HYPOTHYROIDISM SCREENING PROGRAM: THE SECOND DECADE**

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**Introduction:** Congenital hypothyroidism (CH) is the most frequent congenital endocrine disorder (estimated incidence 1: 3000/4000 live births) and its early detection and prompt treatment are essential for the avoidance of serious consequences, especially cognitive disorders. Neonatal screening in Portugal has been implemented in 1981 and since 1983 our Pediatric Department is the treatment center of CH at the southern part of the country.

**Purpose:** The aim of this study is to characterize patients diagnosed with CH in the second decade of neonatal screening (1993-2002) and to evaluate clinical manifestations and prognosis according to early initiation of therapy, hormonal control and type of defect identified by scintigraphy.

**Materials and Methods:** Retrospective study of data from clinical records of patients diagnosed with CH between 1993 and 2002 followed in pediatric endocrinology pediatric ambulatory. The collected data included: risk factors for thyroid disease, early and late clinical manifestations, type of defect identified by scintigraphy, initial therapy and response. It was defined good therapeutic control if TSH <6.3 mIU / L and total T4 > 10 mcg / dl.

**Results:** 124 children are studied, two-thirds were females, 27.4 % had family history of thyroid disease, 98 have permanent CH and the most frequent type of defect identified in scintigraphy was ectopy (n = 36). Early symptoms of hypothyroidism were present in 82.3% of cases (macroglossia as the most frequent), which may be related to the fact that the beginning of treatment might still limited by the capacity of diagnostic methods at that time. More than a half of the children had late manifestations and school failure was the most frequent (33%). The beginning of therapy before 30 days of life was associated with better hormonal control up to 3 years (p = 0.022) and less late manifestations (p = 0.024). A higher TSH value in the first month of therapy was associated with psychomotor developmental disorders (p = 0.047). Agenesis of the thyroid gland was associated with a higher TSH value (p <0.01) and a more difficult therapeutic control up to 3 years (p = 0.03).

**Conclusion:** Early beginning of therapy was associated with a better hormonal control and less late manifestations. School failure is the most important late manifestation, which reinforces the need of a multidisciplinary follow-up with regular psychomotor development evaluations.

**ID: 147 / OP4: 11**  
**ORAL**

**RESPONSE TO RHGH TREATMENT IN PAEDIATRIC PATIENTS: FOLLOW-UP TO THE FINAL HEIGHT. DATA FROM THE GH REGISTRY IN PIEDMONT**

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**Introduction:** Many studies describe the characteristics of patients affected by Growth Hormone (GH) deficiency and of rhGH therapy effects both in paediatric and in adult population, but few of them offer an analysis of the follow up of patients to their final height. This lack is probably due to the shortage of regionally and nationally structured databases. Within the Italian framework of the regional project of monitoring of rhGH treatment, it is worth highlighting the existence of the Regional Registry in the Piedmont area, started in 1999. We present a preliminary analysis of that database now robust enough to offer reliable information.

**Purpose:** The aim of our work is to describe the growth of paediatric patients affected by growth failure who were treated with rhGH.

**Materials and Methods:** We enrolled 252 patients from the GH Registry who were treated for GH deficit, with a diagnosis of Idiopathic GHD (IGHD) and Organic Congenital GHD (OGHD), between January 2000 and October 2015, had completed follow up and reached their final height. For all of them, initial and final height, initial pubertal stage and parental Target Height were available. The results are based on classical statistical descriptive methods and each indicator is shown with the relative 95% Confidence Interval. The therapeutic efficacy is evaluated in terms of:

- difference between the initial and the final height
- difference between the final height and the parental Target Height

All the evaluation are based on the SDS score. The analysis is performed with and without differentiation by diagnosis.

**Results:** The parental Target was reached by 64% of patients IGHD and OGHD. Mean height gain is better for males (0.90 SDS for males vs 0.63 SDS for females). OGHD patients responded better to rhGH in comparison with IGHD subjects (improvement in 75% of OGHD vs. 68% of IGHD).

**OP4: ORAL PRESENTATIONS: SESSION 4**

in term of height gain). In our cohort, 58% of female and 73% of male started rhGH in the pre-pubertal age presenting a better final height gain with respect to patients who started later.

**Conclusion:** These preliminary analyses revealed some interesting issues to ponder, on the best period to start the treatment and on expected therapy results. These suggestions will be deepened in future analysis. Moreover, a larger cohort, comprehensive of Organic Acquired GHD, should be available in a short time from other Piedmont reference centers. In particular, a study on the effectiveness of treatments using also pre-therapy data is in progress.

**ID: 57 / OP4: 12**  
**ORAL**

**ESTIMATION THE EFFECT OF PROPHYLACTIC DOSE OF VITAMIN D3 FOR THE CORRECTION OF ITS LOW STATUS OF ADOLESCENT GIRLS**

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**Objectives & Study:** Our study was performed to assess the effect of prophylactic doses of vitamin D (400 IU / day) for the correction of low vitamin D status in adolescent girls.

**Methods:** The study included 100 adolescents (mean age  $14,3 \pm 2$  years), without chronic somatic diseases. A group of 88 girls took the drug at a dose of vitamin D3 400 IU / day for 3 months, a group of 12 girls did not receive the drug. Estimation of blood serum levels of 25-OHD was conducted by immunochemiluminescent analysis every month within 3 months of observation. Vitamin D pronounced deficiency was defined as 25-OHD below 10 ng/mL; deficiency was defined as 25-OHD of 10 – 20 ng/mL; insufficiency as 25-OHD of 20 – 30 ng/mL; and sufficiency as 25-OHD of 30 – 50 ng/mL.

**Results:** Analysis of the results showed that the average content of the starting 25-OH D in adolescents receiving drug was  $12,4 \pm 1,6$  ng / ml, without correction -  $12,6 \pm 1,5$  ng / ml. Analysis of the results of the study showed that after the first, second and third months of taking the drug, the average content of 25-OH D increased to  $16,9 \pm 2,5$  ( $p > 0.05$ );  $17,7 \pm 2,4$  ( $p < 0.05$ ), and  $19,9 \pm 2,4$  ( $p < 0.001$ ) ng / ml, respectively. In the group of adolescents who did not receive the vitamin, the average content 25-OH D did not change and amounted after determining at 1, 2 and 3 months:  $11,6 \pm 1,2$ ;  $13,1 \pm 2,3$  and  $12,4 \pm 1,5$  ng / ml ( $p < 0.05$ ), respectively.

**Conclusion:** The study showed that the 3-month intake of vitamin D3 and dose (400 IU / day) are not sufficient to normalize vitamin D status in adolescent girls. When selecting the dose for adolescents it is advisable to consider the number and severity of such factors as hypodynamia and increased physical activity, growth and physical development stage of puberty, insufficiency seasonal insolation and nutritional vitamin deficiency.

**ID: 86 / OP4: 13**  
**ORAL**

**NEUROLOGICAL COMPLICATIONS IN PATIENTS WITH TYPICAL HAEMOLYTIC UREMIC SYNDROME – CLINICAL MANIFESTATIONS, EVOLUTION AND OUTCOMES IN 2 CASE STUDY.**

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**Introduction:** Hemolytic uremic syndrome (HUS) is described as a multisystemic disease, that affects mainly the kidney and it is a major cause of morbidity and mortality for children under the age of 5 years. Defined by the triad: acute kidney failure, hemolytic anemia and thrombocytopenia, HUS often involves the central nervous system (CNS) - one of the life-threatening complications. Two cases with neurological manifestations, but each with different outcome will be presented.

**Case Reports:**

Case 1: 1 year and 4 months boy diagnosed with HUS, verotoxin 1 and 2-positive and Escherichia coli-serotype O26 begins, from the second day of admission to manifest extreme agitation alternating with periods of sleepiness. His state worsens with opisthotonus, myoclonic seizures, alteration in consciousness. Considering neurologic complications and thinking of lesions in the basal ganglia, a CT is done that underline moderate cerebral edema. The treatment starts with corticotherapy, IV methylprednisolone - 3 doses, with positive evolution and without neurological sequelae. For other possible neurological modifications the MRI exam was also done which revealed only minimal cortical atrophy.

Case 2: 2 year and 4 months girl, is hospitalized with HUS diagnosis, with negative verotoxin, presents after 3 days of admission in our department, sleepiness. She becomes hyporesponsive and presents partial seizure on the left side. The first CT – points a normal image, but the second one emphasize – ischemic lesions on the right occipital region. A corticotherapy schedule was started followed by mild improvement. In this case the MRI highlighted - bilateral occipital lesions. A left external hemianopsia was evaluated as neurological sequela. In both cases, the renal kidney failure was severe requiring peritoneal dialysis for about 20 days.

**Conclusion:** In this two case study, the presented patients diagnosed with HUS and neurological complications the evolution of the disease was moderate favorable under specific treatment. Usually in these cases, patients have also severe acute renal damage and require a dialysis procedure.



**OP4: ORAL PRESENTATIONS: SESSION 4**

**ID: 221 / OP4: 14**  
**ORAL**

**THE EFFECT OF SOCIAL MEDIA USE ON TEENS SLEEP**

**Shaza Ali Mohammed Elhassan<sup>1</sup>, Odette L. Chagoury<sup>2</sup>, Ruba Labwani<sup>3</sup>, Marwa Salah Mansour<sup>4</sup>**

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**Introduction:** Use of social media websites is a common behavior amongst contemporary adolescents. Social networking allows an avenue for non-stop entertainment and communication. Previous research has shown that social media use in adolescents is associated with a range of sleep problems, particularly when engaging in this activity close to bedtime.

**Aim:** To assess the current trends in technology and electronic device usage two hours before bedtime on school nights in adolescents. We obtained data on use of smart phones, ipads/tablets, laptop computers, portable video gaming devices and the impact each of these devices had upon sleep outcomes.

**Methods and Materials:** In our cross-sectional study we administered a 40-item questionnaire, adapted from the Technology Use Questionnaire, originally developed for a birth cohort study. Both hospital research committee and ministry of education approved the study. The survey was completed online by adolescents (aged 12-18 years old) at schools across Doha, Qatar. We approached 1000 participants at both private and public schools. We retrieved 668(response rate was 67%)The survey was administered and completed in English (n=542) or Arabic (n=126), according to participant's language preference. Students were able to complete the survey in about 15-20 minutes.

**Results:** Of the 668 adolescents (49% boys) enrolled to the study, electronic device ownership was highly prevalent where 89% owned a mobile phone, 42% a portable video gaming device, 78% had a laptop, 62% an iPad/tablet and only 2% reported having none of these electronic devices. In our large sample of adolescents, 85% reported using at least one electronic device in the two hours preceding bedtime on weekdays with smart phones accounting for 43%. The majority of participants reported using smart phones for social networking (67%), viewing video content (58%), or texting (56%). Smart phones were also used two hours before bedtime on school nights, but to a lesser extent, for communicating via WhatsApp (47%), listening to music (45%), surfing the internet (44%), gaming (32%), reading (25%), Skyping (19%). Interestingly, portable telephones were less often used for their original purpose of making calls (16%) in our sample. When asked specifically about calls/text messages that awaken them from sleep, 38% reported that this occurred 'sometimes', 20% reported 'usually/always' and 40% reported that this 'never' happened and 2% did not respond. Twenty-one percent of participant's reported that they 'always' lose track of time and go to bed later than they should, 41% stated that this 'sometimes' happened, 21% reported 'rarely', and 17% reported 'never'. On weekend nights, 52% reported going to bed after midnight, of which 10% was due to social networking. Eighty percent of the sample reported waking up one or more times per night versus 20% who reported 'never' waking during the night.

**Conclusion:** Ownership of electronic media devices was widespread in our sample of Qatari adolescents with smart phones being one of the most prevalent devices owned in this group. There appears to have been a shift in the use of mobile phones, which were originally developed for purposes of making/receiving calls. The main purpose of smart phone usage in our contemporary sample of adolescents now appears to be for social networking use and engagement in this activity appears to common before bedtime, which may have adverse consequences on sleep and subsequent daytime sleepiness levels

**■ OP5: ORAL PRESENTATIONS: SESSION 5**

Time: **Friday, 09/Dec/2016: 5:00pm - 6:30pm**

**Presentations**

**ID: 48 / OP5: 1**  
**ORAL**

**MATERNAL SERUM TOTAL HOMOCYSTEINE AND FETAL NEURAL TUBE DEFECTS-EFFECT MODIFICATION BY MATERNAL SERUM FREE T4**

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**Introduction:** Many factors other than folate deficiency may cause neural tube deficiency (NTDs). Thyroid hormone (free T4, FT4) influences the development of the brain in the early embryonic stage.

**Purpose:** We attempted to explore the association between some relevant factors and NTDs in this study.

**Materials and Methods:** We conducted a case-control study to estimate and compare 1) the serum FT4 level in early pregnancy, and 2) the risk for each type of NTDs, using regression analyses. Data were obtained during the period between 2003 and 2004 from pregnant women who were living in a county of Shanxi province and were visiting the same hospital for antenatal examinations.

**Results:** There was an FT4 surge in the control group, whereas no such surge was seen in pregnant women with NTDs before 20 weeks of gestation. There were no correlations between the urinary concentrations of iodine and serum concentrations of FT4 after adjustment for the gestational weeks and/or age. In cases with serum FT4 >15.2 pmol/L, tHCY was not a risk factor for NTDs. However, in cases with serum FT4 less than 15.2 pmol/L, after adjusted by age and gestational weeks i) the odds ratio (OR) of a high level of tHCY (> 6 µmol/L) was 10.70 for NTDs (95% confidence interval (CI): 2.09-54.83, P = 0.004); ii) the OR of a high level of urinary concentrations of iodine (> 250µg/L) was 1.65 (95% CI: 0.61-4.49, P = 0.328); iii) the OR of positive antibody was 1.78 (95% CI: 0.66-4.77, P = 0.255).

**OP5: ORAL PRESENTATIONS: SESSION 5**

**Conclusion:** Serum FT4 level modifies the effect of tHcy on the risk of NTDs. In cases where the serum FT4 level was low, NTDs was associated with a lower level of tHcy, but not iodine intake and thyroid antibodies.

**ID: 109 / OP5: 2**  
**ORAL**

**EARLY-ONSET NEONATAL LISTERIOSIS – CASE REPORT**

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**Introduction:** *Listeria Monocytogenes* is a widely known pathogen and may be life-threatening to some risk groups. However, there are few clinical reports of neonatal infection.

**Case Report:** We report a case of a 32-week preterm boy, born by emergency C-section because of fetal distress with presence of meconium. After delivery he presented transitory apnea followed by respiratory distress syndrome and was admitted to intermediate neonatal care. The first laboratory investigation demonstrated elevated C-reactive protein and there was evidence of neonatal pneumonia on the chest x-ray. Erythematous maculopapular rash was observed at the 4th hour of life. Empirical antibiotic therapy with ampicillin and gentamicin was started within the first hour of life. At the 30th hour of life, the initial blood culture was positive and a *Listeria monocytogenes* infection was confirmed the next day. He responded well to the therapy with both clinical and laboratory improvements and was discharged at 23th day of life.

**Conclusion:** Listeriosis is an uncommon and severe infection in neonates. It should be suspected in cases of neonatal sepsis and treated promptly in order to reduce the morbidity and fatal outcomes.

**ID: 4 / OP5: 3**  
**ORAL**

**POST NEONATAL TETANUS: 20 YEARS EXPERIENCE AT UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL**

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**Introduction:** Tetanus though a vaccine preventable disease is still a major public health problem throughout the world and has remained a major cause of morbidity and mortality especially in developing countries. Annually tetanus causes 309,000 deaths and an estimated one million cases occur especially in the developing countries. Post neonatal tetanus is a growing problem in developing countries including Nigeria.

**Purpose:** To review the post-neonatal tetanus cases seen at University of Port Harcourt Teaching Hospital (UPTH) highlighting the morbidity and mortality trend.

**Materials and Methods:** Retrospective descriptive study, at UPTH between 1995-2015 A 20 year review of records of all post neonatal tetanus cases managed at department of Paediatrics, UPTH.

**Results:** One hundred and fourteen cases of post neonatal tetanus were studied. Male: female ratio was 1.7:1. Age range 0.16 years to 16 years, mean age of 9.74±4.4 years. Most cases were above 5 years of age and either unimmunized or incompletely immunized. The portal of entry was specified in 37(32.7%) of cases and of these, broomstick injury was the commonest portal of entry accounting for 17(45.9%). The duration of hospital stay ranged between 1-35 days and case fatality rate was 27.4%.

**Conclusion:** Post neonatal tetanus has remained a major cause of morbidity and mortality with broomstick injuries being a common cause. Tetanus toxoid immunization should be strengthened.

**ID: 52 / OP5: 4**  
**ORAL**

**EXPOSURE TO PERCHLORATE IN LACTATING WOMEN AND ITS ASSOCIATIONS WITH NEWBORN HEALTH: ARE NEWBORNS PROTECTED AGAINST NIS INHIBITORS IN THE FIRST DAYS OF THEIR LIVES?**

**Ozlem Atan Sahin<sup>1</sup>, Yasemin Ucal<sup>2</sup>, Muhittin Serdar<sup>2</sup>, Benjamin Blount<sup>3</sup>, Pinar Kumru<sup>4</sup>, Murat Muhcu<sup>5</sup>, Mustafa Eroglu<sup>6</sup>, Cansu Akin<sup>2</sup>, Zeynep Yildirim Keles<sup>2</sup>, Cem Turam<sup>2</sup>, Liza Valentin<sup>3</sup>, Maria Morel-Espinosa<sup>3</sup>, Mustafa Serteser<sup>2</sup>, Ibrahim Unsal<sup>2</sup>, Aysel Ozpinar<sup>2</sup>**

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**Introduction:** Perchlorate, nitrate and thiocyanate block iodide intake into thyroid gland and consequently decrease thyroid hormone production. Turkey is a mild endemic country for iodide deficiency and is exposed to thyrotoxicosis by a variety of sources. However, the effect of these thyrotoxicosis in newborn is still not known. Therefore, perchlorate in colostrum (the first milk produced during pregnancy) was determined and its potential effects in newborns' thyroid health was investigated.

**Purpose:** In this study we aim to evaluate whether colostrum perchlorate is associated with newborn thyroid health.

**Methods:** Subjects included in this study were 86 lactating women and their newborns living in Istanbul, Turkey. All the participants in the study were evaluated for their thyroid status and maternal urinary perchlorate and colostrum perchlorate levels. The continuous values were represented as

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median (interquartile –IQR-). The study groups were examined by Pearson's correlation using Analyse-it Software v4.20.1 ( $p < 0,05$ ) was considered significant)

**Results:** Perchlorate was detected in the colostrum of 86 lactating women in which 50% had higher colostrum perchlorate (median, IQR) (0,202, 0,03-0,38) than the reference dose of Massachusetts Department of Environmental Protection (MA DEP), 0,07  $\mu\text{g/kg/day}$ . The median and IQR for maternal TSH, colostrum perchlorate, neonatal TSH and urinary creatinine adjusted perchlorate levels in lactating women were; 2,6 (1,56-3,45) IU/mL, 2,34(1,37-5,59) $\mu\text{g/L}$ , 3,55(2,28-5,8) $\mu\text{IU/mL}$  and 2.92 (1.4-5.33), respectively. There was a significant positive correlation between colostrum perchlorate and maternal TSH ( $r=0,348$ ,  $p=0,001$ ). Another positive correlation was detected between maternal TSH and colostrum perchlorate, which is higher than reference dose 0,07  $\mu\text{g/kg/day}$  ( $r=0,221$ ,  $p=0,004$ ), a potential sign of perchlorate exposure in neonates. However, calculated perchlorate exposure in neonates was not correlated with the newborn TSH status ( $r= -0,094$ ,  $p=0,391$ ). Interestingly, no correlation between colostrum perchlorate and maternal creatinine adjusted perchlorate was detected ( $r=-0,078$ ,  $p=0,479$ ).

**Conclusion:** The work presented here demonstrates that newborns may somehow be protected against thyrotoxicosis by colostrum in the early newborn period. Although the 50% of neonates had perchlorate exposure according to the MADEP reference dose, neonatal TSH, a sign of neonatal thyroid health seems not altered. Therefore, this study can be extended to an increased sample set for in-depth analysis of perchlorate exposure in neonates.

**ID: 73 / OP5: 5**  
**ORAL**

**COUNSELLING OF PARENTS OF PREMATURE BABIES. A SKILL TO BE ACQUIRED**

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**Introduction:** Counselling of parents expecting a preterm baby is a challenging experience that requires special expertise and knowledge. Despite its importance as part of the standard care of preterm infants, there is no standard approved approach to conduct it.

**Aims:** To highlight the importance of effective communication with parents and between healthcare professionals. To suggest a structured approach for counselling

**Methods:** This presentation will have two main parts. It will commence by providing the audience with an overview of some of the standard approaches for counselling. The SPIKES protocol will be particularly discussed in greater details. Moreover, this part will review the available guidelines for counselling of parents of preterm infants. Outcomes of premature infants contribute to a major part of the counselling consultation with parents. Therefore, the presentation will examine the latest available evidence in the literature about various aspects of outcomes of preterm babies. The final part of the presentation will highlight several important issues that are expected to be raised in a counselling session. These issues will be explored in a question and answer format to provide a suggested practical platform for the counselling. The presentation will include video clips from my teaching video on counselling. The video was recorded with real parents of a premature baby. Endorsement of the video by the British Association of Perinatal Medicine is being sought.

**Conclusion:** Counselling should be conducted following a structured strategy. These skills should be part of formally taught to all doctors involved in the care of preterm babies. To my knowledge, the counselling video of this presentation is the first of its kind to address this issue utilising a structured approach with the participation of real parents.

**ID: 190 / OP5: 6**  
**ORAL**

**NEW ASPECTS IN PATHOGENESIS OF PERINATAL HYPOXIA AND ITS CONSEQUENCES IN NEWBORNS**

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**Introduction:** Perinatal hypoxia (PH) causing serious changes from the central nervous and cardiovascular systems and take a leading position in neonate morbidity and mortality. Some aspects of pathogenesis PH and its consequences have not been thoroughly investigated.

**Purpose:** To study the contribution of structural and functional hemoglobin (Hb) disorders into the pathogenesis of PH in newborns.

**Methods:** The research was approved by the local ethical committee. 90 full-term newborns with PH and 30 healthy ones were examined by clinical methods, 12-lead electrocardiogram (ECG), echocardiography, neurosonography (NSG) with Doppler scanning of brain vessels and by spectroscopy technique of combined dispersion of Hb. The patients were assigned to 3 groups according to hypoxia severity (Apgar scoring, Hb saturation, blood pH). Testing of venous blood in newborns was performed on RAMAN-spectrograph.

**Results:** 28 children were born in a severe, 35 - in moderate and 27 - mild hypoxia. Encephalopathy symptoms prevailed in 67 (74,4%), cardiopathy - in 23 newborns. Ischemic signs on NSG were identified in all children. Ischemic disorders on ECG, heart cavity dilatation, systolic and diastolic dysfunction, neonate pulmonary hypertension were diagnosed in 18-42 children. The indices, indicating Hb affinity to oxygen and Hb ability to bind them were less in hypoxia-affected newborns than in healthy ones. They got reduced at increased severity of PH. The indices showing Hb ability to reject ligands, and Hb conformational alterations were higher in hypoxia-affected than in healthy neonates and increased in proportion to PH severity. It means, that in severe PH, oxygen binding to Hb becomes insufficient, which may aggravate hypoxia. In "in vitro" studies with oxygen-aerated blood, Hb affinity to oxygen and Hb ability to bind it were less than in tests without oxygenation. These indices decreased proportionally to oxygen concentration increase. Besides, along with oxygen concentration increase, conformational alterations of Hb escalated. This may lead to decrease in Hb ability to bind oxygen and to the rise of disorders in Hb transportation function. We have established a correlation between the indices of structural and functional Hb properties and some PH features (Apgar scoring, oxygen saturation, blood pH) and presence of ischemic changes on ECG, NSG and echocardiography.

**Conclusion:** Our data confirm the contribution of structural and functional Hb disorders of into PH pathogenesis and danger of high oxygen concentration in severely hypoxia-affected infants, as Hb with an altered molecular structure is unable to bind and release oxygen.

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ID: 202 / OP5: 7  
ORAL

**THE PATIENTS WHO LEAVE THE PEDIATRIC EMERGENCY DEPARTMENT – WHAT CAN WE LEARN FROM THEM?**

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**Introduction:** The rate of patients who leave the Pediatric Emergency Department (LPED) has become a clinical and medico-legal challenge. Indeed, it has been endorsed as a measure of Emergency Departments' performance and quality of care and might be associated with poor clinical outcomes.

**Purpose:** Thus, we aimed to study the influencing factors and the underlying outcomes of the LPED in a Tertiary Hospital. This is the first step to address the problem and ultimately improve the health care provided.

**Methods:** Retrospective study of the medical records of patients who LPED from 1st January 2014 to 31st December 2015. We analyzed the social-demographic profile, level of priority (Canadian Triage and Acuity Scale Paediatric - PaedCTAS) and outcomes of LPED.

**Results:** Out of the 160402 visits in the 2-year period studied, we verified a 2.7% rate of LPED. Younger age was an important factor for LPED, 58.3% corresponding to children under 6 years old. There was no difference between genders. Lower acuity level was also relevant, given that 70.4% of LPED were classified as level IV (less urgent) or level V (not urgent). Still, of all urgent patients (level III) 2% were LPED. Out of the 0.3% of the emergent patients (level II) who were LPED, 25.9% sought further medical attention within 72 hours. The occupancy rate correlated with LPED and Monday was the day of the week with a higher rate. Out of the 4286 LPED, 5.4% had been referenced, 10.2% returned within 72 hours and 0.5% of the total returned and were admitted.

**Conclusion:** Although some factors like occupancy rate are unchangeable, some measures like staff reinforcement at the busiest periods might reduce LPED. Additionally, most of LPED had lower acuity levels. Thus, the improvement of Primary Care access and health education policies could optimize health resources. Higher risk patients, however, concern us and might benefit from a closer follow up.

ID: 91 / OP5: 8  
ORAL

**RISK OF MORTALITY IN PEDIATRIC INTENSIVE CARE UNIT USING PEDIATRIC RISK OF MORTALITY (PRISM) III SCORE**

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**Background:** PRISM III is the severity scoring system for critically ill children, which has been accepted to predict death.

**Objective:** To evaluate risk of mortality in pediatric intensive care unit (PICU), Songklanagarind Hospital using the PRISM III score.

**Methods:** We retrospectively review the computer-based medical records of patients age 0-15 years who admitted to PICU Songklanagarind Hospital between November 2013 and April 2015. Demographic data, outcomes, PRISM III score of the first 12 hour of admission were recorded. The probability of death was calculated by Pollack's equation.

**Results:** A total of 598 patients (median age 37.4 months, range 7.6-94) were enrolled. Thirty percent were aged less than 1 year. Fifty-five percent were male. Fifty three percent were admitted for postoperative care. Most of patients (82%) had underlying diseases. The three most common admission problems were cardiovascular (36 %) followed by respiratory (30%) and neurology (19%). The median PRISM III score was 4 (IQR 1,8). The mean length of PICU stay was 3.5 days (SD 2,6) with the overall mortality was 14.2%. The death group had significant higher PRISM III score than survivors (3 VS 13,  $p < 0.001$ ). The PRISM III score cut off at 9 had 75.3% sensitivity and 84.2% specificity in predicting mortality (AUC 0.79). The patients with PRISM III score  $\geq 9$  had 4.8 times higher risk of death than others. Using univariate logistic regression analysis, the three risk factors of mortality were the use of high frequency ventilation (OR 20.46), sepsis (OR 11.02) and peritoneal dialysis (OR 5.28).

**Conclusion:** PRISM III score  $\geq 9$  has sensitivity 75.3% and specificity 84.2% to predict death in PICU. The major risk factors of death are use of high frequency ventilation, sepsis and peritoneal dialysis.

ID: 157 / OP5: 9  
ORAL

**POINT OF CARE C-REACTIVE PROTEIN AND WHITE BLOOD CELL COUNT IN A PEDIATRIC EMERGENCY DEPARTMENT**

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**Introduction:** The assessment of patients presenting to the Pediatric Emergency Department (P-ED) may include white blood cell count (WBC) and C-reactive protein (CRP) measurement. Point-of-care (POC) tests that can perform this evaluation have been available, but there are few studies about their performance in a paediatric clinical setting.

**Purpose:** Determine the accuracy and feasibility of POC tests for WBC and CRP in a P-ED by comparison with conventional methods. Compare the patient discomfort in both collection procedures.

**Materials and Methods:** Patients were included based on clinical criteria for blood sampling, after consent. We collected capillary blood for POC WBC and CRP measurements (spinit® BC and CRP) and venous blood for conventional analysis (UniCel® DxH 800 and DxH 600i). We measured the pain score and the hands-on sampling time for each. Statistical analysis was performed using MedCalc® version 15.8. Agreement was assessed using a Bland-Altman plot.

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**Results:** We collected 189 blood samples, corresponding to 179 patients. They were aged 0-18 years. WBC and CRP POC analysers showed good agreement with the reference methods. The mean differences between POC and reference tests were 0,9 10.000/ $\mu$ L for total WBC (95% limits of agreement between -3,8 and +5,5 10.000/ $\mu$ L) and -0,2 mg/dL for CRP (95% limits of agreement between -2,5 and +2,0 mg/dL). The pain score and the hands-on time for sampling were significantly lower in the capillary puncture ( $p < 0,0001$  for both).

**Conclusion:** The POC WBC and CRP tests analysed are accurate and feasible in a P-ED. Capillary blood sampling is less painful and time-consuming than venepuncture. POC can be useful as a method of screening, helping to manage patient flow efficiently in a P-ED.

**ID: 178 / OP5: 10**  
**ORAL**

**EFFECTIVENESS OF REPLACING NEBULIZERS BY METERED-DOSE INHALERS WITH A SPACER DEVICE IN THE PEDIATRIC EMERGENCY DEPARTMENT**

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**Introduction:** Treatment using inhaled bronchodilators with a metered-dose inhaler attached to a spacer device (MDI-SD) has shown to be at least as effective as nebulizers when considering clinical outcomes. A policy change, giving preference to aerosol therapy with MDI-SD was introduced in our hospital, in July 2014, using a non-sterilizable spacer that is given to the patient upon discharge.

**Purpose:** Compare the efficiency of administrating bronchodilators with a MDI-SD against administration via nebulization in children with recurring or exacerbated wheezing.

**Materials and Methods:** Retrospective review of medical records, with collection of the variables under study, of a sample of children under 18, who resorted to the Pediatric Emergency Department (PED) between January 2014 and June 2015 requiring treatment with bronchodilator.

**Results:** A total of 756 episodes were analyzed. MDI-SD was used in 41% of them. The median age was 31 months at admission and 63% of the patients were male. The spacer was more effective than the nebulizer for clinical outcomes (improvement of oxygen saturation and reduction of wheezing and respiratory distress). The median length of stay in the PED was lower for the MDI-SD group. Fewer children required admission to inpatient care when a MDI-SD was used. There was no significant reduction in the within 72 hr re-attendance rate. Preparation and delivery time by the nursing team was lower in the MDI-SD group (2 min in preparation and 5 min in delivery).

**Conclusion:** The MDI and spacer combination was more effective and less time-consuming in the management of children with wheezing. Being one of the first hospitals in Portugal with this policy, we hope this study will contribute to make other hospitals implement a policy change that will lead to a higher successful treatment rate.

**ID: 63 / OP5: 11**  
**ORAL**

**MAGNETICALLY GROWING ROD TECHNIQUE IN EARLY ONSET SCLIOSIS: RESULTS FOR PATIENTS UNDER 6 YEARS OLD**

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**Background:** Magnetically controlled growing rods (MCGR) are increasingly used for the treatment of early onset scoliosis. In very young patients the surgical choices are dual growing rod or VEPTR-like system if the child is very thin. Aim of the study is to retrospectively review our patients under 6 years old treated with MCGR focusing on surgical technique and results.

**Methods:** We retrospectively reviewed our 10 patients, affected by early onset scoliosis and surgically treated with magnetically controlled growing rods (minimum follow up 6 months). There were 4 kids, males, under 6 years old (4y 1mm-5 y 10 mm). The aetiology was 2 idiopathic, 1 congenital and 1 neuromuscolare in congenital syndrome. In one case emiepiphysiodesis was first performed before using MCGR. In 3 cases a dual growing rod was implanted, using as distal anchors pedicle screws, as proximal anchors hooks, in one case we implanted 1 single rod. Surgical Technique red flags:

- Mininvasive incision above and below
- Subfascial rod
- Proximal pedicle and laminar hooks (claw)
- Distal pedicle screws (2 vertebrae)
- Prebended rods
- Before insert the concave rod, then, after the first correction, insert the convex one.
- Perform the first lengthening during the first surgery

**Results:** At a minimum follow up of 6 months and maximum 4 years, after performing minimum 2 lengthening procedures and maximum 22 per patient (lengthening performed every 60-90 days), main thoracic scoliosis was corrected from 66.3° (45-84°) to 32.7° (25°-40°) and a final follow up value of 33.1° (28-40°); mean correction was 50.6% (40-56.8%) and at follow up was 48.7 (37.7-54.5%). No neurological or infective complications occurred. In one patient a revision surgery was performed due to rod fracture, in one case we noted an adding on above the instrumentation. At final follow up, no patient presents pain or functional limitation.

**Conclusion:** Those results showed that MCGR can be safely and effectively used in patients affected by early onset scoliosis, even in very young patients (<6 years); thanks to the new small-rod (7 cm actuator) and the easy way to pre-bending the rod can be used in very small spine instead of VEPTR-like systems and can grant a better anchor and better control of the main thoracic curve. An acceptable complications incidence (25%) if compared with literature was noted, offering excellent deformity control and functional outcome. An expert team of surgeons, anesthetists and nurses is mandatory.



OP5: ORAL PRESENTATIONS: SESSION 5

ID: 79 / OP5: 12  
ORAL

**IMMIGRATION AND ADOLESCENT EMOTIONAL AND BEHAVIOURAL PROBLEMS IN 31 COUNTRIES: EXPLORING THE SIGNIFICANCE OF IMMIGRATION POLICIES AND NATIONAL LEVEL ATTITUDES AGAINST IMMIGRANTS**

Gonneke W.J.M. Stevens<sup>1</sup>, Sophie D. Walsh<sup>2</sup>, Tim Huijts<sup>3</sup>

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**Introduction:** The “risk perspective” regarding the impact of immigration on emotional and behavioural problems among adolescents, has emphasized, among other risks, the detrimental effects of facing prejudice and discrimination. Combining this notion with the great variation in reception of immigrants throughout Europe, it seems highly likely that the psychological functioning of immigrant adolescents varies according to the receiving country attitudes and policies toward immigrants. However, there is a notable lack of research on this topic.

**Purpose:** This study set out to test the effect of immigrant status on adolescent emotional and behavioural problems in 31 countries. Additionally, the study examined the importance of a) national level attitudes toward immigrants and b) migration policies, in understanding cross-national differences in the impact of immigration.

**Methods and Materials:** Analyses are based on 2013/2014 data from 11-, 13, and 15-year-old adolescents participating in the HBSC study in 31 countries throughout Europe (total N = 150,000).

**Results:** Results showed lower life satisfaction in immigrant as compared with non-immigrant adolescents, and an increased risk of psychosomatic symptoms, fighting and bullying in the former group. Results also indicated that in countries with more lenient migration policies, differences in life satisfaction and bullying between immigrants and non-immigrants were considerably smaller. Higher levels of (country-level) anti-immigrant attitudes were associated with higher levels of psychosomatic symptoms in both immigrant and non-immigrant adolescents.

**Conclusion:** Results reveal that immigrant adolescents are at increased risk for emotional and behavioural problems, and migration policies are important in explaining receiving country differences in these effects.



# POSTER PRESENTATIONS

## POSTER SESSION 1

### ■ PO1: POSTER PRESENTATIONS: SESSION 1

Time: Thursday, 08/Dec/2016: 1:00pm - 2:00pm • Location: Assembly Hall Corridor - Poster Area

### Presentations

ID: 122 / PO1: 1  
POSTER

#### CONCUSSION: AN UNDERDIAGNOSED CONDITION

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**Introduction:** Concussion is defined as a transient impairment of brain function secondary to head trauma. The overall incidence described in literature is 26.1 per 100,000 athlete exposures. However, it is suspected to be an underdiagnosed entity, especially in countries such as Spain where no concussion registries exist.

**Purpose:** To determine the self-reported knowledge and clinical practice surrounding concussion diagnosis and management in a pediatric care network.

**Materials and Methods:** A cross-sectional survey was distributed per email to pediatric primary care and emergency medicine providers of a tertiary hospital. Epidemiological, diagnostic and treatment aspects of concussion were queried. A Likert scale from 1 "Strongly agree" to 5 "Strongly disagree" was used to assess responses.

**Results:** 193 surveys were evaluated, obtaining a response rate of 16%. 43.4% of the participating clinicians were primary care pediatricians and 56.4% were emergency medicine providers including Pediatrics interns and residents. Correct answers were considered "agree" or "strongly agree" to the following statements about concussion: Headache and vomiting are the most common symptoms, 73.4%; Dizziness or balance disorders are symptoms of concussion, 72.5%; there is an increased risk of sequelae or death after a second concussion (second impact syndrome), 55.3%; sports activities should be avoided in the first 48 hours after concussion, 94.5%; the patient should not attend school for the following 1-3 days after concussion, 79.7%. Less than half of respondents (44.2%) considered that they had sufficient information to provide an appropriate management of these patients. The majority of respondents (92.4%) state that unified guidelines are needed to systematically diagnose and manage these patients.

**Conclusion:** This study shows the lack of awareness about basic concepts of concussion among many pediatricians in Spain. This can lead to infradiagnosis of concussion and to inappropriate management of these patients, with consequential risk of neurologic sequelae. This study highlights the need for implementing a network of collaboration and training for the involved pediatricians, in order to ensure the standard of care of patients affected by concussion.

ID: 117 / PO1: 2  
POSTER

#### STERIODS WITHOUT SCORING? A QUALITY IMPROVEMENT PROJECT ON CROUP SCORING AND TREATMENT WITH DEXAMETHASONE IN PAEDIATRIC A&E

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**Introduction:** In clinical practice, there are different approaches to the treatment of Croup in children, with many receiving Dexamethasone despite relatively mild symptoms. When observing clinical practice, there appeared to be large discrepancies in the recording of scores for the severity of Croup and when treatment was initiated.

**Purpose:** This project's aim was to gather information on current practice into the use of Dexamethasone, and the documentation surrounding the decision to prescribe it. It was also used to identify at what point the medication is prescribed, and whether there are any trends regarding the severity scoring and prescription.

**Materials and Methods:** The Hospital Policy on the Management of Croup was used as the measurable guidelines. A list of attendances with Croup within a 6 month period was generated using hospital numbers, and the CAS cards from A&E were then viewed to gather information about attendance and prescriptions. If the severity score was not included, a score was calculated based on the information documented about clinical examination and observations.

**Results:** The total number of cases included in the project was 268. 60% of notes did not have a croup score documented. 88% of children who presented with Croup were given Dexamethasone, and of those children who scored 0, 71% received Dexamethasone. Perhaps most interestingly, 42% of all patients were prescribed Dexamethasone in triage before they had been seen or assessed by a doctor.

**Conclusion:** Evidence suggests that it is always beneficial to treat cases of mild croup with Dexamethasone.<sup>1,2</sup> The data collected in this project showed that our treatment of croup in A&E generally followed these principles, with the majority of children receiving Dexamethasone. There was, however, a large discrepancy in when and where treatment was initiated. This demonstrated the need to streamline the treatment of croup to ensure that children are being assessed appropriately before the prescribing of Dexamethasone. This poster will describe the processes used to implement a more definitive and consistent way of treating these children in A&E, which may be beneficial to other district general hospitals.

**PO1: POSTER PRESENTATIONS: SESSION 1**

**ID: 198 / PO1: 3**  
**POSTER**

**ABDOMINAL OBESITY AND AMOUNT OF STEPS PER DAY IN PRESCHOOL-AGED CHILDREN**

**Susana Vale<sup>1,2</sup>, André Seabra<sup>2</sup>, Jorge Mota<sup>2</sup>**

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**Introduction:** Childhood obesity is a widespread and growing problem in the world, even at preschool ages. Abdominal obesity is particularly important as a marker for health status as it has emerged as a significant predictor for metabolic abnormality and adverse health status in childhood. However, some studies support the belief that being active is important in the prevention of obesity.

**Purpose:** The purpose of this study was to analyze the associations between abdominal obesity and number of steps per day in preschool children.

**Methods:** The sample comprised 639 preschool children with mean age of 5 years. Waist-to-height ratio (WtHR) was calculated as the ratio of waist/height with a cutoff of 0.5 used to define risk of abdominal obesity. Steps per day were assessed during 7 consecutive days by accelerometers (Actigraph GT1M). Children were classified as Insufficiently Active (less than 9000 steps per day) and Active (more than 11500 steps per day). Logistic regression was used to determine the association between abdominal obesity and number of steps per day.

**Results:** The prevalence of abdominal obesity was 41%. About 61% of the children were Insufficiently Active and 18% were Active. Insufficiently Active children were more likely to have risk of abdominal obesity (OR: 1.6 IC95%: 1.0-2.5) compared to those who were Active, even after adjustment to gender, time in sedentary behavior and time play on the floor.

**Conclusion:** We found an association between the number of daily steps and abdominal obesity in pre-school children. Further longitudinal studies are needed to confirm this data.

**ID: 134 / PO1: 4**  
**POSTER**

**BALANITIS XEROTICA OBLITERANS: HAS DIAGNOSTIC ACCURACY IMPROVED AMONGST GENERAL PRACTITIONERS?**

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**Introduction:** Balanitis Xerotica Obliterans (BXO), a form of pathological phimosis, has increased in the paediatric population in recent years, particularly in those aged less than 5 years. This has lowered the index of clinical suspicion amongst paediatric surgeons whilst also coinciding with extensive educational measures and guidelines put in place to improve the diagnostic accuracy of such pathology initially seen by General Practitioners (GP).

**Purpose:** To observe whether GPs are referring more appropriately for BXO especially at a time of clinical concern, and whether their discriminative abilities were affected in children less than 5 years. Fearing its pathological sequelae, our secondary measure was to explore if BXO was over-diagnosed by surgeons potentially leading to unnecessary circumcisions of a healthy foreskin.

**Methods:** This one-centred retrospective study collected data on all children less than sixteen years who were referred for circumcision over a one year period. Circumcision was justified if the surgeon found pathology under the foreskin commissioning guidelines set by the Royal College of Surgeons England. After clinical diagnosis of BXO, the pathological database was searched for histological confirmation.

**Results:** A total of 194 patients were referred. GPs queried pathological phimosis in 166 patients with 14.5% diagnosed clinically with BXO. Only 66.7% of cases were histologically confirmed with chronic inflammation found in the rest. 5.5% of all boys referred had BXO on histology. Of those referred, 8.1% and 1.7% of children less than 5 had clinical and histologically confirmed BXO respectively. This was in contrast with 18.1% and 9.2% found in the older group.

**Conclusion:** This series showed that despite improvements from earlier literature (5-6%), diagnostic inaccuracy amongst GPs remain high when referring for BXO, particularly in those aged less than 5 years. Established guidelines on pathological phimosis and natural foreskin development seem to have little success on enhancing discriminative abilities in primary practice. Further actions in the form of workshops, clinical courses and e-learning modules may be beneficial. Although BXO was clinically over-diagnosed by surgeons, all excised foreskins were pathological deeming circumcision necessary.

**ID: 27 / PO1: 5**  
**POSTER**

**CAR RESTRAINT SYSTEM, PARENTS KNOWLEDGE, ATTITUDES AND PRACTICE OF PARENTS IN OMAN**

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**Objectives:** The role of car restraint system has been proven to reduce injuries and death among children. Oman has significant mortality & morbidity rates from motor vehicle collisions. The use of children car restraint system (CRS) depends on parental choice, as there is no law in Oman to reinforce its use. It is worth to increase awareness about the types of CRS and how they are used. This study aims to evaluate the knowledge, attitudes & practice of parents in Oman on children car seats and to identify the factors that limit its use.

**Methods:** A cross-sectional study using a self-fill in survey has been conducted in Sultan Qaboos University from May 2015 to May 2016. The questionnaire gathered information on knowledge, attitudes & practice of the drivers toward the use CRS.

**Results:** A total of 450 questionnaires were filled and analyzed. Majority of the participants were Omani (95%). Around 96% they have heard about

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the child car seats and more than half (53%) they knew about it from friends and relatives. Approximately 80% of respondents believe that children car seats are the safest place for children in the car. However 55% are using the car seats. Among car seat users around 75% are both parents university graduates. Majority of Parents with total monthly income >2000 OR are using CRS (89%). On the other hand, only 35% of those with total monthly income < 500 OR are using child car seats.

**Conclusion:** The use of children car seats in Oman is still limited. Awareness should be increased using media, car sale companies, hospitals & school. This study shows direct relation between the educational level of parents and their socioeconomic state with the use of CRS.

**ID: 99 / PO1: 6**  
**POSTER**

**CARIES PREVALENCE DOES NOT REFLECT ORAL HYGIENE STATUS IN CHILDREN WITH CHRONIC KIDNEY DISEASE**

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**Introduction:** The frequency of chronic kidney disease (CKD) in children is increasing globally. CKD itself and the side effects of its treatment have many systemic and oral manifestations. Even though oral hygiene is considered to be of lower importance for patients with CKD, caries prevalence seems to be much lower in children suffering from CKD than compared to healthy counterparts.

**Purpose:** To determine oral hygiene status index and caries prevalence of a group of children with CKD and compare results with age&sex matched controls.

**Materials and Methods:** 55 patients with CKD (divided into 3 groups: Stage I-II; Stage III-IV and Stage V), followed by Pediatric Nephrology Department at Marmara University-Turkey were included in the study. Oral findings were collected via specific indices (DMFT, dmft, OHI-S) used in dental examination to compare with those of 60 healthy children. A questionnaire for oral habits (snack and brush frequencies) was filled by their parents.

**Results:** CKD group showed significantly lower prevalence of dental caries than the control group. Prevalence of caries in permanent teeth (DMFT) in CKD and control group was 47,2% and 75,9%; while this was 37,1 % and 91,7% for primary teeth (dmft) respectively ( $p < 0,005$ ), in spite of very low frequency of brushing (more than 58% of patients were brushing less than 2-3 times a week or not brushing at all, whereas this rate was 22% in control group). Oral hygiene index scores were significantly higher in CKD groups than in control group (1,39 and 0,64 respectively,  $p < 0.001$ ), meaning higher plaque & calculus deposits.

**Conclusion:** Changes in saliva components, raised pH above critical level for demineralization, lower incidence of Streptococcus mutans are key reasons for lower caries prevalence in CKD patients. However, better appearance in a quick dental examination made by non-dentists may mask more important oral manifestations of this disease. Consequently, the clinician may not refer these patients to a specialist for treatment and worsened oral environment can remain a threat to general health. Therefore, close cooperation between dentist and pediatric nephrologist is required in the treatment of those children. Early evaluation of the oral health of renal patients is essential to eliminate potential infections from the oral cavity.

**ID: 50 / PO1: 7**  
**POSTER**

**CHALLENGES TOWARD ACHIEVING EFFECTIVE COMMUNICATION AND COLLABORATION AMONG PHYSICIANS AND NURSES IN PEDIATRIC DEPARTMENT QATAR**

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**Introduction:** Clear communication is associated with better quality of care to patients, increase teamwork and job satisfaction for physicians and nurses. Effective team communication in a hospital inpatient setting is challenging and often requiring unplanned communication among busy healthcare providers.

**Purpose:** To identify barriers to provide effective communication and collaboration among physicians and nurses in daily inpatients practice and to explore potential recommendations that can overcome challenges

**Methods:** A cross sectional survey were administered from September until November 2015 to the physicians and nurses on pediatrics inpatients wards at Hamad Medical Corporation the main tertiary hospital in Qatar, questioner included details of demographics, perceptions and barriers to proper communication and collaboration in daily clinical practice. Questions offered objective answers utilizing the 4 -point Likert scale that can be used to perform statistical analysis

**Result:** Out of 124 responses, 83 (67%) were Physicians and 41 (33 %) Nurses. Almost (69%) of physicians stated that they enjoyed communication with nurses compared to (41.5%) of nurses ( $P < 0.012$ ). Nearly (67.5%) of physicians had a good communication with nurses compared to (44%) of nurses ( $P < 0.039$ ). Both group identified several barriers to effective Physicians -Nursing Communication; Lack of sharing plan in decision-making, Lack of physician openness to communication, lack of receiving accurate and correct information, difficulty reaching the physician, lack of professionalism and lack of institutional support

**Discussion and Conclusion:** Our study shed light on barriers to optimal physician - nursing communication in pediatrics Inpatient setting; better understanding of these aspects will insure excellent patients care level .

Also our finding identified several strategies to overcome above challenges: mandatory bedside rounds between health care providers and patients, implement structured communication tools, Improve organizational culture and organized lectures and workshops to ensure excellent patients care.

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**ID: 9 / PO1: 8**  
**POSTER**

**CLINICAL SIGNIFICANCE OF IGM DEPOSITION IN PEDIATRIC MINIMAL CHANGE DISEASE**

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**Background:** In pediatric population, the course of minimal change disease (MCD) usually has good prognosis. However, in less common presentations, MCD may have a poor course that makes renal biopsy a must to identify the etiology. Immunoglobulin M (IgM) occasionally deposits in the mesangium and it is seen under the electron microscopy (EM) and immunofluorescence (IF). The rule of IgM is controversial in MCD, as it is believed that it is associated with poor outcomes for MCD i.e. poor response to initial steroid therapy and deterioration of kidney function. This study aims to explore the clinical significance of mesangial IgM deposits on the outcome of MCD in the pediatric population.

**Methods:** In this retrospective cohort study, we obtained native kidney biopsy samples for 212 children who were diagnosed with MCD from 2003 to 2014. The sample was divided according to the histopathological deposition of IgM in biopsies under IF: those whose biopsies showed IgM were labeled as IgM+IF (n=85), while those whose biopsies showed no IgM were labeled as IgM-IF (n=127). We reviewed hypertension, hematuria, creatinine clearance at time of presentation to our institute, response to corticosteroid (dependence, resistance and frequent relapses), response after adjuvant immunosuppressive therapy (complete remission, partial remission, frequent relapses and no response), development of chronic kidney disease (CKD) and end-stage renal disease.

**Results:** Our results showed that mesangial IgM deposition in MCD was significantly associated with hypertension at time of presentation to our institute ( $p = 0.046$ ). There was statistically significant association between the presence of IgM deposition and development of steroid dependence ( $p = 0.048$ ). Mesangial IgM deposition was associated with development of CKD ( $p = 0.039$ ).

**Conclusion:** Our results indicated IgM deposition in MCD is associated with hypertension, development of steroid-dependence and CKD. We recommend a prospective study to verify the rule of IgM as a marker of poor outcomes of MCD.

**ID: 150 / PO1: 9**  
**POSTER**

**DOES COUGH MATTER? – A PARENTS' PERSPECTIVE**

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**Introduction:** Cough is a common symptom in children. Despite being commonly self-limited, it is still a motive of concern to parents. Cough and cold medications are widely used regardless of unproven efficacy and insecure safety issues. Concerns about toxicity led to an FDA recommendation against its use in children younger than 2 years old.

**Purpose:** The aim of this study was to understand caregivers' perspective on cough, attitudes towards a coughing child, including medication use rate and impression on its efficacy and safety.

**Materials and Methods:** A cross-sectional observational study was conducted during 3 months (February to April 2016). Data was obtained through a survey applied to a sample of caregivers of children admitted to the Emergency Room of a Portuguese hospital.

**Results:** We collected 220 completed surveys. Most participants were parents (94%), females (82%), mean age: 37 years. Two thirds of them were high school or college graduated. Almost one third (28%) of the children admitted were younger than 2 years (mean age: 6 years). Most caregivers (63%) agreed that cough is a defensive mechanism but more than one third (37%) believed that cough is harmful to the child. The majority of them stated feeling very worried when their child is coughing (56%) and sought medical advice (65%). Half of the participants (49%) reported using cough medicines routinely. The administration rate was higher (64%) in children aged 6 to 10 years. There were 20% of children younger than 2 years taking them. Less instructed caregivers had significantly higher rates of medication use. An even higher proportion (65%) admitted using cough medicines in the last winter, from which more than half (63%) had a prescription from a doctor: a family doctor (60%) or a pediatrician (37%). The most used drugs were expectorants (35%), antihistamines (14%) and natural products/homeopathic remedies (14%); 5% used antitussives. Most caregivers who used them had an impression of effectiveness (72%). Only one third of all caregivers agreed that cold and cough medication can be dangerous to a child.

**Conclusion:** Our study suggests that cough is a worrisome and poor understood symptom to parents. We found a high rate of medication use, especially among less instructed parents. Caregivers overestimate the importance of cough and have a false sense of effectiveness and safety from cough medicines. There was also a high rate of medical prescription suggesting that not only parents but also health care professionals need educational interventions.

**ID: 58 / PO1: 10**  
**POSTER**

**EFFECTS OF INDOOR AIR POLLUTION FROM SOLID FUEL COMBUSTION ON DEVELOPMENT OF CHILDREN UNDER 5 YEARS**

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**Introduction:** Indoor air pollution (IAP) is a significant health hazard, but more hazardous to children than to adults. Multifaceted toxic effects of air pollution damage the nervous system through diverse pathways. Exposure to indoor air pollution may affect early life development.

**Purpose:** The purpose of the study was to determine the effects of IAP caused by solid fuel combustion on early life development of children under 5 years.

**PO1: POSTER PRESENTATIONS: SESSION 1**

**Materials and Methods:** A prospective study was conducted in a mixed urban/semi urban area in Sri Lanka. The study population comprised 222 children under 5 years, permanently residing in the area. Development was assessed at baseline and after 12 months using the Denver II developmental assessment scale.

**Results:** Fifty-nine percent of children were living in households using firewood or kerosene oil as the main source of cooking fuel (high exposure group) and 41% were living in households using liquefied petroleum gas (LPG) or electricity (low exposure group); 54% of children were males. There was a significant delay in language development in children in the high exposure group as compared to children in the low exposure group ( $p=0.006$ ). Delays in developmental domains were correlated: fine motor and language ( $r=0.50$ ;  $p<0.001$ ); fine motor and gross motor ( $r=0.40$ ;  $p<0.001$ ); fine motor and social development ( $r=0.19$ ;  $p=0.005$ ); language and gross motor ( $r=0.49$ ;  $p<0.001$ ), language and social development ( $r=0.22$ ;  $p=0.001$ ); and gross motor and social development ( $r=0.18$ ;  $p=0.007$ ). Children in the high exposure group who had "cautions" (a child's inability to perform a task done by 75% of children in the same age group in the reference population) at baseline, were more likely to have "cautions" at the end of follow-up at 12 months in fine motor ( $p<0.001$ ), social behavior ( $p<0.001$ ), and gross motor ( $p=0.003$ ) domains, as compared to children from the low exposure group.

**Conclusion:** There was a significant delay in language development in children in the high exposure group as compared to children in the low exposure group.

**ID: 156 / PO1: 11**  
**POSTER**

**EFFICACY OF EGAMI, KOBAYASHI AND SANO SCALES ON THE OUTCOME OF PATIENTS WITH KAWASAKI DISEASE.**

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**Introduction:** Kawasaki disease (KD) is an acute, systemic vasculitis. It is the most common cause of acquired coronary artery disease in childhood. Treatment for acute disease includes intravenous immunoglobulin (IVIG) and aspirin. EGAMI, KOBAYASHI and SANO scales have been developed to identify children at highest risk of IVIG resistance and, hence, highest risk of developing cardiac artery abnormalities (CAA).

**Purpose:** The aim of this work is to evaluate the efficacy of Egami, Kobayashi and Sano scales to predict resistance to IVIG and onset of CAA.

**Materials and Methods:** Patients with diagnosis of KD from January 2000 to December 2014 were retrospectively recruited in a Spanish reference pediatric institution. Diagnosis was based on American Heart Association criteria. Clinical and laboratory data were collected. Treatment response was defined as resolution of fever within 48 hours after initial IVIG. Prediction rates of Egami, Kobayashi and Sano scales regarding IVIG resistance (IVIGR) and onset of CAA were evaluated.

**Results:** 112 patients were included. Median age at diagnosis was 2 years (range 0,25-11). Mean fever duration was 6.68 days ( $DS \pm 2.59$ ). 13.4% showed no response after initial IVIG. CAA was present at diagnosis in 25.9% patients. In 33% of them had resolved in an ulterior ultrasound control and in 0,08% patients, cardiac lesions progressed.

**Conclusion:** Egami, Kobayashi and Sano scales show low sensitivity but good specificity to predict the risk of IVIG resistance and coronary disorders.

**ID: 192 / PO1: 12**  
**POSTER**

**FAMILY HISTORY AND PRENATAL DIAGNOSIS OF CLEFT LIP AND PALATE OF A SPECIALIZED CENTRE**

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**Introduction:** Cleft lip and palate (CLP) has a multifactorial pattern of inheritance, making family history a crucial aspect in the approach of patients and prenatal diagnosis (PD) an essential aspect of the clinical work-up. Bi-dimensional ultrasound (US) screening, an important tool in this field, became universally used in Portugal by governmental guidelines since 2001 and in 2007 four-dimensional US also became available.

**Purpose:** To study the prevalence of positive family history in patients with CLP and analyse PD usage in children born before 2001, between 2001 and 2007 and after 2007.

**Material and Methods:** Cross-sectional study of all patients with CLP followed by the trans-disciplinary team of CLP of a reference hospital between January 1992 and December 2015. OFC types were categorized according to Spina classification: cleft lip (CL), cleft lip and palate (CLP), isolated cleft palate (CP) and atypical clefts (AC). OFC laterality, family history, associated syndromes and identified genetic anomalies were reported. The R language was used for statistical analyses.

**Results:** The cohort comprised 568 patients with CLP. The prevalence of family history was 31.3%; of these 27.2% had an identified syndrome. Of the children born before 2001 ( $n=190$ ) 9.2% had PD of CLP; those born between 2001-2007 ( $n=151$ ) 29.8% had CLP diagnosed in utero; those born after 2007 had CLP diagnosis increased ( $n=185$ ) to 45.9%. Since the year of bi-dimensional screening implementation in Portugal,  $n=29$  (43.9%) of type I-CL, 81 (72.9%) of type II-CLP,  $n=14$  (9.9%) of type III-CP and  $n=1$  (20%) of type IV were diagnosed in prenatal period. In the studied group, 1/3 of children had a positive family history for CLP. Since the universal bi-dimensional screening implementation in Portugal, there were more cases diagnosed in the prenatal period, with a significant statistical association ( $p<0.001$ ) between PD and CLP before and after 2001 and also before 2007 and after 2007. There is also a statistically significant association between the type of CLP and PD, with higher diagnosis accuracy for the CL and CLP ( $p<0.001$ ).

**Conclusion:** The universal bi-dimensional and four-dimensional US screening implementations in Portugal are increasingly used with a superior PD accuracy in patients with CLP.



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**ID: 104 / PO1: 13**  
**POSTER**

**FEVER-INDUCED BRUGADA PATTERN: TEMPERATURE MATTERS.**

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**Introduction:** Brugada syndrome (BrS) is a genetic cardiac channelopathy presenting with a characteristic electrocardiogram (ECG) pattern and a tendency to develop malignant polymorphic ventricular arrhythmias that may lead to cardiac arrest. Fever is known to associate with febrile seizures and arrhythmic events in the setting of sodium channel disorders. Fever can unmask the type 1 ECG pattern of BrS and plays a critical role in the causation of life-threatening arrhythmias.

**Purpose:** To describe a case of an asymptomatic patient with a type 1 Brugada ECG induced by fever.

**Material and Methods:** A previously healthy 4-year-old boy was in control in the Pediatric Cardiology Department because his father, a 30-year-old man, had just been diagnosed of Brugada Syndrome (with implantable cardioverter defibrillator but without genetic testing yet), a father's cousin died of sudden cardiac death when he was 40-year-old in his country, Bulgaria. His medical history was insignificant (no syncope, palpitations or febrile seizures), his first cardiac study was also normal (physical examination, ECG, echocardiography). As his parents were advised, the child went to the Emergency Service because he had fever (no vaccine recently), due to a respiratory viral infection without complications. The ECG performed when he had fever, 39.5°C, revealed a normal sinus rhythm but with a type 1 Brugada pattern (right bundle branch block-like morphology, cove-shaped ST elevation in right precordial leads > 2mm, followed by a negative T wave), which disappeared after the fever subsided with antipyretic drugs. The child remains asymptomatic without treatment, he is considered to carry the disease and genetic results are still pending.

**Results:** Fever unmasks the type 1 ECG pattern of Brugada syndrome in a healthy child.

**Conclusion:** We advise the recording of a standard ECG when children of families with BrS are admitted to the hospital with fever. Fever must be abated with prompt antipyretic measures in children harboring inherited cardiac channelopathies. Parents should also received detailed instructions and advice about medication associated with impaired sodium channel function that could adversely affect these children (see [www.brugadadrugs.org](http://www.brugadadrugs.org)).

**ID: 26 / PO1: 14**  
**POSTER**

**GENETICS IN AUTISM: COMPLEX GENOTYPE, COMPLEX PHENOTYPE**

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**Introduction:** Autism is a common reason for referral to the regional genetics service. Advances in genomic medicine are improving our understanding of the genetic contribution to autism spectrum disorders (ASD). Patients show social and communication interaction problems, with restrictive behaviour. Co-morbidities commonly include intellectual disability (ID) and epilepsy. The phenotypic complexity mirrors genetic complexity, with environmental factors also impacting significantly on phenotype.

**Purpose:** To describe and review the yield of results found after genetic assessment, for a phenotype of ASD.

**Materials and Methods:** A retrospective case note review was performed on 76 sequential cases referred to the genetic clinic at the Manchester Centre for Genomic Medicine. Cases of ASD (+/- ID) referred over 16 months between August 2014 and December 2015 were identified using local referral databases.

**Results:** Demographic details were collated, alongside phenotypic features and tests performed. 87% of those referred to the service were male, with 49% living in deprivation deciles 1 and 2 (top 20% areas of deprivation in UK). 67% were aged less than 10 years old, with 42% less than 5 years. Our tertiary service instigated genetic testing in 46% of the patients. Others were investigated by the referring team prior to appointment, or genetic testing was not felt to be required. Array CGH and FraX were performed on 80% of patients, with no pathogenic findings found. Incidental findings and variants of unknown significance were found in 4 cases. 2 families, each with two sons, consented to Deciphering Developmental Disorders (DDD). The study has not identified a cause so far.

**Conclusion:** ASD is a complex multifactorial condition, and current investigation with technologies such as whole exome of genome sequencing have suggested a substantial genetic contribution. However, the tests currently being used in the NHS are not sophisticated enough to identify causes for this prevalent condition.

**ID: 13 / PO1: 15**  
**POSTER**

**GIANT OVARIAN CYST MASQUERADING AS MASSIVE ASCITES IN AN 11-YEAR-OLD**

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**Introduction:** We are presenting a unique case of an 11-year-old girl admitted for investigation of progressive abdominal distention of more than one-year duration. Due to the complete cystic nature of the mass and its enormous size, it was not visualized by the ultrasound and was reported as massive ascites. MRI and postoperative histopathology confirmed a diagnosis of giant serous cystadenoma of the right ovary. She underwent a right ovarian cystectomy with complete preservation of both ovaries and fallopian tubes. The cyst weighed 13kg and contained 13 liters of fluid.

**Case Report:** Our patient is unique not only in terms of her age, but also as she posed a diagnostic challenge in many aspects. Firstly, she presented with a huge asymptomatic abdominal distention, which upon initial clinical assessment was presumed to be massive ascites. Moreover, ultrasound of the pelvis and abdomen, in our case, confirmed this clinical diagnosis of massive ascites without delineating a possible cause,

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necessitating an urgent MRI, which led to the final diagnosis of a giant ovarian mass. If management was undertaken in our patient on the basis of ultrasound diagnosis alone (namely, paracentesis for the presumed ascites), it may have led to erroneous transabdominal aspiration of the undiagnosed ovarian cyst. This case report emphasizes the paramount importance of considering ovarian masses in the differential diagnosis of a patient who has abdominal distention without symptoms or signs of liver, renal, or cardiac diseases.

**Conclusion:** Ultrasound should not be the only imaging modality especially in case of massive ovarian cysts as it may mimic ascites. It is also vital to raise awareness among the population to seek medical advice as early as possible to avoid complications such as ovarian torsion, rupture, and eventually infertility in such young age group. Fertility-conserving treatments, as in our patient, need careful follow-up because of the possibility of recurrence in the remaining ovary or malignancy transformation.

**ID: 85 / PO1: 16**  
**POSTER**

**HAEMOLYTIC UREMIC SYNDROME: CURRENT ISSUE FOR SMALL PEDIATRIC AGE GROUP – OUTBREAK 26 CASES IN SIX MONTHS**

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**Introduction:** Haemolytic uremic syndrome (HUS) is a systemic disease and one of the most frequent causes of acute kidney failure (AKF) in children. It was described for the first time in 1955 and it is represented by the triad: acute kidney failure, haemolytic anemia and thrombocytopenia. Despite the decrease in mortality caused by sepsis, in the latest years, this pathology still remains a major cause of morbidity and mortality for the children younger than five years old. In Romania, most cases are due to infection with Shiga toxin-producing *Escherichia coli* (STEC). Alarming for us was the rapid increasing of case numbers in the last 6 months. It was gathered an international multidisciplinary team with the participation of European Programme for Intervention Epidemiology Training (EPIET), European Centre Control (ECDC) in Stockholm, Sweden and Istituto Superiore di Sanità (ISS) in Rome, Italy testing the antibodies to the lipopolysaccharide (LPS) of six major STEC serogroups (O157, O26, O103, O111, O145, and O55) by ELISA.

**Purpose:** To understand and recognize early the first symptoms and prevent the possible complications during the evolution and the treatment of the disease.

**Materials and Methods:** A retrospective study of 26 cases of haemolytic uremic syndrome treated in the first 6 months of this year in the Nephrology Department of the "Marie Curie" Emergency Children's Hospital, Bucharest, Romania.

**Results:** The age of studied patients was between 5 months and 3 years. All the patients presented at the beginning diarrhea. Some of them experienced important melenic stool, neurologic disorders of consciousness, dizziness and tonic-clonic seizures due to electrolyte imbalances. 19 children needed peritoneal dialysis between 3 and 21 days. In more than 50% of the cases the pathogen was *E. Coli* (most frequent serogroup O26), 1 case was diagnosed with *Salmonella*. Geographical distribution of the 26 cases: most of the patients were located Arges- Pitesti, but also in: Bucharest, Constanta, Craiova. Evolution: 3 cases died and the global evolution of the other 23 patients was favorable.

**Conclusion:** In the great majority of the presented cases, HUS is due to STEC infections. It is a severe, life-threatening disease, but in most cases it is self-limiting with complete resolution. The treatment is supportive and aims not only AKF but also extrarenal involvement of the disease (multiple renal failure), neurological, intestinal, pancreatic, hypertension, cardiac or pulmonary impairment. The rapid and accurate diagnosis and correct supportive treatment is the key of a good outcome and evolution in HUS in children.

**ID: 53 / PO1: 17**  
**POSTER**

**IDENTIFYING THE UNWELL CHILD IN THE EMERGENCY DEPARTMENT: WHICH NUMBERS MATTER?**

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**Introduction:** Identifying the unwell child early on admission to the emergency department allows rapid initiation of treatment and reduces morbidity and mortality. Raised respiratory rate, lactate and Paediatric Early Warning Score (PEWS) have all been identified as potential red flags for serious illness.

**Purpose:** This study therefore investigated respiratory rate, lactate and PEWS to find the best predictor of outcome in paediatric patients admitted to the emergency department at Wythenshawe Hospital.

**Materials and Methods:** Retrospectively 412 children were identified as having had a capillary lactate sample taken on admission to the emergency department between 01.04.2015 and 31.04.2016. Their PEWS, respiratory rate and lactate on admission were extracted from their notes and correlated with admission to hospital, length of hospital stay and diagnoses of sepsis, pneumonia and bronchiolitis.

**Results:** Patients with a diagnosis of pneumonia or bronchiolitis had a significantly higher mean respiratory rate than those without, however there was no significant difference in respiratory rate between patients with and without sepsis. Patients with sepsis, pneumonia and bronchiolitis had significantly higher mean lactates and PEWS scores than those without. On analysis of ROC curves PEWS was the best test for identifying patients with sepsis, pneumonia and bronchiolitis and those admitted to hospital.

**Conclusion:** Overall PEWS was the best test for identifying the unwell child.

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**ID: 144 / PO1: 18**  
**POSTER**

**IMPLICATIONS OF THE MHRA GUIDANCE REGARDING THE PRECAUTIONS OF SODIUM VALPROATE IN THE FEMALE PAEDIATRIC POPULATION AT A DGH**

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**Introduction:** Over the last few years there has been increasing concern with the effect of sodium valproate (VPA) on the developing foetus. Studies have shown an elevated risk of developmental problems ranging from delayed motor skills to speech and language difficulties, as well as lower intelligence quotient (IQ). These findings have triggered the Coordination Group for Mutual Recognition and Decentralised Procedures-Human (CMDh) to strengthen the warnings on the use of VPA in female patients. The Medicines and Healthcare Regulatory Agency (MHRA) have also implemented new guidelines as a result of these findings.

**Purpose:** The primary aim of this project was from within a typical DGH paediatric epilepsy service, to assess the impact of implementation of the MHRA guidelines. This involved identification of all female paediatric (<18 years) patients at Northampton General Hospital who are currently on VPA treatment.

**Methods:** We collected relevant demographics from clinic letters and patient notes such as age, epilepsy type, comorbidities, previous drug treatment and duration of VPA treatment. We sought to explore prior advice given on sodium valproate to the patient and/or their carers.

**Results:** A list of 32 female paediatric patients on VPA treatment was generated. This would represent 32/167= 19% of the local estimated paediatric female population with epilepsy. 63% (n=20) of the female patients were in the 10- 18 age group. It was noted that more than 80% of patients who were on VPA did not have documentation in the notes or clinic letters about the risk of VPA therapy. Only 1 had documentation and the MHRA paperwork in their notes. 4/20 were in the process of being weaned off VPA and weaning is plan in another four patients.

**Conclusion:** In future, all female patients on VPA will be counselled and the MHRA paperwork completed. At that time some patients will be selected for a trial of weaning VPA. Guidelines will be circulated throughout the Trust with regards to the new VPA recommendations. This has highlighted the need for a local Epilepsy Register in order to collect demographics and identify patients who are on any anti-epileptic treatment. This is not the first time there have been concerns with the long term effects of anti-epileptic medication: vigabatrin and felbamate have been found to have serious side effects after further studies. Therefore, a robust database needs to be implemented to enable to contact patients who are on antiepileptic medication.

**ID: 24 / PO1: 19**  
**POSTER**

**MANAGEMENT OF THE CHILD REFERRED WITH "SHORT STATURE"**

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**Introduction:** Growth and development is an integral part of paediatric medicine. Recognising and managing a child with short stature appropriately therefore, is an important process to do correctly and in a standardised fashion, to ensure the highest standard of quality of care.

**Purpose:** This audit looks to assess the current practice in reviewing children referred with short stature to paediatrics, to see if there are any changes required to improve patient care. This follows the guidance article from the BMJ ADC on the investigation of short stature. We aimed to review a number of patients referred to paediatric clinics with short stature and gather information on the consultation information retrieval, any investigations done and the reasons for this, and then the outcomes of these reviews. It is hypothesised that a streamlined process will be helpful in the review of short stature and ensure that a standardised approach is used in order to provide the best assessment and further investigation process for these patients.

**Materials and Methods:** Patient details were obtained by searching for those < 16 years of age who had had radiological wrist imaging in a 4 year period. From this list, those who had bone age assessed were then taken from this and their records looked at on the electronic Evolve system. We used an Excel programme to collect the data.

**Results:** Total 11 patients

**Conclusion:** These results reflect the small numbers and wide age range of children referred specifically for their short stature. From these small numbers, the majority of referrals are made by GPs. A bigger sample group would be interesting in seeing whether this was due to other children already being seen by a paediatrician having their short stature investigated as part of another ongoing review – limited by clinical coding. What this audit shows is that generally short stature is addressed and investigated. What is not clear though is what clinicians see as appropriate first line investigations and when to refer to endocrine specialists. As a result of this audit, the short stature guideline has been amended in the department and a re-audit will be under taken to assess changes in process as a result of this.

**PO1: POSTER PRESENTATIONS: SESSION 1**

**ID: 201 / PO1: 20**  
**POSTER**

**PAEDIATRIC EMERGENCY DEPARTMENT ATTENDANCE IN AN IRISH PERIPHERAL HOSPITAL**

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**Introduction:** This study explored how children are referred to the Emergency Department in an Irish peripheral hospital and evaluated parental expectations on arrival.

**Methods:** This was a cross sectional study carried out in the Emergency Department in Mayo University Hospital over a two week period. A survey, approved by the hospital ethics committee, was given to 50 parents attending the department.

**Results:** We analysed patient demographics, referral source, waiting times, along with parental expectations and opinion on the management of their child. 74% of respondents were presenting with children under 6 years of age. 94% of children arrived via private transport or car, no respondents used public transport, 6% of children brought by ambulance. 70% of children were referred to the Emergency Department via a primary care doctor, 64% of these referred by their own General Practitioner (GP), 36% referred by an out of hours GP, 30% self presented to ED. 92% of parents listed their GP practice as where their child receives regular care. 50% of parents surveyed had expected to be sent to the ED when they attended their GP. 48% of parents thought their child would be treated and sent home by their GP, just one parent expected outpatient referral. As regards admission to hospital, 35% of parents thought their child needed admission, 26% thought they would be discharged from the ED, 39% undecided. The average waiting time in the Emergency Department to be seen by a doctor was 1 hour 25 minutes. Two-thirds of parents had attended the Emergency Department previously with their child. As regards medical cover, 44% of parents had a GP under 6 card, 14% had an under 6 card along with private health insurance, 42% of parents had a GMS medical card. When asked to rate the severity of their child's illness from 1 – 10, mean response was 5.6.

**Conclusion:** Our results are interesting in providing an overview of the local referral process to the Emergency Department in an Irish peripheral hospital and outline the heavy interaction between primary care services and the ED. The recent introduction of the GP under 6 visit card now ensures free primary care to all children less than six years of age in Ireland. This is expected to increase the workload of General Practitioners and bring attention to the relationship primary care centres have with Emergency Department. It is important to audit practices following these changes to ensure paediatric healthcare providers are adequately resourced.

**ID: 215 / PO1: 21**  
**POSTER**

**PEDIATRIC MENINGITIS IN A PORTUGUESE HOSPITAL: WHAT HAS CHANGED IN THE LAST 14 YEARS?**

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**Introduction:** Meningitis remains an important cause of morbidity and mortality in pediatrics, all over the world.

**Purpose:** With this study, the authors pretend to understand the evolution in the incidence, diagnosis and prognosis of meningitis, as well as the influence of the changes made in our national vaccination program over the last decades.

**Material and Methods:** A retrospective study was performed, with the analysis of clinical data from patients admitted in a Portuguese hospital with the diagnosis of meningitis, between 1-01-2002 and 31-07-2016. They were then divided in 4 groups: bacterial, viral, partially treated and aseptic meningitis. The data were analyzed with the program IBM SPSS® statistics (v. 20), significance level <0,05.

**Results:** A total of 207 patients were included, 145 (70%) of which were male, with a median age of 5 years (min. 1 month; max. 17 years). There were identified 18 bacterial meningitis (8,7%), 112 viral (54,1%), 15 partially treated (7,2%) and 62 aseptic (30,0%). Within the bacterial meningitis, 10 were caused by *Neisseria meningitidis* (4 from group B, 1 group C, 1 group W135, 1 group Y, 3 not identified), 5 by *Streptococcus pneumoniae*, 2 by *Streptococcus agalactiae* and 1 by non-typable *Haemophilus influenza* (Hi). The viral meningitis were caused by Enterovirus in 109 patients (97,3%) and by Varicella-zoster virus in 3 (2,7%). The last case of pneumococcal disease was in 2008. Meningococcal group C and Hi cases were identified respectively in 2007 and 2009. 9 patients were admitted to the Intensive Care Unit. 4 patients had sequelae (3 - epilepsy and psychomotor retardation; 1 - hearing loss), all with pneumococcal disease. No deaths were registered.

**Conclusion:** With the development of conjugate vaccines, initiated in the 90's, and posteriorly the anti-pneumococcal and anti-meningococcal vaccines, a significant decrease in the cases of meningitis by these agents was noted, which is reflected in this study.

**ID: 188 / PO1: 22**  
**POSTER**

**PREDICTORS OF CHRONIC IMMUNE THROMBOCYTOPENIA IN CHILDREN: A POPULATION BASED STUDY FROM QATAR**

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**Introduction:** Immune thrombocytopenia (ITP) in children is mostly a benign self-limiting illness, but close follow up and management is required especially in patients who develop chronic ITP.

**Purpose:** To identify possible risk factors for developing chronic ITP in children.

**Material and Methods:** A retrospective study was conducted which included only cases of previously healthy, newly diagnosed ITP, aged 0 to 14 years, admitted to the pediatric inpatient unit, in Hamad General Hospital, Doha, Qatar from January 2008 to January 2014. The risk for developing

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chronic ITP was evaluated using simple and multi-variable analyses. Chronic ITP was defined as thrombocytopenia (platelet count <100,000/micro-liter) that persisted beyond 12 months from the initial diagnosis.

**Results:** Of the total 76 patients admitted with ITP, 49 (64.5%) were acute cases while 27 (35.5%) were diagnosed as chronic ITP. The percentage of chronic ITP among children older than 10 years was 37.1% as compared to 6.2% among those 10 years or younger. The male to female ratio was similar in both groups. (1:1.2 for acute vs 1: 0.9 for chronic) Our study revealed that patients who went on to develop chronic ITP (23.3%) were less likely to present with a history of flu like symptoms as compared to those with acute ITP (76.6%). Notably, patients with chronic ITP had less severe thrombocytopenia than those with acute ITP at initial presentation, 72.7% of patients in the acute ITP group had platelets counts less than 5,000/micro-liter at admission as compared to 27.3% in the chronic ITP group. The platelet counts at discharge from hospital were found to be comparable between both groups. Upon analyzing the follow up platelet counts at 3-4 months from diagnosis, there was a significant disparity in the recovery of thrombocytopenia in both groups. 77.6% of the patients with acute ITP had a platelet count of more than 50,000/micro-liter as compared to only 22.4% patients in the chronic ITP group. This difference was found to be statistically significant (p value<0.001)

**Conclusion:** The percentage of chronic ITP in our study was higher than the 10- 20% quoted in literature. Our study concurs with known predictors of chronic ITP in children established from previous studies i.e. older age group, lack of preceding history of viral illness and a less severe platelet count at presentation. It also highlights that platelet counts below 50,000/micro-liter at 3 months follow up might be beneficial in distinguishing the subset of patients who will eventually develop chronic ITP. We recommend that physicians should take into account these risk factors when counseling parents upon diagnosis and follow up regarding the possibility of chronicity of ITP in their children.

**ID: 191 / PO1: 23**  
**POSTER**

**PREVALENCE OF OBESITY AND FACTORS INFLUENCING PARENTAL UNDERESTIMATES OF CHILD WEIGHT IN A SAMPLE OF CHILDREN LIVING IN GREECE**

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**Introduction:** Pediatric obesity prevention is an important public health priority. Parental perceptions of their children's weight play an important role in obesity prevention and treatment.

**Purpose:** To assess the prevalence of obesity in a sample of children living in Greece. To reveal the level of parental awareness about their children's overweight/obese status and to present factors influencing parental perceptions.

**Materials and Methods:** In this cross-sectional study, children's weight and height were measured according to standard methods. Children's Body Mass Index (BMI) was calculated. Children were classified as being overweight or obese by use of the Greek BMI-for-age curves. Overweight and obesity were determined with the use of the 85th and 95th percentiles respectively. All parents of children, who had been hospitalized in a Pediatric Department of a Tertiary University Children's Hospital in Attica, Greece, in 2009, were asked to fill in a specially structured questionnaire. Parents declared whether their children were overweight or obese. Kappa statistic was used to measure agreement between parental answers and children's weight status.

**Results:** A total of 600 children aged 0-17 years (mean age 5.14, SD 4.27 years) were recruited (RR 100%). Only 40 (6.7%) parents declared that their children were overweight, whereas 8 (1.3%) stated that their children were obese. On the contrary, according to the Greek growth charts, 88 (14.7%) and 55 (9.2%) subjects classified as overweight and obese respectively. Kappa coefficient (k) ranged from slight to fair agreement (0.01≤k<0.4). Parental awareness wasn't influenced by the level of their education or by their ethnicity. Importantly, mothers aged more than 30 years were more aware than the younger mothers.

**Conclusion:** The present study identified that parents underestimated their children's overweight/obese status regardless of their improved educational level, or their ethnicity, while increased maternal age had a positive effect. Despite global awareness of the increasing rates and a greater focus on weight in general, many parents remain unable to recognize when their own children are at risk. Further exploration is needed to conceive the causes in order to prevent pediatric obesity in our country.

**ID: 62 / PO1: 24**  
**POSTER**

**RISK-STRATIFYING POST-NEONATAL INFANTS LESS THAN 90 DAYS OLD WITH FEVER FOR MENINGITIC AND NON-MENINGITIC SERIOUS BACTERIAL INFECTIONS**

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**Introduction:** Fever in post-neonatal infants less than 90 days old often present with few focal symptoms and need to be investigated for suspected serious bacterial infections (SBIs). These infants can be categorised into non-meningitic SBIs, low-risk group and meningitic SBIs, high-risk group.

It is difficult to accurately pick up high-risk meningitic SBIs in the Children's Emergency. Established protocols exist for fever management in neonates, requiring a full septic work-up including blood, urine and cerebrospinal fluid cultures for possible meningitis with an immature blood-brain-barrier in babies less than 28 days old. For older infants, there lacks a consensus on managing fever with various guidelines such as Rochester, Boston and NICE being used with different inclusion criterion to decide on disposition status and subsequent management.

**Purpose:** To create a workflow to risk-stratify febrile infants from 28-90 days of age with fever for identifying meningitic SBI.

**Materials and Methods:** We have adopted a modified Rochester criteria (as attached) to screen all febrile post-neonatal infants less than 90 days old at our Children's Emergency and stratify them into high or low-risk for meningitic SBIs. This includes initial blood and urine screening. Only high-risk infants will need to be admitted for complete septic work-up to reduce unnecessary admissions and invasive investigations like lumbar punctures. Close follow-ups were given to all non-admitted infants with suspected SBIs. We compared three groups at different 6-month time



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points; before, during and after introduction of the guideline to monitor admission rates, lumbar puncture frequencies, adherence to guidelines and readmission rates for missed meningitic SBIs.

**Results:** Admission rates reduced from 100% in the pre-guideline group to 72% in the post-guideline group. Of the admitted patients, lumbar puncture frequencies remained similar with 50% in the pre-guidelines group and 54% in the post-guidelines group, mostly due to cultural reasons. No meningitic SBIs were missed using this guideline. Adherence rate to guideline principles at the Children's Emergency increased from 20% in the pre-guideline period to 72% in the post-guideline period.

**Conclusion:** A modified Rochester criteria was effective in reducing admission rates and treatment with IV antibiotics, thus reducing overall management cost of febrile post-neonatal infants less than 90 days old. Patient safety was not compromised as no cases of meningitis were missed though lumbar puncture frequencies were suboptimal. Further effort into improving communication to convince parents for lumbar puncture can be made. Such guidelines will be effective in small populations like Singapore where few patients are lost to follow-up.

**ID: 205 / PO1: 25**  
**POSTER**

**SEVERE ANEMIA IN ADOLESCENCE**

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**Introduction:** Iron deficiency anemia is common in adolescence, however hemoglobin levels <8g/dL are unusual and may have multiple etiologies.

**Case Report:** We present two cases of two adolescent boys, aged 13 and 16 years old, who went to the emergency department for asthenia, adynamia and dizziness with several months of progression and with impairment on daily live activities. The first adolescent had had, two years before, a diagnosis of severe iron deficiency anemia, with good response to oral iron therapy and no etiological investigation was made at the time. Analytically they had a hemoglobin of 6.8 g/dL and 7.3 g/dL; iron 1.4 umol/L and 1.1 umol/L; and ferritin 1.4 ng/mL and 1.5ng/mL, respectively. The etiological investigation found that the first teenager had a bleeding duodenal ulcer, without confirmation of *H. pylori* infection and the second had a *H. pylori* gastritis and celiac disease with positive anti-transglutaminase antibodies, anti-endomysium antibodies and HLA-DQ2. Both did intravenous iron therapy and posteriorly oral iron therapy. Treatment for eradication of *H. pylori* was also performed. The second teenager started a gluten-free diet. One year after the diagnosis both have no complaints, normal analytical parameters and no need of medical treatment.

**Comments/Discussion:** Severe iron deficiency anemia requiring intravenous iron is rare in adolescents, especially boys, and may be the first manifestation of gastrointestinal disease. An etiological investigation is essential when facing this type of anemia, even if there is clinical and analytical improvement after iron therapy. If we fail to treat the underlying pathology, prolonged or refractory anemia develops, with negative consequences on adolescent life, particularly on growth, physical capacity, psychomotor development and learning abilities.

**ID: 60 / PO1: 26**  
**POSTER**

**STATIC BALANCE IN SIX-YEAR-OLD BOYS AND GIRLS WITH NORMAL AND VALGUS FEET**

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**Introduction:** In early childhood a number of changes occur in the alignment of lower limbs and flat or valgus feet, affecting the quality of gait, mostly prevail.

**Purpose:** The study aimed to assess the effect of valgus feet on static balance in the six-year-olds.

**Materials and Methods:** A total of 537 children (calendar age 5.51-6.50yrs), including 240 boys (44.7%) and 297 girls (55.3%), participated in the study. Their body height was measured within 0.01cm and weight within 0.01kg, and their BMI categorised. The hindfoot alignment of the dominant leg was assessed by means of a goniometer, measuring the angular deviation between the tibial anatomical axis and the calcaneus longitudinal axis – the angle greater than 5o denoted hindfoot valgus. Static balance was assessed by means of modified Flamingo Balance Test. The time of maintaining balance in standing on the dominant leg on a wooden balance beam (50x3x4cm) was measured within 0.01s. Basic descriptive statistics, the Shapiro-Wilk, one way ANOVA and Wilcoxon tests were used for the analysis.

**Results:** Boys and girls did not differ significantly with their body height, weight and BMI. The mean time of maintaining balance in standing on one-foot on a balance beam was 1.92s in boys and 2.21s in girls. The difference was not statistically significant. Hindfoot valgus in the dominant leg prevailed in 63% of boys and in 50.5% of girls. In both genders, significantly better results in the Flamingo balance test were scored by children with normal foot alignment (Tab. 1).

**Conclusion:** Valgus feet prevailed in more than 50% of the six-year-olds. Boys and girls with valgus hindfoot demonstrated worse static balance than their peers with proper hindfoot alignment.

**ID: 210 / PO1: 27**  
**POSTER**

**THE PROVISION OF PAEDIATRIC RESUSCITATION TRAINING IN RURAL UGANDA AND THE IMPACT OF USING SIMULATION WORKSHOPS**

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**Introduction:** Neonatal and paediatric mortality remains high in low-resource settings. In Uganda the mortality rate of the under-5s is 66 per

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1000(1), failing to meet the targets set by the Millenium Development Goals. Paediatric resuscitation is therefore an important issue in low-resource settings with large scope for improvements. Previous teaching programmes have demonstrated that training reduces mortality.

**Purpose:** To gain a greater understanding of the current provision of paediatric resuscitation training in Uganda. 2. To introduce a resuscitation training programme in two hospitals in Uganda.

**Materials and Methods:** The setting for this multi-centre study was two hospitals near Masaka in central Uganda – Villa Maria and Kitovu Hospitals. Information on current resuscitation practice and training was established from the Maternity Register (rates of neonatal deaths and resuscitation at birth) and informal interviews with local staff. A training course was designed, focusing on newborn and paediatric basic life support and choking, and delivered to groups at both hospitals. Participants were asked to complete a survey before the training session rating their previous training and confidence in resuscitation. After the session they were again asked to rate their confidence.

**Results:** Overall 74% of participants had received previous training but over 90% of respondents felt that they should have more resuscitation training. Before the course 11% patients felt they did not feel confident in resuscitation. On completion of the course 100% of participants either agreed or strongly agreed with the statement: "I feel confident in my resuscitation skills". The group of participants who were previously unconfident all improved their confidence, demonstrating the success of the teaching. Regardless of previous training all respondents found the training helpful or very helpful. Participants in Kitovu hospital were more likely to rate the session 'very helpful'. This may be due to the smaller teaching groups (n=30 vs n=120) and demonstrates that practical skills are best learnt in small groups.

**Conclusion:** We have demonstrated that neonatal resuscitation is commonplace in Uganda, however knowledge of paediatric resuscitation is limited. The resuscitation training was very successful. Confidence in resuscitation skills after the training was universally improved. This supports the value of introducing similar programmes across low-resource countries. We propose facilitating this with the introduction of a 'train the trainer' course to ensure local support for the training programme.

**ID: 54 / PO1: 28**  
**POSTER**

**TRENDS IN MANAGEMENT OF GASTROESOPHAGEAL REFLUX DISEASE AND GASTROESOPHAGEAL REFLUX IN INFANTS AT HAMAD GENERAL HOSPITAL**

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**Introduction:** Gastroesophageal reflux (GER) is a common occurrence in infant. Differentiating gastroesophageal reflux disease (GERD) from GER is of paramount importance, to avoid unnecessary burden on both patients and the health system. The North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN) and the European Society for Pediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) have published guidelines for the diagnosis and management of pediatric (GER) in 2009 that addresses this issue. Several surveys conducted in North America and Europe on practicing pediatricians have shown poor adherence to the NASPGHAN/ESPGHAN guidelines; this has led to over-utilization of investigation and over prescription of acid suppressant medication.

**Purpose:** To review the current practices of managing GERD/GER in Hamad General Hospital, a tertiary care hospital in Qatar, in light of NASPGHAN/ESPGHAN guidelines.

**Methods:** Retrospective cross-sectional observational study. All medical records for infants diagnosed with GERD/GER aged 1 to 12 months, in the period between 2011 and 2014 were reviewed. Exclusion criteria included infants < 1 month, infants with cerebral palsy, neuromuscular, neurometabolic, chronic lung illnesses and preterm babies.

**Results:** We reviewed 374 cases, 161 fit inclusion criteria. Most of the infants included were less than 6 months; 64.6% aged 1-3 months and 24.8% 4-6 months. Commonest presenting symptoms were cough (49%), apnoea (26%) and vomiting (25.5%). To be noted 49.4% had a concurrent acute respiratory illness. 91.3% labelled as GERD, of those only (28) 18.9% had symptoms of GERD consistent with the Guidelines. GERD was diagnosed clinically in 21.7%, by barium study in 78.3%.

**Conclusion:** Our results reflect poor adherence to NASPGHAN/ESPGHAN guidelines in our center, with significant over diagnosis and treatment. This result is similar to what has been reported from North America and Europe. Educating physicians and setting a management protocol based on the guidelines is warranted to address this issue, as it imposes a significant burden on patients, families and hospital resources.

**ID: 112 / PO1: 29**  
**POSTER**

**VITAMIN D STATUS IN A PEDIATRIC PORTUGUESE POPULATION**

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**Introduction:** Besides the essential role in the regulation of calcium in the body, recent studies emphasize the role of vitamin D in several pathologies. Low status of this vitamin may be associated with an increased risk of disease. There are few Portuguese pediatric studies about vitamin D and the supplementation after the 1st year of life is not consensual. The authors proposed to determine vitamin D [25(OH)D] levels in a Portuguese pediatric sample and compare data to published works.

**Materials and Methods:** We selected children aging 5-17 years, between 1st of July 2015 to 30th of June 2016, observed in a pediatric outpatient clinic in north of Portugal. Anthropometric assessment was done as well as serum 25(OH)D and hemoglobin levels were measured. Children with pathology and/or therapy likely to impair the absorption of 25(OH)D were excluded. Cut-offs of vitamin D status: severe deficiency <10 ng/mL; deficiency [10-20] ng/mL; insufficiency [20-30] ng/mL and normal values ≥30 ng/mL.

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**Results:** A total of 124 children were studied, 80 were male. Eighty eight (71%) had inadequate vitamin levels: insufficiency in 51,6% (n=64), deficiency in 17,7% (n=22) and severe deficiency in 1,6% (n=2). Only 29% had appropriate values. No one had values <5 ng/mL which could suggest increased risk of osteomalacia/rickets. The study was balanced throughout the year, without season predominance. In this sample, 58,9% (n=73) were normal weight children, 19,4% (n=24) were overweight and 21,8% (n=27) were obese. Anemia was not found in those with hypovitaminosis D. All of these were supplemented.

**Conclusion:** This study shows high prevalence of hypovitaminosis D, superior to other studies. These data alert to a real, easy to handle problem, yet hard to detect without serum measurement. Early detection of low levels will bring health gains and prevent disease, given the diversity of functions of vitamin D.

**ID: 59 / PO1: 30**  
**POSTER**

**WHAT ARE THE BARRIERS TO ERADICATING DEATHS IN CHILDREN FROM PNEUMONIA AND DIARRHOEA BY 2025? A STUDY OF TWO PRIVATE NOT-FOR-PROFIT HOSPITALS IN RURAL UGANDA.**

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**Introduction:** Pneumonia and diarrhoea cause 24% of deaths in young children worldwide (WHO). Carrying on the efforts of Millennium Development Goal 4, the WHO's Global Action Plan for Pneumonia and Diarrhoea (GAPPD) aims to eliminate preventable childhood deaths from these diseases by 2025, by utilising a series of accessible and effective interventions.

**Purpose:** We sought to a) quantify the uptake of these interventions and b) identify any reasons why these interventions are not fully employed at two rural hospitals in Uganda where these diseases cause 38% of childhood deaths.

**Materials and Methods:** During a 2-week period 30 children (age 2m-12y) admitted with pneumonia or diarrhoea and their mothers were interviewed about: breastfeeding, immunisation, vitamin A supplementation, complementary feeding, sanitation, household air pollution, overcrowding and HIV prevention. Child health cards and hospital records confirmed vaccination and HIV statuses.

**Results:** 76% of mothers exclusively breastfed for the first 6 months, 44% continued breastfeeding until 1 year, nobody received the rotavirus vaccination, 63% of children were otherwise up-to-date with immunisation schedules for their age, 46% received biannual vitamin A supplements, 3% of houses cooked with clean fuels, and 96% reported having handwashing facilities at home. The commonest reason for prematurely stopping breastfeeding was perceived insufficient milk supply. Reasons for low vaccination coverage included parental ignorance, low stock and forgetting repeat doses. This study also identified HIV stigma, poor handwashing and inadequate use of child health cards within both hospitals.

**Conclusion:** In order to reduce child mortality further, efforts to implement interventions highlighted by the GAPPD should increase. This will be challenging within low-resource rural settings, but can be partly achieved by better education with regards to vaccination, breastfeeding, nutrition, HIV and hygiene.

**ID: 159 / PO1: 31**  
**POSTER**

**“KETOACIDOSIS, NOT ALWAYS DIABETIC...”**

**Sara Vaz<sup>1,2</sup>, Filipa Jalles<sup>1</sup>, Rita Espírito Santo<sup>1</sup>, Leonor Boto<sup>1</sup>, Joana Rios<sup>1</sup>, Cristina Camilo<sup>1</sup>, Francisco Abecasis<sup>1</sup>, Marisa Vieira<sup>1</sup>**

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**Introduction:** Metabolic acidosis is divided into processes associated with a normal or an elevated anion gap (AG). The high AG occurs when unmeasured anions are added to the blood. In children, the most common cause of an elevated AG is diabetic ketoacidosis, however, when the clinical history is not clear, other causes must be considered.

**Case description:** Nine month-old healthy girl transferred to our paediatric intensive care unit due to severe metabolic acidosis. On admission she presented with Kussmaul breathing, tachycardia, irritability and fever. The infectious parameters were negative. Blood gases revealed metabolic acidosis with superimposed respiratory alkalosis and elevated AG. Fluid replacement and bicarbonate for urine alkalinization were started. Ketonaemia, acid urine with glycosuria, ketonuria and high blood glucose prompted an insulin infusion. Measurement of plasma salicylate confirmed toxic levels (76mg/dL). After confronting the parents they admitted having accidentally prepared the child's bottle with water containing 1000mg of salicylic acid. Clinical deterioration occurred in the first 24 hours despite urine alkalinization and decreasing salicylate levels with pulmonary oedema, seizures and oliguria. Continuous venovenous hemodiafiltration was started, plasma salicylates became undetectable, but hiperglycaemia and ketonaemia persisted until 72 hours, requiring insulin infusion. On day 4 she was transferred back to the referring hospital with normal clinical and laboratory parameters.

**Discussion:** Even though salicylate intoxication incidence has declined, it is the only cause of high AG metabolic acidosis and respiratory alkalosis and an important cause of paediatric morbidity and mortality. Other pathophysiological effects include interference with glucose homeostasis, central nervous system toxicity and hyperthermia. As described in the literature, life-threatening complications occurred when plasma concentrations were decreasing and near-therapeutic.

**ID: 231 / PO1: 32**  
**POSTER**

**THE VARICELLA ZOSTER VACCINE: IS THE DECISION NOT TO ROUTINELY INCLUDE IT IN UK CHILDREN'S VACCINATION SCHEDULE STILL JUSTIFIED?**

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**Introduction:** The World Health Organisation recommends that every child receive the varicella zoster vaccination, and yet the UK has decided

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that only children who are immunocompromised or live with immunocompromised individuals should be eligible for this. This poster explores the justification behind this.

**Purpose:** This poster will consider generally the purpose of widespread childhood vaccinations and evaluate specifically why the varicella zoster vaccination has been excluded within the UK.

**Materials and Methods:** Evaluates the evidence base determining this decision, alongside expert opinion and contrasting this with other countries' decisions and their justifications.

**Results:** An individual country's decision to include or exclude a vaccine, although evidence-based, is influenced by social, demographic and cultural values of that country. Within the UK this has decision has been made in the wake of the MMR vaccine scare, and perhaps thus influenced by such events and the following cultural shift in attitude towards vaccines. Additionally, restraint of this vaccination is believed to reduce the risk of adulthood chickenpox and shingles, which is typically more clinically serious than the milder childhood form.

**Conclusion:** The evidence base and cultural considerations for not routinely including the varicella zoster vaccination, whilst understandable, are not wholly justifiable here.

**ID: 217 / PO1: 33**  
**POSTER**

**BLOODSTREAM INFECTIONS IN CHILDREN AT KAROLINSKA UNIVERSITY HOSPITAL. THE IMPORTANCE OF CONTINUED SURVEILLANCE**

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**Introduction:** The aetiology of bloodstream infections changes over time due to factors like updates in Immunisation programmes, new preventive strategies changes in patient's composition. We have at our institution an ongoing surveillance on the aetiology of bloodstream infections for decision making according to empiric antibiotic therapy. We could in 2015 report a reduction of infections caused by *S. pneumoniae*, group B streptococcus and a persistence of *S. aureus* as the most frequently isolated pathogen. We have now extended our survey.

**Purpose:** Evaluate the trends in the aetiology of blood stream infections after introduction of immunization and preventive strategies.

**Materials and Methods:** Retrospective analysis of positive blood culture in children up to 17 years of age at Karolinska University hospital during the period 20130701-20160630.

**Results:** During the period 290 blood cultures with generally accepted pathogens were identified. *S. aureus* was found in 99 (30 %) and was regardless of age or risk group the most frequently isolated pathogen. Among previously healthy children *S. aureus* infections were without exception combined with localized symptoms from skin, bone, joints or lung. In neonates and in children with underlying disease *S. aureus* was associated with an intravascular device or surgery but not with a focal infection. *S. pneumoniae* was isolated in only five children, none of those belong to the former high incidence group of children one to five years of age. *S. pyogenes* was identified in 5.5 % of the cultures compared to 2 % during the preceding 10 years' period. We observed an increased in early-onset sepsis caused by group B streptococcus after the earlier promising decrease observed. 90% of the children with early-onset infections had delivery that meet criteria for, antibiotic prophylaxis though only 20 % of the mothers received antibiotic prophylaxis. Antimicrobial resistance to erythromycin occurred in 3/24 (12.5 %) isolates of group B streptococcus. Methicillin resistant *S. aureus*, MRSA, and *S. aureus* resistant to clindamycin was found in 2% and 7% respectively

**Conclusion:** *S. aureus* continued to be the most frequent isolated pathogen. Immunization against *S. pneumoniae* continues to reduce the incidence of invasive pneumococcal disease. Coincidental *S. pyogenes* infections have increased. The increase of early-onset group B streptococcal disease could hypothetical be caused by a lack of adherence to guidelines for intrapartum antibiotic prophylaxis.

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**POSTER**

**COMBINED TREATMENT WITH DOXYCYCLINE AND PREDNISOLONE ON CHILD REFRACTORY MYCOPLASMA PNEUMONIAE PNEUMONIA: A CASE REPORT.**

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**Introduction:** *Mycoplasma pneumoniae* is one of the most important pathogen causing respiratory tract infection in children. In general, *Mycoplasma pneumoniae* infection is usually mild illness and self-limited disease. However, it may develop into life-threatening in rare case, such as refractory pneumonia, acute respiratory distress syndrome, necrotizing pneumonitis. Refractory mycoplasma pneumoniae may be associated to macrolide resistance and excessive host immune response.

**Case report:** A 3 years old boy was admitted with fever, non-productive cough. Physical examination revealed coarse breath sound without signs of respiratory distress. On hospital day 1, complete blood count and biochemistry tests were within normal limits and negative *Mycoplasma pneumoniae* IgM. Chest X-ray revealed increased density over right lower lung zone. Azithromycin was used with 10 mg/kg/day since hospital day 1. The disease showed completely unresponsive to Azithromycin. Clinical condition progressed as showed in persisted fever, progressively deteriorated respiratory condition. Blood tests showed as followed: total leukocyte count 5280/uL with band 17%, neutrophil 56%, lymphocyte 19%, C-reactive protein (CRP) 7.11 mg/dL, lactate dehydrogenase (LDH) 803 IU/L, Alanine aminotransferase (ALT) 125 U/L positive mycoplasma pneumoniae IgM. Chest X-ray deteriorated with increased density over right middle and lower lung zone and obscure right C-P angle. Antibiotic was changed to doxycycline 4mg/kg/day, twice a day. After 3 days treatment of doxycycline, his fever pattern revealed obviously improvement. Blood test showed LDH 803 IU/L, Ferritin 382 ng/mL, erythrocyte sedimentation rate (ESR) 37 mm/

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hr. PCR detected A2063G mutation. Prednisolone 0.5mg/kg/day was started since then. On the next day, his respiratory pattern revealed remarkable improvement. On the 14th day in hospital, blood testes showed obviously improvement as results as followed: LDH 415 IU/L, ALT 50 U/L, Ferritin 148 ng/mL. No pleural effusion was seen under chest sonography. He was discharged on that day and prednisolone was discontinued since then.

**Conclusion:** Increasing prevalence in macrolide-resistant mycoplasma pneumoniae (MRMP) has been reported in recent years. Doxycycline may be the choice for MRMP. Excess immune response may be correlated to the progression of refractory mycoplasma pneumoniae pneumonia (RMPP). Systemic corticosteroid may be considered with combination treatment in the patient of RMPP.

**ID: 148 / PO1: 35**  
**POSTER**

**COMPARISON OF THE QUIKREAD GO CRP POINT-OF-CARE TEST TO ROCHE, SIEMENS ADVIA AND AFINION CRP-TESTS**

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**Introduction:** The QuikRead go® CRP test is intended for quantitative determination of C-reactive protein (CRP) in whole blood, serum and plasma using the QuikRead go® instrument. CRP is an acute phase protein present in low concentrations in healthy individuals. Pathological conditions associated with invasive bacterial infection, inflammation or tissue destruction are accompanied by elevation of the CRP level. The rise in CRP concentration is rapid, and increased levels can be detected within 6 to 12 hours from the onset of the inflammatory process. Quantitative measurement of CRP concentration has been reported to be a sensitive indicator in the follow-up of the antimicrobial therapy and the course of bacterial infections. It is also an effective tool in controlling and monitoring postoperative infections.

**Purpose:** The performance of the QuikRead go CRP test was compared against two commercially available clinical chemistry CRP analysers and one POC CRP test.

**Materials and Methods:** Whole blood samples were used with the QuikRead go CRP test and plasma samples from the corresponding whole blood samples were analysed with Roche Modular CRPL3 reagent and with Siemens CRP Wide range assay on Advia 1800 Clinical Chemistry System. With Afinion CRP POC test, whole blood samples were used.

**Performing the QuikRead go CRP test:** The sample is added into a cuvette and closed with a reagent cap. The cuvette is placed into the QuikRead go instrument, which automatically measures CRP in two minutes. The sample volume is 20 µl and the measurement range is 5–200 mg/l with whole blood and 5–120 mg/l with serum/plasma samples. The system automatically detects the sample type and the whole blood CRP value is corrected based on the hematocrit level of the sample. The correlation results were calculated using Passing & Bablok analysis.

**Results:** The correlation of the QuikRead go CRP whole blood samples to corresponding plasma samples determined with the Roche CRPL3 CRP test was  $y=0.98x-0.99$ ,  $r=0.99$  ( $n=62$ ) and to the Siemens Advia CRP test  $y=0.94x-0.80$ ,  $r=0.99$  ( $n=61$ ). The correlation of the QuikRead go CRP test to the Afinion CRP test with whole blood samples was  $y=1.05x+1.7$ ,  $r=0.99$  ( $n=59$ ).

**Conclusion:** The QuikRead go CRP test correlated very well with the Roche CRPL3 CRP test, with Siemens Advia CRP test and with the Afinion CRP test. The study shows that the QuikRead go CRP test is robust and gives reliable results.

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**POSTER**

**EXTENDED CEREBRAL VENOUS SINUS THROMBOSIS (CVST) IN A CHILD A RARE COMPLICATION OF RECURRENT OTITIS MEDIA (ROM)**

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**Introduction:** Cerebral venous sinus thrombosis (CVST) is a serious disorder with reported incidence 0.67 cases / 100.000 children / year. Masked (subacute) mastoiditis refers to low grade but persistent infection in the middle ear and mastoid, occurring in patients with recurrent otitis media (ROM). Rarely it presents with intracranial complication as CVST.

**Purpose:** We hereby present a case of a previously healthy 5-year-old girl with CVST complicating ROM.

**Materials and Methods:** The patient presented in the Accident and Emergency Department with two days' history of high grade fever, vomiting, otalgia and progressive lethargy. She had history of ROM during the last six months rhinitis since 20 days. Physical examination: malaise, decreased level of consciousness, right middle ear effusion. Cranial CT: inflamed right mastoid, inflammation of the right sphenoid sinus. No abnormal cerebrospinal fluid findings. The patient was treated with ceftriaxone plus clindamycin. However, she remained lethargic with severe headache and she underwent a brain MRI which revealed thrombosis of the right lateral and sigmoid sinuses extending to the jugular bulb and internal jugular vein as well as in the lower part of the upper sagittal sinus. The patient was admitted in the paediatric intensive care unit where she was treated with vancomycin, piperacillin – tazobactam and anticoagulants (low molecular weight heparin followed by warfarin for a total of 3 months).

**Results:** Thrombophilia screen (C & S proteins, factor VIII, antithrombin III, factor VLeiden, prothrombin mutation 20210, homocysteine) as well as ANA, thyroid function tests, immunoglobulins and antiphospholipid antibodies were normal. The patient recovered fully and at follow-up, fifteen months later, she had no neurological sequelae and no recurrent thrombotic episodes.

**Conclusion:** Masked mastoiditis and CVST should be considered in children with ROM and signs of intracranial infection. Magnetic Resonance Imaging is superior to Computerized Tomography in revealing this pathology. Early diagnosis and prompt treatment may prevent severe neurological sequelae and death.



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**POSTER**

**INFECTION-RELATED HOSPITALISATIONS IN REFUGEE CHILDREN – A ONE YEAR STUDY FROM NORTHERN STOCKHOLM**

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**Introduction:** Because of the unrest in the Middle East and Central Asia, there was a large influx of refugees arriving in Sweden in the autumn 2015. Among the refugees, children and adolescences made up a considerable part. European public health authorities issued guidelines regarding risks and management algorithms for imported infectious diseases. However, few reports have been published on the actual burden of infectious diseases in refugee children.

**Purpose:** We sought to investigate the cause of hospitalizations in refugee children with a specific aim at reporting hospitalizations caused by infectious diseases.

**Materials and Methods:** From all hospitalizations, infectious diseases were identified by using ICD-10 codes A, B, G00, H60-70, J03-86, L00, M00, M86 and N10. Asylum seeking children and adolescences can be identified since they are provided with a reserve number, which is temporary and used only for the health care system instead of a Swedish personal identity number. All hospitalized children and adolescence with a reserve number and an infectious diseases diagnosis were identified.

**Results:** We found 8706 hospitalizations in children < 15 years. Of these, 2513 (29%) were diagnosed with an infectious disease. Of the 8706 admissions, 296 were asylum-seeking children and 129 of those had an infectious disease (44%). 3 children <15 years had tuberculosis, 9 had varicella zoster, 6 had influenza and 1 had pulmonary echinococcus cyst. In adolescents > 15 years 442 admissions were identified. 17 % had an infectious disease. Among hospitalized asylum seeking adolescents > 15 years, 34 (60 %) had an infectious disease. 28 had proved or suspect TB, 2 had Malaria, 2 had invasive pneumococcal disease and 1 had relapsing fever (*Borrelia recurrentis*). Asylum seeking children and adolescents with an infectious disease diagnosis were older than non-asylum seekers.

**Conclusion:** Asylum seeking children and adolescents are more likely to be hospitalized because of an infectious disease compared to other children. In adolescents, tuberculosis is the dominant cause of hospitalization. In younger children, influenza and varicella zoster dominated. One possible explanation for this is the crowded living conditions that followed the sudden rise in immigration. On the other hand, infections common in infancy, like RSV, was rare in asylum seeking infants. This is likely due to the low numbers of infant asylum seekers and low numbers of infants born to asylum seeking parents.

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**POSTER**

**NOBODY EXPECTED LISTERIA**

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**Introduction:** *Listeria monocytogenes* is a gram-positive, rod-shaped bacterium that is ubiquitous in the environment. The ingestion of contaminated food is the main source of infection in humans. Listeriosis is a rare but severe disease, and only a small portion of all *Listeria* meningitis cases occur in immunocompetent children beyond the neonatal period.

**Clinical case:** A previously healthy six months old boy, with normal growth and development was hospitalized due to high fever and drowsiness. The physical examination was otherwise normal. The laboratory results and lumbar puncture suggested acute meningitis and ceftriaxone was administrated as empiric treatment. His clinical condition did not improve after 48 hours, and he developed lower limb edema and right abducens nerve palsy. Transfontanelar ultrasound showed signs of meningitis. The cerebral spinal fluid culture was positive for *Listeria monocytogenes* so the treatment was changed to a combination of ampicillin and gentamicin. There were clinical and laboratorial improvements afterwards, with resolution of the abducens nerve palsy. The patient was discharged after 21 days of treatment. Epidemiologically, the source of the infection remained unclear. The results of the diagnostic immunological investigation were normal and brain MRI scan showed a frontal anterior left subdural collection with 5 mm. Presently, at 12 months age, the growth and neurological development are adequate.

**Conclusion:** *Listeria monocytogenes* meningitis is rare in immunocompetent post neonatal children. As treatment differs considerably from other causes of meningitis, an accurate and timely diagnosis can have a great impact on the final outcome.

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**POSTER**

**PREVALENCE AND RISK FACTORS FOR LATENT TUBERCULOSIS INFECTION AMONG CHILDREN IN CONTACT WITH PULMONARY TUBERCULOSIS PATIENTS**

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**Introduction:** Tuberculosis remains an important determinant of morbidity and mortality worldwide. It also has a high incidence in Thailand. One-third of the population has latent tuberculosis infection (LTBI) which develops into an active disease in 5-10% of cases. Early detection and treatment may decrease the rate of morbidity and mortality.

**Objective:** To determine the prevalence and risk factors of LTBI among children in contact with pulmonary tuberculosis patients.

**Materials and Methods:** A cross-sectional study was performed between April 2015 and May 2016 among children aged less than 15 years who attended the outpatient clinic at Songklanagarind Hospital and had contact with pulmonary tuberculosis patients. The investigation used an interview

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questionnaire, physical examination, tuberculin skin test (TST), and chest x-ray. LTBI was defined as positive TST (size 10 mm or more) in the absence of tuberculosis disease.

**Results:** Of the 91 exposed children, 5 (5.5%) were excluded from the analysis due to diagnosed as tuberculosis disease. Of the remaining 86 children, the mean age+SD was 6.3+3.9 years and 48 (55.8%) were female. Fifty-six percent were household contacts. Among the 58 index tuberculosis cases, 69% presented with cough and 67.2% had positive sputum AFB stains. Sixteen children (16/86, 18.6%) were diagnosed as LTBI. Factors independently associated with LTBI were older children (odds ratio [OR] 1.01, 95% CI 1-1.03), parents as index cases (OR 5.39, 95% CI 1.45-19.97), and more family members (OR 2.09, 95% CI 1.21-3.63).

**Conclusion:** Children in contact with tuberculosis patients are at risk of LTBI. Contact investigations are beneficial to identify these cases. Our study showed that the risks of LTBI increased with older age, exposure to parents with tuberculosis, and more family members. Chemoprophylaxis should be given promptly to LTBI children to reduce the risk of tuberculosis disease.

**ID: 165 / PO1: 40**  
**POSTER**

**STAPHYLOCOCCUS EPIDERMIDIS IN URINE CULTURE - ALWAYS CONTAMINATION?**

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**Introduction:** The vast majority of urinary tract infections (UTI) in children are caused by Gram-negative bacteria, such as *E. coli*. UTI by gram-positive bacteria are less common, and they include *Enterococcus* and *Staphylococcus saprophyticus*. The isolation of *Staphylococcus epidermidis* (SE) in urine culture is a rare event and this bacterium is often assumed to be a contaminant.

**Case report:** We report the case of a 5-year-old male with a medical history of complex uropathy, recurrent UTI with renal scarring and bladder dysfunction. Usual medication: co-trimoxazol and oxybutynin. He went to the Pediatric Emergency Department after 6 days of fever and dysuria. His physical examination was unremarkable. A midstream urine sample was collected. Urine was nitrite positive, and there were 20 leukocytes per high-power field in the sediment. Laboratory tests showed leukocytosis with neutrophilia and CRP elevation. Acute pyelonephritis was assumed and he was treated with cefuroxime axetil. He was intolerant to oral therapy and therefore admitted. A SE was isolated in urine culture (with > 100.000 colony forming units per mL), which was interpreted by the laboratory as contamination. Given the past medical history, clinical presentation and laboratory results it was assumed that the SE isolated was indeed pathogenic. The antibiotic was changed to amoxicillin/clavulanate. The same agent was later identified in blood culture, reinforcing our diagnosis. Our patient completed 8 days of treatment and his clinical and analytical evolution was satisfactory.

**Conclusion:** SE is an unusual UTI agent and there are few reported cases. Its isolation in urine and blood cultures should not be disregarded, particularly in patients with known uropathy. This agent may be an overlooked cause of UTI and potential invasive disease in children.

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**POSTER**

**WHOOPIING COUGH – THE REALITY OF A PORTUGUESE PAEDIATRIC TERTIARY HOSPITAL**

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**Introduction:** The whooping cough is an infection of the respiratory tract caused by *Bordetella pertussis* that can affect both children and adults.

**Purpose:** This study intends to characterize epidemiologically and clinically the paediatrics cases admitted with whooping cough in a third level hospital.

**Materials and Methods:** Data from the 1st January 2004 to the 30th June 2016 of 90 PCR-positive for *Bordetella pertussis* in nasopharyngeal secretions cases was retrospectively analysed for epidemiologic, clinical and laboratorial variables associated with this disease.

**Results:** Of the 90 children that were admitted, 76,7% were less than 4 months old. Cough was the most common symptom, present in 93,3% of patients. The number of hospitalizations was higher in 2012 and 2015, especially during the spring and the summer. The parents were the most probable cause of infection (50,0%). 10,0% of patients had a viral co-infection. 53,3% of the patients were not vaccinated for *Bordetella pertussis* and 36,7% had incomplete immunization. The average duration of hospitalization was 9 days. 12 patients had to be admitted to the Intensive Care Unity, 3 of which needed invasive ventilation. All patients were treated with macrolids.

**Conclusion:** The age group of less than 4 months old seems to be more vulnerable. Closed contacts are an important cause of infection of this particular group. The whooping cough appears to be resurfacing in cycles of 3-4 years, which is in line with international and national data. The cause of this disease is multifactorial, so it is essential to investigate better ways to control its morbidity and mortality. A vaccine for pregnant women will be introduced next year in Portugal.

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**POSTER**

**ERITEMA AB IGNE- A CLINICAL CASE**

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**Introduction:** Erythema ab igne is a rare reticulate pigmented dermatosis caused by prolonged heat exposure. This condition has been associated with the use of stoves, open fires or laptop computers. The initial signs are a mild localized macular erythema in the exposed areas, which, with chronic exposure to heat, become livid and hyperpigmented. If the exposure to heat persists the appearance of bullae can occur.

Histological findings of the lesions include, initially, epidermis atrophy and vasodilation and, later, hyperkeratosis and pigment incontinence. Eliminating the source of heat leads to the resolution of symptoms. For prolonged and repeated exposure there is a higher risk of permanent damages such as thermal keratosis or even squamous cell carcinoma.

**Clinical Case:** A healthy fifteen-year-old girl presents to the emergency department with a reticulate erythema on the lower limbs. The symptoms started 3 days earlier with a mild erythema in the external surface of the right leg that evolved into a hyperpigmented reticulate erythema. Afterwards the same erythema appeared in the internal surface of the left leg. On the day she presented to the emergency department she noticed swelling of the right leg with a burning sensation. No other abnormalities were found. Further enquiry revealed the use of a steam radiator near the legs for the past two months. Avoidance of heat exposure was recommended as well as skin hydration. In reevaluation, the erythema had diminished with resolution of the edema and burning sensation.

**Conclusion:** Erythema Ab Igne is a skin condition caused by close and repeated exposure to a source of heat. Although it is no longer a common condition is must be taken under consideration when the typical symptoms are present and there is history of direct exposure to a heat source.

**ID: 56 / PO1: 43**  
**POSTER**

**STATUS OF VITAMIN D OF TEENAGE GIRLS IN WINTER**

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**Objectives & Study:** Our study was performed to assess of blood serum levels of 25-OHD of teenage girls in a winter season.

**Methods:** The study included 100 adolescents (mean age  $14.3 \pm 2$  years). Estimation of blood serum levels of 25-OHD was conducted by immunochemiluminescent analysis. Vitamin D significant deficiency was defined as 25-OHD below 10 ng/mL; deficiency was defined as 25-OHD of 10 – 20 ng/mL; insufficiency as 25-OHD of 21 – 29 ng/mL; and sufficiency as 25-OHD of 30 – 50 ng/mL.

**Results:** Analysis of the results showed a 100% prevalence of low vitamin D status in all the surveyed adolescent girls. The deficiency of 25-OHD was 71% ( $13.8 \pm 2.8$  ng / ml), significant deficiency - 25% ( $7.8 \pm 1.2$  ng / ml) and insufficiency - 4% ( $22.1 \pm 1.4$  ng / ml) of adolescents. All of the adolescents were observed did not have sufficiency of 25-OHD. Clinically low vitamin D status in adolescent girls was characterized by frequent incidence of acute respiratory infections - 23%, a metabolic disorder of bone - 48%, osteoporosis - 6%, reduced growth rates - 16%, overweight and obesity - 7%, hypertension - 6%.

**Conclusion:** The study showed a high prevalence of vitamin D deficiency among adolescents. The results dictate the need for correction of low vitamin D status with dynamic control of 25-OHD levels in the serum of teenagers.

**ID: 120 / PO1: 44**  
**POSTER**

**AGE AT PLACEMENT IN ADOPTION: HEALTH EFFECTS IN ADOLESCENTS**

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**Introduction:** Abuse, maltreatment and neglect are examples of early adversity that have an impact on child development. Studies of children and adolescents in the child welfare system have traditionally focused on their mental health problems. However, we know little about their health in terms of a more wide and integrated view of health including physical, mental and social wellbeing. Ample research has documented an improvement when the child enters the new family, as well as changes over the following years. However, most of what is known about adoption refers to adopted children and, in comparison, adolescence is an under-researched area. Nevertheless, adolescence is an important developmental stage as it entails critical changes physical, cognitive and social changes.

**Purpose:** The aim of this study is to analyse the relationship between age at placement and health in a sample of adopted adolescent from an integrated perspective of health that includes subjective measures. Differences associated to the birth area are also explored.

**Materials and Methods:** The sample was selected as part of the 2014 Spanish edition of the Health Behaviour in School-aged Children (HBSC) study. The questionnaire was answered by 394 adopted adolescents aged 11 and 18 years (47.5% boys and 52.5% girls; 39.3% domestic adoption and 60.7% intercountry adoption). Instruments included Cantril's Ladder for Life Satisfaction, Kidscreen-10, Self-Reported Health, the HBSC-Symptom Checklist for Psychosomatic Complaints and the SOC-13 scale for sense of coherence. Mean comparisons and effect size tests were used to compare adolescents adopted before the age of 2 years and adolescents adopted after that age.

**Results:** Data analysis showed significant differences between adolescents adopted before the age of 2 years and adolescents adopted after that age in life satisfaction ( $p = .039$ ). According to the birth region, significant differences were found in life satisfaction ( $p = .005$ ) and self-reported health ( $p = .046$ ), with the highest effect size being found for the comparisons between Spain and Asia in life satisfaction ( $d = .34$ ) and self-reported health ( $d = .41$ ).

**PO1: POSTER PRESENTATIONS: SESSION 1**

**Conclusion:** Findings show how the developmental trajectory, marked by early adversity and the subsequent change of context that adoption involves affects health and wellbeing. Specifically, earlier age at placement was associated with a higher life satisfaction. Furthermore, intercountry adopted adolescents have a better health and wellbeing than domestic ones, probably due to the special situation in the Spanish welfare system.

**ID: 233 / PO1: 45**  
**POSTER**

**INTENTION TO USE EMERGENCY CONTRACEPTIVE PILLS OF FEMALE STUDENTS IN A COLLEGE OF PATHUM THANI PROVINCE, THAILAND**

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**Introduction:** The problem of teenage pregnancy continues to exist around the world. In 2013, the global rate of live births by teenage mothers aged 15-19 years around the world was 48.9 per 1,000 of female teenagers, while being 42.5 per 1,000 of female teenagers in Southeast Asia. Thailand was ranked the second in the region, and has been growing. In 2000, the rate of live births by teenage mothers was 31.1 per 1,000, but was 47.9 per 1,000 in 2014. According to the Bureau of Reproductive Health of Thailand, the rate of vocational diploma students experiencing sexual intercourse was higher than other groups and 90.0% used condoms or emergency contraceptive pill (ECP). The researcher realized the intention to use ECP of female students is essential. It could determine and predict the ECP use behaviors of teenagers.

**Purpose:** To study the intentions to use and the factors associated with an intention to use emergency contraceptive pills of female students in a college in Pathum Thani province, Thailand.

**Materials and Methods:** By applying the "Theory of Planned Behavior" of Ajzen. Studied samples included 207 female students aged 18-24 years. Data were collected by a self-administered questionnaire in March 2016. The 84-items questionnaire inquiring demographic data, knowledge about ECP, attitude toward ECP use, peer influence, perceived ability to control ECP use behavior, and the intention to use ECP. Data were analyzed by percentage, mean, standard deviation, Chi-square test, One-way ANOVA, and independent t-test.

**Results:** About 68.6% of female students were aged less than 20 years (average age is 18.97 years), more than half (54.6%) had a low intention of using ECP. Unprepared to have sex was the highest reason to use ECP; on the other hand, the lowest intention was in cases with multiple partners. Knowledge about the ECP was significantly correlated with an intention to use ECP among the female students ( $p$ -value=0.003). More than half (54.1%) had a poor level of knowledge about ECP. Most were not aware of the ECP precautions and side effects (ectopic pregnancy, miscarriage, etc.). Peer influence was significantly correlated with an intention to use ECP ( $p$ -value=0.001).

**Conclusion:** The findings can be used in the development of guidelines for providing female students with proper knowledge about ECP, especially precautions and side effects. Creating leaders for giving consultation, attention, and providing information on the ECP so as to acquire accurate information and reduce the misuse of medicine.

**ID: 237 / PO1: 46**  
**POSTER**

**ASSOCIATION BETWEEN RELATIONAL BULLYING AND HEALTH RELATED QUALITY OF LIFE AMONG ENGLISH ADOLESCENTS**

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**Introduction:** Bullying is a relatively common occurrence in schools worldwide. Bullying behaviours can be broadly categorised into physical, verbal, relational and cyber. Relational bullying describes behaviours which cause harm to the victim through the systematic manipulation and destruction of peer relationships. Fewer studies have examined the health outcomes associated with the specific sub-type of relational bullying.

**Purpose:** The purpose of this study is to examine the association between adolescent's experience of relational bullying and health related quality of life (HRQL) whilst controlling for confounding variables.

**Materials and Methods:** The present study draws on data from 5335 young people aged 11-15 years who participated in the 2014 English Health Behaviour in School-aged Children (HBSC) study. Data was collected through self-completed questionnaires. A multilevel regression model examined the association between experiencing relational bullying and adolescent HRQL, whilst controlling for physical and verbal forms of bullying and demographic factors (age, gender, ethnicity, socio-economic status). Relational bullying was assessed via three items measuring different relational bullying behaviours, with young people categorised into no victimisation, monthly or weekly victimisation. HRQL was measured via KIDSCREEN-10 which generates an overall score, with higher scores indicative of positive HRQL.

**Results:** In all, 16.6% of respondents reported experiencing relational bullying in the previous two months. Girls were slightly more likely than boys to report being victimised in this way; 19.7% of girls compared with 13.7% of boys. Relational bullying was associated with a significant decrease in KIDSCREEN-10 score. Young people who reported weekly relational bullying had an estimated 5.352 (95% confidence interval (CI), -4.178, -6.526) decrease in KIDSCREEN-10 score compared with those not experiencing relational bullying. The association between relational bullying and KIDSCREEN-10 score was equal for girls and boys. Weekly verbal bullying was associated with an estimated 2.446 (95% CI, -1.21, -3.682) decrease in KIDSCREEN-10 score. There was insufficient evidence to demonstrate an association between physical bullying and HRQL.

**Conclusion:** The current study demonstrates relational bullying is associated with poorer HRQL. The negative association with HRQL is the same for both girls and boys, questioning the perception of this behaviour as a predominantly female problem. The findings suggest relational bullying may be the most harmful form of victimisation, with relational bullying associated with a greater estimated decrease in KIDSCREEN-10 score than physical and verbal bullying combined.

**PO1: POSTER PRESENTATIONS: SESSION 1**

**ID: 174 / PO1: 47**  
**POSTER**

**CONTRIBUTION OF DIFFERENT SOCIOECONOMIC INDICATORS TO ADOLESCENTS EATING BEHAVIORS**

**Concepción Moreno-Maldonado<sup>1</sup>, Pilar Ramos<sup>1</sup>, Inmaculada Sánchez-Queija<sup>1</sup>, Francisco Rivera<sup>2</sup>**

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**Introduction:** Parents influence their children's eating behaviors by controlling the availability and accessibility of food, their own eating habits as well as through the food-related parenting practices they apply. A wide body of research supports that these factors are related to socioeconomic circumstances. However, the relationship between the family's socioeconomic level and healthy adolescent eating habits is not clear. It is during this period that other contexts acquire more importance, as well as the adolescents' increased independence allowing them to take more responsibility about food choices and consumption.

**Purpose:** The aim of this research is to analyse if there is a relationship between socioeconomic factors and adolescent eating habits, after controlling the effects of gender and age. This study employs different socioeconomic indicators to understand if the varying results reported in the literature are due to the use of specific measures to assess the adolescent's socioeconomic status or because adolescence is a period in which the importance of family-related factors decrease in importance.

**Materials and Methods:** Multiple logistic regression were performed in a sample of 6,851 adolescents between 11 and 16 years old (53.8% girls, mean age = 13.79, SD = 1.68) who participated in the 2014 edition of the Health Behaviour in School-aged Children (HBSC) survey in Spain. Questions about the frequency of breakfast, fruit, sweets and soft drink consumption were selected from the HBSC Questionnaire. In addition, to evaluate the socioeconomic position of the adolescents the following indicators were employed: the education and occupational level of both parents and family material affluence.

**Results:** Girls and older adolescents showed less likely to eat breakfast. In addition, girls showed lower rates of soft drink consumption and older adolescents higher rates of sweets consumption. Education level was the variable most associated with adolescent eating behaviours, specifically, the education level of the mother was significantly associated with breakfast, fruit and soft drink consumption. Family material affluence showed an effect on adolescents' fruit consumption. No significant effects were found between father and mother's occupation and adolescents eating behaviors.

**Conclusion:** Indicators for assessing the socioeconomic position of the adolescents showed different relationships with adolescents eating habits. Parental educational level, and specifically, maternal educational level showed to be a major contribution for establishing adolescent eating habits. Interventions to promote healthy eating habits during adolescence should focus in the inequalities produced by the educational level of the parents.

**ID: 68 / PO1: 48**  
**POSTER**

**TRENDS IN THE SEXUAL BEHAVIOUR OF 15-YEAR OLDS IN SCOTLAND: 2002 - 2014**

**Fergus Neville<sup>1</sup>, Juliet McEachran<sup>2</sup>, Aixa Y. Aleman-Diaz<sup>2</sup>, Ross Whitehead<sup>2</sup>, Alina Cosma<sup>2</sup>, Dorothy Currie<sup>2</sup>, Candace Currie<sup>2</sup>**

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**Introduction:** Early sexual initiation and inadequate contraceptive use places adolescents at increased risk of unplanned pregnancy and sexually transmitted infections. These behaviours are patterned by gender and may be linked to social inequalities.

**Purpose:** This paper examines trends in sexual initiation and contraceptive use by gender and family affluence for Scottish adolescents.

**Materials and Methods:** Cross-sectional data from four nationally representative survey cycles (2002, 2004, 2010, 2014) (n= 8,895) (mean age = 15.57) were analysed. Logistic regressions examined the impact of survey year on sexual initiation, condom use and birth control pill use at last sex; as well as any changes over time in the associations between family affluence and the three sexual behaviours. Analyses were stratified by gender.

**Results:** Between 2002 and 2014, adolescent males and females became less likely to report having had sex. Low family affluence females were more likely to have had sex than high family affluence females, and this relationship did not change over time. Condom use at last sex was reported less by males since 2002, and by females since 2006. Low family affluence males and females were less likely to use condoms than high family affluence participants, and these relationships did not change over time. There were no effects of time or family affluence for birth control pill use.

**Conclusion:** There has been a reduction in the proportion of 15-year olds in Scotland who have ever had sex, but also a decrease in condom use for this group. Economic inequalities persist for sexual initiation and condom use.

**ID: 214 / PO1: 49**  
**POSTER**

**ACUTE GASTRO-ENTERITIS IN CHILDREN AGED 6 MONTHS TO 6 YEARS PRESENTING AT THE OUT OF HOURS SERVICE: A QUALITATIVE STUDY**

**Heleen A Russchen, Inge Nederveen, Jan Schuling, Marjolein Y Berger**

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**Introduction:** Acute gastroenteritis in young children is a common reason to visit the general practice or out-of-hours service (OHS). Dehydration is the most dangerous complication, leading to hospital admission. Although estimating dehydration by a general practitioner (GP) is ambiguous.

**Purpose:** To describe and get insight in GPs experiences regarding management of children with AGE during out-of-hours care.

**Methods:** A qualitative study, using semi-structured interviews with GPs working in OHS in Groningen. Analysis was based on grounded theory and constant comparison using open, axial and selective coding.



**PO1: POSTER PRESENTATIONS: SESSION 1**

**Results:** In total 9 GPs were interviewed. Observation of the child during the consult gives the GP the most information about the presence of dehydration. There is heterogeneity about the value of the information obtained by physical examination. Inadequate coping from parents with the situation is an important reason to refer, even if there's no medical necessity. Not-knowing the children and parents, high workload and minor possibilities for follow-up make the situation more difficult in the out-of-hours setting.

**Conclusion:** The general appearance and the parent's story are the most important factors for GPs to assess dehydration in children. Anxiety and inappropriate coping from parents is an important factor to refer children with AGE to hospital. To improve care for these children, there must be attention for characteristics of the patient, the parents, the GP himself and the setting of the out-of-hours service.

**ID: 34 / PO1: 50**  
**POSTER**

**ATROPHIC GASTRITIS IN CHILDREN WITH CELIAC DISEASE**

**Valeria Novikova<sup>2</sup>, Maria Revnova<sup>1</sup>, Natalia Shapovalova<sup>1</sup>, Svetlana Azanchevskaya<sup>3</sup>, Elena Kalinina<sup>3</sup>, Sergey Lapin<sup>4</sup>, Veronika Guseva<sup>4</sup>**  
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**Purpose:** To determine the prevalence of atrophic gastritis in children with celiac disease. To determine the frequency of *Helicobacter pylori* (H. pylori) and antiparietal cell antibodies as a possible causes of atrophic gastritis.

**Materials and Methods:** 88 children of both sexes at the age of 3 to 17 years were examined. The study involved 54 children with different clinical forms of celiac disease (CD). The diagnosis was confirmed according to ESPGHAN criteria: was biopsy-prove, was based on clinical manifestation, positive serological and genetic data. 34 children with chronic gastritis and excluded celiac disease were a control group. All patients underwent a same examination: histological examination of gastric biopsies, histological verification of H. pylori infection and biopsy urease test, identification of antiparietal cell antibodies by enzyme immunoassay (ELISA). The biopsies were evaluated by a single pathologist who was blinded to all clinical data

**Results:** In the group of patients with celiac disease chronic isolated corpus gastritis was diagnosed more frequently than in the control (61.1% and 5.9%  $p < 0.01$ ) biopsies of the gastric corpus mucosa in patients with CD was characterized by neutrophilic infiltration in comparison with control (53.7 % and 26.5%  $p < 0.05$ ). The difference in antrum samples was not received (7.4% and 14.7  $p > 0.05$ ). Fibrosis in the lamina propria of the gastric corpus was more prevalent in CD group (53.7% and 26.5%  $p < 0.05$ ). For gastric antrum the difference wasn't obtained (68.5% and 55.9%  $p > 0.05$ ). Among patients with CD we found gastric corpus atrophy in 11 cases and in the antrum in 8 cases. In control group corpus atrophy was in 4 cases and antrum atrophy was in 5 cases. Thus, the statistical difference in groups hadn't been received (35.2% and 26.5%  $p > 0.05$ ). In a majority of patients in both groups H. pylori was diagnosed (53.7% in the CD group and 55.9% in the control group  $p > 0.05$ ). Nevertheless antiparietal cell antibodies in the control group were not revealed. While we detected them in the CD group in 4 cases (0% and 7.4%  $p < 0.01$ )

**Conclusion:** Atrophic gastritis was common for both groups. H. pylori rate was statistically equal. Nevertheless antiparietal cell antibodies were observed in CD group only, with the prevalence 7.4% or 1:13.5

**ID: 169 / PO1: 51**  
**POSTER**

**NEONATAL TETANUS: CASE REPORT**

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**Background and Aims:** Neonatal tetanus, one of lethal consequences of unassisted deliveries and non-sterile umbilical cord care practices, has become a very rare infectious disease in Romania but it is still common in developing countries.

**Methods:** We present a case of a seven-day-old male baby referred from a pediatric hospital to our unit for progressive difficulty in feeding, fever, bradycardia, trismus, generalized muscle rigidity and spasms.

**Results:** The patient was born in a rural household from a non-vaccinated mother. Both the pregnancy and the delivery were unattended and the umbilical cord was cut with a non-sterile device. Because of severe respiratory distress symptoms and continuous muscle spasm the baby was mechanical ventilated for 41 days; he also received IV immunoglobulin, antibiotics concomitant with continuous Midazolam and Rocuronium infusions. The patient was discharged after 78 days without residual stiffness.

**Conclusion:** Neonatal tetanus, a severe, often fatal disease, can be eliminated through immunization of pregnant women and promotion of more hygienic deliveries and cord care practices.

**ID: 5 / PO1: 52**  
**POSTER**

**ASSESSING THE QUALITY OF THE RESIDENT SIGN OUT WITH INTRODUCTION OF NEW FLOAT SYSTEM AT THE PEDIATRIC RESIDENCY PROGRAM AT HAMAD GENERAL HOSPITAL**

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**Problem:** To comply with ACGME requirements, most training programs adopted new resident schedules that resulted in an increased number of patient handoffs. Inadequate sign-out has been associated with adverse events

**Aim:** To study the quality of the sign out before and after the introduction of the new float system schedule.

**Methods and Intervention:** The study was conducted in Hamad general hospital, pediatric residency program using a survey to examine the

**PO1: POSTER PRESENTATIONS: SESSION 1**

characteristic and the content of the sign out. The survey was collected before and after introduction of the float system to compare the two schedules with total of 38 responses and 42 responses respectively.

**Results:** With comparison to the old conventional schedule, the new float system had significant decrease in duration of sign out, 90% (< 1hr) vs 63% (p value 0.0063). The environment of the sign out was reported as quiet or with minimal interruption in 77% vs 49% (p= 0.007). There was no statistically significant change between the two systems with regard to SBAR use for standardized communication and no significant change in critical elements missing 14% vs 19% (p= 0.7). The overall safety rating for 4&5 out of 5 was 62% for the float system compared to 81% previously (p=0.08).

**Conclusion:** Using float system had showed improvement in the environment of the handover, decreased the duration of the timing needed to complete the sign out with no difference in usage of the standardized SBAR format and no change in critical information missing. However, the overall safety rating showed some decrease. Further monitoring for the sign out to quantify and identify barriers to safe and complete sign out is needed to improve the quality of the sign out

**ID: 168 / PO1: 53**  
**POSTER**

**TITLE CASE DIAGNOSTIC PROBLEMS IN A CASE OF GASTRIC OBSTRUCTION OF A SCHOOL AGE CHILD**

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**Introduction:** Gastric outlet obstruction encompasses a broad spectrum of conditions that prevent the gastroduodenal contents passage, characterized by persistent nonbilious vomiting.

**Materials and Methods:** A 12 years old girl, without familial/personal history who was admitted in our hospital for loss of appetite, epigastric pain, vomiting, weight loss (5-6 Kilograms/ previous month), with normal stools. **Physical Examination:** Poor nutritional status (wasting), pale teguments, intermittent bilious vomiting, epigastric pain, without abdominal mass. **Laboratory Investigations:** Moderate inflammatory syndrome associated in dynamics with biological electrolyte imbalances and ultrasound aspect of diffuse liver steatosis with gastric stasis and significant parietal thickening. **Esophagogastroduodenoscopy:** Papulo-erosive phlegmonous gastritis with marked parietal infiltration and thickened deformed antropyloric region with histological and immunohistochemical features of chronic active non-atrophic gastritis, important nonspecific lymphocytic inflammatory infiltrate without *Helicobacter pylori* infection and epithelial/lymphoid tumor proliferation. Parenteral antibiotics, prokinetic agents and proton pumps inhibitors were initiated with unfavorable evolution, requiring magnetic resonance imaging practice who revealed antropyloric circumferential parietal thickening and perigastric lymph nodes metastases strengthening the suspicion of malign etiology. The reassessment of immunohistochemical markers revealed a large B cell lymphoid proliferation/Burkitt lymphoma CD20+. Thoracic computed tomography was performed for the evaluation of secondary determinations and showed a nodular lesion in the upper lobe of right lung suggestive for pulmonary tuberculosis. The clinical evolution was favorable under chemotherapy and tuberculostatic treatment, with partial remission of tumor and progressive attenuation of gastric obstruction.

**Conclusion:** We presented a case of non-Hodgkin gastric lymphoma grade III without medullary/CNS invasion, rarely reported in children in which the most frequent sites is ileocecal region and who particularly associated pulmonary tuberculosis.

# POSTER PRESENTATIONS

## POSTER SESSION 2

### ■ PO2: POSTER PRESENTATIONS: SESSION 2

Time: Friday, 09/Dec/2016: 1:30pm - 2:30pm • Location: Assembly Hall Corridor - Poster Area

### Presentations

ID: 70 / PO2: 1  
POSTER

#### INCONTINENTIA PIGMENTI (BLOCH-SULZBERGER SYNDROME): A RARE CASE REPORT WITH DENTAL DEFECTS

**Nihan Tugcu, Basak Durmus**

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**Introduction:** Incontinentia pigmenti (IP) is an uncommon X-linked dominant genetic syndrome, which predominantly includes ectodermal, mesodermal, neurological, ocular and dental abnormalities. Cutaneous manifestations are classically subdivided into 4 stages: vesicular, verrucous, hyperpigmented, and atrophic. Various hair and nail abnormalities, dental anomalies, and ophthalmologic and neurologic deficits are associated with the disorder. The condition is lethal in the majority of affected males in utero and variably expressed in females. Dental characteristics such as hypodontia, delayed eruption and conical shape may be used to identify the syndrome with ectodermal features.

**Purpose:** The aim of this case presentation is to document and management of the dental manifestations of a girl with IP.

**Case report:** A 8-year-old girl referred to the Dept. of Pediatric Dentistry, Dental School, Marmara University, Istanbul, Turkey for abnormal dentition. An oral examination with panoramic radiograph was performed. The oral mucosa was normal however clinical and radiological dental examination of the patient showed characteristics of dentition seen in IP such as hypodontia, partial peg-shaped anterior teeth and un-erupted teeth. Dermal lesions as hyperpigmented atrophic streaks were also noticed on her face and limbs. History of similar disease was not present in the family. Esthetic and functional prosthetic and restorative oral rehabilitation was performed. Importance of having optimum oral hygiene and routine periodic examinations were explained to maintain the oral health.

**Conclusion:** Our patient showed the classical sequential cutaneous findings of IP. Early treatment for the child having many missing and abnormal shaped teeth is important and necessary. Note that, by improving the child's appearance for a more normal physical development through better nutrition and psychological development means better social and emotional adjustment.

ID: 137 / PO2: 2  
POSTER

#### AN EARLY PRESENTATION OF BENIGN PAROXYSMAL TORTICOLLIS: A CASE REPORT WITH 4 YEARS OF FOLLOW-UP

**Cátia Pereira, Tiago Proença Santos, Ana Fernandes, Joana Coelho, António Levy**

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**Introduction:** Benign paroxysmal torticollis of infancy is a rare movement disorder, characterized by recurrent episodes of tilting of the head to one side in healthy children. Onset occurs within the first 12 months of life. The duration of the torticollis may last from several hours to a few days. The frequency and duration of the episodes tend to decrease as the patient gets older and usually stop when reaching 5 years of age. The etiology is unknown, but some cases have been associated with mutations in the CACNA1A gene. The disorder is self-limited and no treatment is required.

**Case Report:** We describe a 4-year-old male with recurrent episodes of tilting of the head to the left side occurring suddenly, each lasting for about 8 hours, which started at 4 months of age. Episodes were associated with drowsiness, vomiting and ataxia. After resolution of the episodes, his neurologic examination and neurodevelopment were normal. He had a previous history of febrile seizures. There was no family history of migraine or other neurologic problems. Gastroesophageal reflux had been ruled out. Head and cervical magnetic resonance imaging were normal. Blood analysis during the crisis revealed no changes in sodium, potassium, calcium, magnesium, phosphorus or chlorine. Electroencephalography revealed posterior slow waves associated with migraine. Epileptic elements were not identified, even during the episodes. Electrophysiological studies revealed a normal vestibular function even in crisis. The diagnosis of benign paroxysmal torticollis of infancy was assumed. Mutations in the CACNA1A gene were not found. The child was treated with flunarizine 2,5 mg/day. During the follow-up, the child had a reduction of episodes to about 4 per year, which became less prominent and shorter. After the age of 2,5 years, episodes were also associated with headache. At the time of the last consultation, the patient had been asymptomatic for 8 months.

**Conclusion:** Benign paroxysmal torticollis of infancy is probably an under-recognized cause of torticollis in early infancy, misdiagnosed as other disorders, such as epileptic seizures. It is essential to recognize the condition, avoiding unnecessary extensive investigations and informing parents of its good prognosis. The finding of normal vestibular electrophysiological studies suggests that the pathologic mechanism does not involve the vestibular pathway. Considering the underlying relation of benign paroxysmal torticollis of infancy with migraine, flunarizine can be an effective medication.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 151 / PO2: 3**  
**POSTER**

**AN EXAMPLE OF A CONTIGUOUS GENE DELETION SYNDROME**

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**Introduction:** A global development delay is one of the main causes to reference to a development consultation. Biological and environmental risk factors can both negatively intervene in normal development. Therefore, these can be isolated findings or be associated with a syndromic condition. Ichthyosis vulgaris is a dermatological disease caused by a mutation in filaggrin, the protein responsible for skin keratinization. This condition is presented with xerosis, white scales in extensor zones and palmar and plantar hyperkeratosis.

**Materials and Methods:** Case report of a 6 years old child with a contiguous gene deletion syndrome.

**Results:** A 6-year-old male, referenced to the development consultation at the age of four, due to developmental delay. He presented with few facial dysmorphisms (synophrys, broad nose) and xerosis, with scaly skin and palmoplantar skin fissures. Due to these characteristics, an array-CGH was performed and revealed a deletion in 1q21.3 involving 67 genes, among which there is one associated with development delay (POGZ) and another associated with ichthyosis vulgaris (FLG). This deletion explains the child phenotype. Currently, the child is followed by dermatology and development consultations, is treated with risperidone every day and, with therapies' help, has a slowly and progressive acquisition of language and fine motor skills.

**Conclusion:** With this case report, the authors wish to emphasize the singularity of the contiguous gene deletion syndromes, in which the same deletion involves different genes responsible for non-related pathologies. This case also reminds the importance of a multidisciplinary team in early diagnosis and management, in order to maximize the future child development.

**ID: 130 / PO2: 4**  
**POSTER**

**ASK-UPMARK SYNDROME: RARE CAUSE OF HYPERTENSION IN PEDIATRIC PATIENTS**

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**Introduction:** Hypertension is an important, independent and potentially reversible risk factor for cardiovascular disease in pediatric patients. Renal parenchymal disease and renovascular disease account for 80% of secondary causes of hypertension in this population. Ask-Upmark syndrome or renal segmental hypoplasia is rare congenital kidney disorder (approximately 200 cases reported) that can be associated with hypertension. This condition is seen more frequently in females below the age of 12 years.

**Case report:** A 12-year-old girl previously healthy was referred to our emergency department with anxiety crisis and high blood pressure. The physical examination was unremarkable except for a blood pressure extremely high (191/141 mmHg). Echocardiography revealed left ventricular hypertrophy. Renal ultrasound showed a renal asymmetry with a small left kidney. She was treated with three antihypertensive agents without blood pressure normalization. Further investigation included doppler ultrasound and computed tomography angiography which revealed atrophic left kidney and a narrow but permeable renal left artery. No radionuclide uptake was observed in captopril renogram. Patient underwent a left nephrectomy with marked improvement in blood pressure control. Macroscopic appearance of the atrophic kidney showed signals of Ask-upmark syndrome: segmental hypoplastic area with absence of glomeruli, atrophic tubules and thick walled arteries at histological findings with associated hypoplasia of the renal artery.

**Conclusion:** Hypertension can be silent and screening children and adolescents for elevated blood pressure could identify hypertension at an early stage and identify secondary causes. This condition is rare and the diagnosis is crucial because it is a potentially curable cause of hypertension in the young people. In all cases of hypertension it is necessary to investigate the presence of target organ damage.

**ID: 108 / PO2: 5**  
**POSTER**

**CHRISTIANSOHN SYNDROME: A LONG WAY TO THE DIAGNOSIS**

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**Introduction:** Christianson syndrome is a rare genetic condition, inherited in an X-linked recessive pattern, with an unknown prevalence, associated with mutations in the SLC9A6 gene. It affects mainly the nervous system, causing intellectual disability with absent speech, epilepsy and ataxia.

**Clinical Case:** We describe the case of an 8-year-old Caucasian male child, without inbreeding, followed by our paediatric neurology team since he was two and a half years old. He had an apparently non-progressive condition characterized by severe cognitive deficit with no language, pervasive developmental disorder, epilepsy and dysmorphic facies. Other findings included convergent strabismus, autonomous gait with some imbalance and pyramidal signs in the lower limbs. Investigations revealed a normal brain MRI (2009) and negative genetic studies (karyotyping, fragile X syndrome, Smith-Lemli-Opitz syndrome, non-specific intellectual disability sequencing panel, including Angelman syndrome, and array CGH). In March 2015, following a viral upper respiratory tract infection, he presented with progressive prostration and decreased spontaneous movements, with axial and appendicular ataxia, with no other abnormal movements. Further investigations showed: a brain MRI revealing important cerebellar

**PO2: POSTER PRESENTATIONS: SESSION 2**

atrophy with hyperintensity of the cerebellar cortex, an EEG with abundant paroxysmal activity in the left frontal region, with increased sleepiness, a normal skin biopsy, and several metabolic studies that were inconclusive (amino acids, organic acids, redox potential, biotinidase, carbohydrate deficient transferrin, creatine metabolism, mucopolysaccharides and oligosaccharides). He clinically showed slight improvement after the acute episode, but without recovery of prior neurological status, maintaining inability to walk on his own. Since his clinical presentation at the moment fulfilled some of the criteria for Christianson syndrome (delayed development, intellectual disability, absence of language, ataxia, epilepsy, loss of ability to walk and dysmorphic features), genetic testing was performed and showed a mutation variant previously not described in the literature.

**Conclusion:** Rare disorders, also referred as orphan diseases, are diseases that affect a small percentage of the population therefore leading to a lack of experience of specialists. This fact implies that a great amount of suspicion, several years of investigations and multiple consultations are sometimes necessary in order to reach an accurate diagnosis. The correct diagnosis however is important in order to offer a more accurate prognosis and proper genetic counselling in future pregnancies.

**ID: 187 / PO2: 6**  
**POSTER**

**DOES OBSTRUCTIVE SLEEP APNEA AFFECT ORAL HEALTH IN CHILDREN WITH DOWN SYNDROME?**

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**Introduction:** Among the general pediatric population, up to 2-4% of children experience Obstructive Sleep Apnea (OSA). Children with Down Syndrome (DS) are at an increased risk for OSA when compared to children without DS, with reported prevalence rates of 31±75% among clinic-based samples. The gold standard for diagnosis of OSA is overnight polysomnography (PSG). OSA can be causally implicated in the development of periodontal problems. Mouth breathing associated with OSA has negative effects on the oral defense.

**Purpose:** We aimed to find out if there is any effect of OSA on periodontal and dental health in children with Down Syndrome.

**Materials and Methods:** 18 Children with DS, age range between 7-14 yr, were examined by a multidisciplinary team. A full overnight PSG was performed at the Istanbul University, Istanbul Medical School, Department of Pulmonary Diseases, Istanbul; where respiratory and sleep variables were continuously measured and recorded by a computerized polysomnography. Patients were received a full mouth periodontal and dental examination that included probing depths (PD), plaque index (PI), gingival index (GI) and bleeding on probing (BOP) on 6 sites per tooth. DMFT/dmft scores were calculated and noted. The study was approved by the local Ethical Committee and all parents gave written informed consent before inclusion in this study. All statistical analyses were performed using the SPSS 20.0, and inter-group comparisons were performed with Mann Whitney U test ( $P < 0.05$ ).

**Results:** Patients were divided into two groups depending on whether OSA is diagnosed or not. Group 1 (with OSA) and Group 2 (without OSA) included 11 patients (mean age=11,54±2,16) and 7 patients (mean age=9,71±2,28) respectively. OSA was established with median AHI =1/h. The clinical parameters including GI ( $p=0,020$ ) and BOP ( $p=0,006$ ) were found statistically significantly different between the groups. No significant difference was observed between the groups in terms of PD ( $p=0,930$ ), PI ( $p=0,104$ ) scores and DMFT/dmft values ( $p=0,425$ ).

**Conclusion:** OSA is a noticeable problem for Down Syndrome patients and may affect oral health negatively. According to our findings OSA can be associated with the gingival health of Down syndrome children with OSA.

**ID: 136 / PO2: 7**  
**POSTER**

**EWING SARCOMA FAMILY TUMORS: A 10-YEARS EXPERIENCE OF A SINGLE-CENTER IN PORTUGAL**

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**Introduction:** Ewing sarcoma family of tumours (ESFT) are primary malignant tumours that develop in bone and soft tissue and represent the second most common musculoskeletal cancer in children. These tumours often metastasize, primarily to the lungs and other bones. According to published evidence prognosis varies depending on age, tumour volume and presence of metastasis at diagnosis.

**Material and Methods:** We conducted an observational retrospective descriptive study, where we analysed all paediatric patients with ESFT diagnosed between 2001-2010 in a Portuguese Paediatric Oncology Reference Centre.

**Results:** We identified 28 patients diagnosed with ESFT, 57% (16) of them were female and median age at diagnosis was 9.9 years, with 50% of patients younger than 10 years-old (yo) at diagnosis. Half (14) of the tumours were localized in long bones and pelvis. At time of diagnosis 25% (7) of the patients had metastatic disease (MD), and most of them (86%) were older than 10 yo. Median tumour volume was 58.5 mL in patients who died while it was 111 mL in survivors. All patients were treated with chemotherapy (28), 79% (22) were also submitted to surgery, 75% (21) received additionally radiotherapy, and 61% (17) were treated with all three modalities. Eleven (39%) patients experienced a recurrence of the disease. Five and ten year overall survival (OS) for the whole cohort was 68% and 59%, respectively. Patients aged above 10 years, patients with MD at diagnosis and those patients that experienced a relapse had an increased odds of death [odds ratio (OR) = 4.11,  $P = 0.072$ ; OR = 20.13,  $P = 0.006$  and OR = 15.34,  $P = 3 \times 10^{-5}$  respectively]. The majority (84%) of survivors experienced some long-term sequelae, mostly orthopaedic.

**Conclusion:** In our series patients diagnosed under the age of 10 yo had a better outcome. However, the tumour volume was not associated with any outcome. Patients with MD at diagnosis and those who relapsed had a poor prognosis. New therapies from large cooperative trials are needed to improve the prognosis in these groups of patients.



**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 162 / PO2: 8**  
**POSTER**

**HOMOCYSTINURIA: BEFORE AND AFTER NEONATAL SCREENING**

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**Introduction:** Homocystinuria due to cystathionine  $\beta$ -synthase (CBS) deficiency or classic homocystinuria is a rare autosomal recessive condition. Usually, characterized by developmental delay/intellectual disability, ectopia lentis and/or severe myopia, skeletal abnormalities, and thromboembolism. The spectrum of clinical abnormalities is wide, and mild cases may only be recognised by late complications. Treatment, which aims the maintenance of normal homocystinemia, is effective if started before irreversible clinical symptoms. In Portugal, this disease is part of the newborn screening program since 2004.

**Clinical cases:** 1) 18-year-old male with a history of developmental delay, dorsal scoliosis and severe myopia corrected surgically. Consanguineous parents. Hospitalized in the context of an ischemic stroke, was requested collaboration of metabolic diseases unit. At observation was evident marfanoid habitus. Homocystinemia 170  $\mu$ mol/L. It was identified a homozygous mutation in CBS gene (c572C>T). Then he started a protein and methionine restricted diet, cobalamin, pyridoxine and folic acid and plasma homocysteine values dropped dramatically to values around the upper limit of normal range. 2) Newborn male sent to the metabolic diseases consultation because of increased methionine levels detected through neonatal screening. Healthy, non-consanguineous parents. Homocystinemia 149.2  $\mu$ mol/L. He began methionine restricted diet, in association to betaine and cobalamin, with subsequent decrease of homocysteine levels to <50  $\mu$ mol/L. Currently with 3-year-old with unremarkable physical examination, including ophthalmologic observation, and appropriate psychomotor development. It was identified a homozygous mutation in CBS gene (c1013T>C).

**Conclusion:** The aim of treatment is to reduce plasma total homocysteine levels to as close to normal as possible while maintaining normal growth rate. Prevention of the severe clinical abnormalities associated with this disorder requires lifelong treatment, and considerable impact on outcome has been achieved. The success of treatment depends on early diagnosis and treatment, proving the effectiveness of newborn screening program on disease outcome.

**ID: 128 / PO2: 9**

**HYPOPHYSITIS MIMICKING A PITUITARY MACROADENOMA**

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**Introduction:** Autoimmune hypophysitis (AH), also called lymphocytic hypophysitis, is a rare cause of pituitary gland inflammation, more so than granulomatous and xanthomatous hypophysitis. It must be carefully differentiated from common pituitary lesions due to the recurrent nature of the disease. AH usually occurs in pregnant or postpartum women and presents with symptoms of raised intracranial pressure, rarely presenting in childhood and adolescence. Initial treatment is glucocorticoid therapy and surgery if symptoms persist. Recurrence or persistent symptoms may require immunosuppressive therapy.

**Case History:** A sixteen year old adolescent girl presented with three months of headaches, diplopia, polyuria, polydipsia and secondary amenorrhea. Clinically, she had right lateral rectus palsy with normal pupillary reflexes. There was no other cranial nerve involvement or focal neurological deficit. Suspecting a pituitary tumor, magnetic resonance imaging (MRI) of the brain was done, which showed a large enhancing mass in the sellar and suprasellar region with figure of '8' configuration, indicative of a pituitary macroadenoma. Blood investigations were suggestive of central diabetes insipidus (DI), central hypothyroidism, hypocortisolism, hyperprolactinemia with low gonadotropin levels. She underwent a craniotomy for excision of the mass. Histopathological evaluation showed plasma cell rich lesions and lymphoplasmacytic infiltration suggestive of lymphocytic hypophysitis or langerhans cell histiocytosis, which was ruled out with immunohistochemistry. She was started on hydrocortisone, levothyroxine and desmopressin. Following surgery her symptoms subsided and her thyroid profile normalised. Cyclical estradiol and medroxyprogesterone were started for secondary amenorrhea. Four months post surgery, she presented again with headache, diplopia and polyuria. MRI brain was repeated which showed reduction in size of the sellar and suprasellar mass. However, meningeal thickening with enhancement along the right cavernous sinus. with reduction in calibre of the cavernous segment of the right internal carotid artery was noted. Following pulse methylprednisolone therapy, her headaches reduced and oral steroids were continued. The dose of desmopressin was modified and DI was controlled. Patient is on follow up and planned for immunotherapy if follow up MRI does not show regression of the inflammation.

**Conclusion:** Autoimmune hypophysitis is very rare in children and adolescents and must be considered as a differential diagnosis for pituitary lesions. When identified AH must be evaluated and treated aggressively with steroids, surgery and hormonal supplementation as required. Close follow-up is necessary to detect tumor recurrence and to provide a stable hormonal milieu. Immunomodulating agents like rituximab and methotrexate, may be considered for recurrent and steroid unresponsive lesions.

**ID: 230 / PO2: 10**  
**POSTER**

**JARCHO-LEVIN SYNDROME: A CASE REPORT**

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**Introduction:** The Jarcho-Levin Syndrom or autosomal recessive spondylo costal dysostosis (ARSD) is a rare disease of varying severity, due to defective segmentation of the vertebrae and ribs, The incidence and prevalence are unknown.

**Purpose:** Prenatal diagnosis by ultrasound can be done as early as 16 weeks of gestation after conception. Management should aim at aggressive neonatal care, prevention and apt treatment of respiratory infections.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**Observation:** This is the case of a male new born admitted at birth for immediate respiratory distress. Born following term pregnancy complicated by gestational diabetes, born by cesarean due to macrosomia. Immediately intubated and ventilated for respiratory insufficiency. Clinically it presents: a short neck and reduced mobility, a short thorax and a small size. Thorax radiographic examination revealed hemivertebrae and deformities of the ribs. Echocardiography revealed a pulmonary stenosis with PAH. The evolution was marked by the appearance of a junctional tachycardia requiring the use of cordarone and a failure of the weaning machine.

**Conclusion:** The ARSD can be responsible for respiratory failures, which could be severe, leading to a life-threatening risk during the first year of life. Prenatal diagnosis is possible using ultrasound. The diagnosis is clinical and can be supported by an ultrasound examination and x-rays of the spine.

ID: 197 / PO2: 11  
POSTER

**OROFACIAL CLEFTS AND ASSOCIATED CARDIAC ANOMALIES: THE 24 YEARS EXPERIENCE OF A MULTIDISCIPLINARY GROUP IN A TERTIARY HOSPITAL IN PORTUGAL**

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**Introduction:** Orofacial clefts are a heterogeneous group of disorders arising in about 1.7/1000 newborns. They can occur with other congenital anomalies, including heart disease.

**Aim:** To describe a population with orofacial clefts and associated cardiac anomalies.

**Methods:** Retrospective study of patients that attended to the Cleft Lip and Palate Multidisciplinary Group at Hospital S. João, Porto-Portugal. Medical records from January-1992 through December-2015 were reviewed. Patients were divided into four groups: cleft lip (CL), cleft lip and palate (CLP), isolated cleft palate (CP) and atypical cleft (AC). Further categorization included sex, affected relatives, associated congenital anomalies and syndromes.

**Results:** Of the 568 patients included, 88 (~15.5%) presented cardiac anomalies. Of those with orofacial cleft and cardiac anomalies, 53% were males and 17% had known affected relatives. CP was the most common cleft among patients with cardiac anomaly (~56%). Additional congenital anomalies were found in 89.7% of patients; facial defects, central nervous system, renal and skeletal malformations were the most common. A recognizable syndrome was identified in 61.5%, Pierre-Robin syndrome (n=22) was the most common and 22q11.2 microdeletion was the second one (n=9). Both, additional congenital anomalies and recognizable syndromes were significantly more common in patients with heart disease (p<0.05). The main groups of cardiac anomalies were left-to-right shunt (n=25) and right ventricular outflow tract obstruction (n=12). From these, the most frequent were ventricular septal defect (n=23), atrial septal defect (n=10) and Tetralogy of Fallot (n=7). Five patients (~6%) had dysrhythmias.

**Conclusion:** Due to the high prevalence of cardiac anomalies, a routine echocardiographic and electrocardiographic screening should be considered in all cleft patients.

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POSTER

**OROFACIAL CLEFTS AND ASSOCIATED CONGENITAL ANOMALIES IN A MULTIDISCIPLINARY GROUP OF A TERTIARY HOSPITAL: A 24 YEAR EXPERIENCE**

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**Introduction:** Orofacial clefts (OFC) are one of the most frequent birth defects worldwide. The majority are non-syndromic OFC, which are multifactorial conditions and may be associated with other congenital anomalies that do not fit in a recognizable syndrome.

**Purpose:** To evaluate congenital anomalies in a population of patients with OFC.

**Methods:** Retrospective study of the medical records of patients that attended Cleft Lip and Palate multidisciplinary group at Hospital São João in Porto, Portugal, from January 1992 to December 2015. The associated congenital anomalies were accessed and organised by groups according to the International Classification of Diseases 10 (ICD-10). OFC types were classified according to the Spina classification: cleft lip (CL), cleft lip and palate (CLP), isolated cleft palate (CP) and atypical clefts (AC).

**Results:** There were a total of 568 patients. Associated congenital anomalies were found in 245 patients (43.1%), of those 57.6% were males and, according to the Spina classification, 51.0% had CP, 33.1% had CLP, 13.9% had CL and 2% had AC. In this group with malformations, 48.2% had an identified syndrome, family history was positive in 30.1% and 28.4% had prenatal diagnosis of OFC. From all congenital anomalies, the most affected systems were Central Nervous System (20.4%), Facial (19.1%) and Musculoskeletal (18.7%), followed by Cardiovascular (15.7%).

**Conclusion:** The syndromic OFC patients have well-known malformations. However, the non-syndromic are also at increased risk of congenital anomalies. Although central nervous system, facial and musculoskeletal malformations seem to be more frequent, knowing that other systems can be involved, especially in those with CP, helps provide a quick diagnosis and management of the affected patients.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 189 / PO2: 13**  
**POSTER**

**PARAPHARYNGEAL ABSCESS OR LYMPHATIC MALFORMATION: THE DOUBT**

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**Introduction:** Lymphatic malformations are congenital slow-flow vascular anomalies of the lymphatic system more common in the head and neck. They are present at birth and 90% become apparent before the age of two. Signs and symptoms depend on the location. An MRI can help define the anatomical position and to guide treatment. Usually, treatment involves surgical excision and/or sclerotherapy. The prognosis depends on location but it doesn't carry the risk of malignancy.

**Clinical Case:** A 23-months-old female child, born after in vitro fertilization, presented with a right cervical swelling with 24 hours of evolution. There was no fever, but in the previous week she had an upper respiratory infection. The cervical US and CT were compatible with a parapharyngeal abscess. She underwent aspiration cytology and antibiotics plus corticoid were started. However, the cervical mass increased in a few hours and two surgical drainages were performed: the content was blood and a histological biopsy was made. An MRI was done and suggested, for the first time, cervical cyst (4.3x3.6x3.5cm) compatible with lymphatic malformation with intralesional bleeding. The cytological study was inconclusive but the pathological exam supported lymphatic malformation. There was no evidence of other lesions elsewhere. The child was proposed to sclerotherapy.

**Conclusion:** Differential diagnosis of neck masses is complex. Lymphatic malformations can be asymptomatic for a long time and sometimes became evident after a trauma or an infection. Despite being rare, this pathology should always be considered in the differential diagnosis of neck masses. In this case, the initial imaging was not instructive and the aspiration may have worsened the lesion. Vascular anomalies are challenging lesions, many of them difficult to diagnose and managing and should always be approached in the setting of an interdisciplinary team.

**ID: 61 / PO2: 14**  
**POSTER**

**PITTS-ROGER-DANKS SYNDROME**

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**Introduction:** Pitts-Roger-Danks syndrome [PRDS] is a rare genetic disorder and is characterized with microcephaly, micrognathia, significant developmental delay, and abnormal facies. It was described by Pitt et al in 1984 and was considered to be autosomal recessive disorder. It was not until Clements et al in mid 1900s that chromosomal association was made. Now we know that PRDS is caused by microdeletion of chromosome 4p, the exact same region that is critical for another similar genetic disease –Wolf-Hirschhorn syndrome [WHS], a much severe form.

**Case Description:** A 13 month old female was seen in pediatric clinic for follow up on her seizures. She was product of vaginal delivery but delivered at 35 weeks of gestation and was in intensive care unit for 6 weeks due to respiratory distress. She was noted to have abnormal facial features but genetic testing was un- successful. Patient was always noted to be small per the mother, short stature, global developmental delay and recently developed recurrent seizure activity (currently on anti-epileptic medications). Face was triangular in shape with tapering to the chin, prominent eyes with mild ptosis, micrognathia with high palate, microcephaly, hypertelorism, posteriorly rotated ears with thin and tapered fingers. Her slow growth and facial features mimicked Russell- Silver syndrome but her genetic testing revealed a different diagnosis.

**Materials and Methods:** She was tested for microarray and florescent in situ hybridization testing which revealed a micro-deletion in the short arm of 4th chromosome. Her EEG findings were non specific with no clear myoclonic jerks as described by Carey et al 1998. Her genetic testing was most closely consistent with WHS, but she was labelled as Pitts- Roger-Danks syndrome with her subtle chromosomal changes and absence of other visceral associations. She had complete ophthalmic evaluation and no optic atrophy was noted.

**Conclusion:** PRDS is rare a genetic syndrome although milder presentation during early ages might be challenging for the clinician, a high index of suspicion is needed to aptly identify the syndrome and work up accordingly. Patient will need multidisciplinary care and surveillance due to associated morbidity. PRDS and WHS may have similar phenotypical presentation and despite the on-going inconclusive arguments whether it's a spectrum of same disease or two different diseases with varied expression of same chromosome or gene abnormality, it becomes an absolute necessity (especially for the pediatrician) to connect the dots correctly for better patient outcome.

**ID: 125 / PO2: 15**  
**POSTER**

**Keywords:** Rubinstein-Taybi syndrome, broad thumb, CREBBP gene

**RUBINSTEIN-TAYBI SYNDROME - THE IMPORTANCE OF THE PHENOTYPE**

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**Introduction:** Rubinstein-Taybi syndrome is a rare autosomal dominant genetic condition characterized by typical facial features (first image), microcephaly, distinctive broad thumbs (second image) and first toes, postnatal growth retardation, short stature and moderate to severe intellectual disability with epilepsy in 25% of the cases. Behavior disorders are also described such as mood instability, aggressivity and anxiety, especially in adolescence. Other organs and systems are affected such as eye, heart, kidney, endocrine, gastrointestinal and skin. Patients have an increased risk of developing malignancies, including brain and hematologic tumors. This syndrome occurs in 1 in 100,000 to 125,000 newborns. Pathogenesis and genotype-phenotype associations are unknown. Although respiratory tract infections and complications from congenital heart disease are primary causes of morbidity and mortality in infancy, more than 90% survive to adulthood. It's known that mutations in the gene encoding the cyclic-AMP-regulated enhancer binding protein (CREBBP) are responsible for most cases of Rubinstein-Taybi syndrome. It regulates cell growth

**PO2: POSTER PRESENTATIONS: SESSION 2**

and division and is essential for normal fetal development. E1A-binding protein p300 (EP300) is responsible for fewer cases. The majority of the cases are sporadic.

**Case History:** We present a 9 month-old girl referred to consultation by primary care physician for delayed psycho-motor development and strabismus. No significant family history. First child of a non-consanguineous couple. Pregnancy was uneventful with normal obstetric ultrasounds. Since neonatal period hypotonia and delayed acquisition of psycho motor competences were mentioned. Clinical findings on physical examination: short stature with mild microcephaly, low frontal hairline, frontal salmon spot, thick eyebrows, hypertelorism with downslanting of palpebral fissures, beaked nose, arched palate, mild retrognathism, low-set ears. Enlarged thumb and first toe. Hirsutism. Strabismus and lacrimal duct obstruction. Excellent social interaction, grimacing smile. Mild psycho-motor delay, particularly affecting fine motor skills but normal neurological examination. Molecular analysis confirmed the suspected diagnosis of Rubinstein-Taybi syndrome, detecting a previously unidentified variant on the CREBBP gene, in heterozygosity, leading to a truncated CREBBP protein. The child was referred to early intervention and the parents to a genetic consultation.

**Conclusion:** Rubinstein-Taybi is a particularly rare condition. No precise diagnostic criteria have been defined, although the phenotype is extremely relevant for diagnostic suspicion. Authors warn about the importance of early etiological diagnosis that allows not only establishing a prognosis and appropriate intervention but also to genetic counselling to the family.

**ID: 124 / PO2: 16**  
**POSTER**

**SPINAL CORD ABSCESS IN IMMUNOCOMPETENT CHILDREN WITHOUT RISK FACTORS: TWO CASE REPORTS OF A RARE ENTITY.**

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**Introduction:** Spinal cord abscess (SCA) is a rare clinical condition in children with possible devastating neurological sequelae. Patients with predisposing causes, i.e. immunodeficiency disorders or spinal trauma, are more often affected. The most common involved agent is *Staphylococcus aureus*.

**Purpose:** We report two cases of spontaneous spinal cord abscess in two previously healthy children.

**Materials and Methods:** We describe all known cases of spontaneous SCA in the last 10 years in a reference tertiary pediatric hospital in Spain.

**Results:** The first patient is a 3-year-old caucasian female who presented with neck and back pain and fever over the previous 48 hours. She had no relevant previous history. On examination she showed severe neck and back stiffness, with no other neurological signs. Cerebrospinal fluid examination showed 560 cells/mm<sup>3</sup>, 98% polymorphs, 57 mg/dl glucose and 70 mg/dl proteins. Patient was started on intravenous cefotaxime and vancomycin because bacterial meningitis was suspected. 48 hours after admission she showed no signs of improvement and started coughing. Chest radiography revealed left lower lobe opacity. Plain MRI of the spine (figure 1) revealed an extensive necrotic subdural collection from D1 to L2 level. Cefotaxime was substituted by intravenous cloxacillin, and she achieved full recovery after 4 weeks. On last follow-up, 1 month after SCA diagnosis, she presented no neurological sequelae. The second patient is a 7-year-old male with no relevant previous history that presented with fever, headache and back pain during the previous 4 days. 24 hours before admission, he also complained about gait impairment. On examination he showed lower back pain but no neurological signs were present. He was treated with intravenous cloxacillin. Hip radiography was normal. 24 hours after admission, lumbar pain worsened and he developed vomiting and headache. Contrast-enhanced spinal MRI scan (figure 2) showed a necrotic epidural collection from L5 to S3. Cloxacillin was replaced with cefotaxime vancomycin and metronidazole. The patient showed no signs of improvement. Laminectomy was performed to drain the abscess, leading to full recovery of the patient. He suffered no neurological sequelae. In both cases, blood culture revealed Methicillin-sensitive *Staphylococcus aureus* (MSSA). A nasal infected wound on the first patient and tooth abscess that required dental extraction on the second patient were established as probable source of infection.

**Conclusion:** We report these cases to highlight the importance of suspecting SCA in the face of a patient with fever, back pain and stiffness, regardless of the absence of predisposing conditions. Neurological signs have often a late onset, which may also delay diagnosis. Urgent treatment must be started with intravenous *S. aureus*-directed antibiotics, in order to avoid neurological sequelae.

**ID: 185 / PO2: 17**  
**POSTER**

**SYNDROMIC OROFACIAL CLEFTS – A REVIEW OF A PORTUGUESE CENTRAL HOSPITAL**

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**Introduction:** Orofacial clefts (OFCs) are the most frequent craniofacial malformations. Although OFCs tend to occur alone, over 400 syndromes and malformations have been reported in association with OFCs.

**Purpose:** This study aims to characterize syndromic OFCs in patients that attend Cleft Lip/Palate multidisciplinary group at Hospital S. João in Porto-Portugal.

**Materials and Methods:** A retrospective analysis of medical records from a cohort of patients observed between January 1992 and December 2015 was performed. OFCs types were categorized according to Spina classification: cleft lip (CL), cleft lip and palate (CL/P), isolated cleft palate (CP) and atypical clefts (AC). OFC laterality, family history, associated syndromes and identified genetic anomalies were reported.

**Results:** The group included 568 patients, of which 57.4% were male; 41.9% had isolated CP, the most frequent, 37.4% had CL/P, 19.4% had CL and 1.2% AC. Median and left unilateral OFCs were the most affected sites (39.3 vs 24.1%). Family history of OFC was positive in 147 patients



**PO2: POSTER PRESENTATIONS: SESSION 2**

(25.9%). Recognizable syndromes were present in 149 (26.2%) patients: Pierre Robin sequence was the most common (n=60; 40.3%), followed by 22q11.2 microdeletion (n=20; 13.4%), Van der Woude and Goldenhar each 6% (n=9) and CHARGE syndrome 2.7%; n=4). Pierre Robin sequence occurred with additional syndromes in 16 cases (10.7%).

**Conclusion:** The relative frequency of associated syndromes identified in this cohort was lower than described in literature, even though the same syndromes were found. Monitoring of OFCs and associated syndromes is of key importance not only to tailor the approach and management of OFCs and its complications, but also to provide accurate and insightful genetic counselling.

**ID: 227 / PO2: 18**  
**POSTER**

**THE MCKUSICK KAUFMAN SYNDROME: WHEN THINKING?**

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**Introduction:** The McKusick Kaufman syndrome (MKS) is a rare disease characterized by the combination of postaxial polydactyly (PAP), hydrometrocolpos (HMC) in females and genital malformations in males, and congenital heart defect. The syndrome is inherited in an autosomal recessive pattern and it is caused by mutations in the MKKS gene mapped onto chromosome 20p12.

**Purpose:** From this case we take stock of this disease and emphasize the importance of prenatal diagnosis.

**Materials and Methods:** We report the case of a newborn in whom the diagnosis was suspected by noting a post axial hexadactyly.

**Observation:** Lyed is a newborn from a consanguineous marriage of a second degree with family history of blindness in three paternal cousins. His mother aged 30 years has had a previous pregnancy complicated by hydrocephalus with vermis hypoplasia on fetal MRI and bilateral pyelectasis. She gave birth to a stillborn female macerated, bearer of abnormal ends (Polydactyly) and abdominal distension with hydrocolpos strongly suggesting McKusick Kaufman syndrome. The current pregnancy occurring after a birth interval of 5 months, passed without incidents. The newborn presented a post axial hexadactyly with a clinical examination otherwise normal. Transfontanellar ultrasound showed moderate ventricular dilatation, renal ultrasound initially objectified bilateral pelvicalyceal expansion which revealed to be normal following a second control. The eye fundus showed a discrete pallor without signs of retinal disease. Echocardiography has not been made due to the unavailability of pediatric ultrasound. During the following 8 months, the infant was hospitalized 2 times for bronchiolitis and presented a good psychomotor development. The genetic study is ongoing.

**Conclusion:** Most of the MKKS gene mutations are responsible for the Bardet-Biedl syndrome. The existence during infancy of common phenotypes of both syndromes is a risk of misdiagnosis, and encourages advise to wait a few years to eliminate the possibility of the Bardet-Biedl syndrome, particularly after a retinal damage search. Prenatal diagnosis of the McKusick - Kaufman syndrome is possible by viewing an abdominal mass and polydactyly during the obstetrical ultrasound. Genetic counseling may be of benefit for families of people with this disorder.

**ID: 207 / PO2: 19**  
**POSTER**

**TUBEROUS SCLEROSIS – THE NEED FOR A MULTIDISCIPLINARY MANAGEMENT PROGRAM**

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**Introduction:** Tuberous sclerosis (TS) is a rare autosomal dominant progressive neurocutaneous syndrome characterized by the development of multiple hamartomas in different organs. It is caused by a mutation in either tumor suppressor genes TSC1 (located on chromosome 9q34, codes for protein hamartin) and TSC2 (located on chromosome 16p13.3, codes for protein tuberin). As a multisystemic disease, morbidity and treatment burden especially for neurological manifestations are significant.

**Purpose:** Characterization of all TS patients followed-up in a Portuguese pediatric tertiary center.

**Materials and Methods:** We retrospectively reviewed the records of all children with TS presently followed-up at our hospital and collected data on demographic, genetic and diagnostic characteristics. Number of subspecialty clinics frequented by each child was recorded. Neurological examination, EEG and MRI results were obtained. Epileptic status and treatment were assessed.

**Results:** Twenty-one patients are presently followed-up, 16 are male (76%), median age of 14. Prenatal diagnosis was possible in 6 patients (29%). Most common clinical features at diagnosis were hypomelanotic macules (100%), angiofibromas (62%) and angiomyolipomas (52%). Of the 18 patients who have had renal ultrasound, 61% have multiple renal cysts. Nineteen patients (90%) have epilepsy, 17 (81%) cognitive deficiency and 14 (67%) behavioural problems, in most cases ADHD. Brain MRI was performed in all patients and the most frequent changes are subependymal nodules (100%) and cortical dysplasia (76%). Eleven patients (52%) have at least one relative with TS, namely one of the parents in 91% of cases. Genetic study was performed in 10 patients (8 with a TSC2 mutation and 2 with a TSC1 mutation). These patients are followed-up on average on 5 different subspecialty clinics (min 1 – max 10), most commonly Neurology, Cardiology, Ophthalmology and Dermatology. At least 8 have appointments on other hospitals.

**Conclusion:** Our patients present several disease comorbidities and are followed-up by multiple subspecialties. The creation of a multidisciplinary clinic was found to be of paramount importance in order to articulate care and supply better quality of life for patients and their families. With the collaboration of all the different subspecialties it is possible to establish a protocol based follow-up and treatment plan, which will reduce hospital visits while addressing the patients' needs.



**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 131 / PO2: 20**  
**POSTER**

**WHEN ONE EYE DOESN'T FOLLOW THE OTHER – REPORT OF 4 CASES OF BROWN SYNDROME**

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**Introduction:** Brown Syndrome is an ocular motility disorder characterized by limited elevation of the affected eye in adduction. It may be congenital or acquired, however hereditary cases are rare. Recent evidence suggests that in congenital cases the cause can be related not only to structural abnormalities as was previously thought but also due to innervational abnormalities of the extraocular muscles. The diagnosis is made during evaluation of conjugated movements of the eyes, showing a reduced ability to look upwards and inwards in the affected eye. Some children diagnosed with Brown's Syndrome have poor binocular vision or amblyopia.

**Case Report:** 4 cases of Brown Syndrome were diagnosed in the context of ophthalmologic screening; 2 of them occurred in siblings. In this series, both eyes were equally affected. The ophthalmic evaluation elicited a suboptimal elevation in adduction of the affected eye. All children had an accurate vision with LEA test and good performance in stereoscopic vision (Lang test). None had abnormalities on MRI. The visual acuity and binocular vision of these children continue to be monitored; none needed surgical treatment. The authors intend to demonstrate how important the ophthalmologic screening is in pediatric population and the importance of this rare disorder as it can be a cause of amblyopia with future implications in children's life if misdiagnosed.

**ID: 119 / PO2: 21**  
**POSTER**

**PAEDIATRIC VASCULAR MALFORMATIONS: PATHOLOGY, CLINICAL FEATURES AND THE ROLE OF IMAGING IN THE DIAGNOSIS AND MANAGEMENT.**

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**Introduction:** Vascular malformations can be subdivided into high-flow (arteriovenous malformation and arteriovenous fistula) and low-flow lesions (venous and lymphatic malformations). For the purpose of this poster, we concentrate solely on paediatric vascular malformations, utilising cases from our institutions.

**Case Reports:** Diagnostic and Interventional radiology can play a vital role in paediatric vascular malformation diagnosis and therapy, as the sole therapy of choice or as an adjunct to surgery. Low-flow malformations are congenital deformities of venous or lymphatic vessels or both. They commonly present before the age of 2 years. The most common site for low-flow malformations is the neck and face followed by the limbs, trunk, internal viscera, bones, and skeletal muscle. Ultrasound and MRI are the most common imaging modalities used to visualise low-flow vascular malformations. Key imaging characteristics include partially solid multicystic multispacial masses with fluid-fluid levels and phleboliths. Sclerotherapy is the initial therapy for slow-flow malformations and is especially useful for mostly cystic masses. Surgical excision is helpful for solid or incompletely sclerosed lesions. High-flow vascular malformations are divided into arteriovenous malformations (AVMs) and arteriovenous fistulas (AVFs). AVMs are congenital lesions that can be single, multiple, or part of a genetic disorder. They occur most often in the cranium, bone, muscle, and subcutaneous fat. On the other hand, AVFs are acquired and most frequently occur in the brain. All cross-sectional imaging studies have the ability to show the key features of high flow vascular malformations, including a mass-like cluster of arterial and venous structures with little to no intervening solid tissue. Embolisation is treatment of choice for high-flow vascular malformations. Surgery or a combination of therapies may be necessary in some cases.

**Conclusion:** The key learning points are the (1) pathology, (2) main clinical features and (3) the role of imaging in the diagnosis and management of paediatric vascular malformations.

**ID: 105 / PO2: 22**  
**POSTER**

**PUSTULAR PSORIASIS IN A CHILD**

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**Introduction:** Childhood psoriasis is not uncommon. However children tend to present with guttate or plaque psoriasis. This is a case of a young child with generalized pustular psoriasis which is rare in childhood.

**Purpose:** To describe an unusual diagnosis of a pustular rash in a child.

**Materials & Methods:** A 6 year old Chinese boy, who was previously fit and well, presented with a 3 week history of a rash. The rash had started as a few pustules over the trunk and gradually spread over larger areas of the trunk and limbs. There was no previous history of rash, medical illness or a family history of any rashes. He had not consumed any oral medications or used any topical treatments. Fever and systemic symptoms were absent, there was no preceding illness and no pruritus.

**Results:** On examination, he was well thrived and his vital signs were stable. Examination of the trunk revealed scaly, erythematous papules scattered over the trunk, with some lesions displaying yellowish crusted pustules around the papules. There were more discrete papules and pustules over the limbs. There were no scalp or genital lesions, no nail changes or mucosal involvement and no swollen joints. The initial diagnosis considered was acute localized exanthematous pustulosis. A gram stain and microcopy of the pustular contents did not reveal any organisms and bacterial culture was negative. Routine laboratory tests were all normal (Full blood count, renal panel, liver function tests, C – reactive protein). Over the next 2 days, more pustules appeared over the limbs as well as the penile area. The erythematous papules were also enlarging and some areas

**PO2: POSTER PRESENTATIONS: SESSION 2**

were coalescing into plaque like lesions. A skin biopsy was arranged. Histopathological examination of a punch biopsy sample revealed a mildly hyperkeratotic stratum corneum, with a focally acanthotic and spongiotic epidermis. There was a superficial perivascular infiltrate of lymphocytes, histiocytes and neutrophils. The findings were supportive of a diagnosis of pustular psoriasis. The child was commenced on oral Acitretin, with an increasing dose regimen over the next few days. As the lesions continued to progress, Ciclosporin was started 2 days later. The child remained systemically well with gradual resolution of some of the smaller skin lesions over the next few days. He was discharged to outpatient care on the medications above.

**Conclusion:** Although rare, pustular psoriasis can present in children and should be considered as a differential diagnosis of a pustular rash.

**ID: 78 / PO2: 23**  
**POSTER**

**INVESTIGATION ON THE STATUS OF BONE MINERAL DENSITY AMONG CHILDREN AGED 3 TO 6 YEARS OLD IN JIANGXIA DISTRICT OF WUHAN, CHINA.**

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**Introduction:** The status of childhood bone development impact the bone health during adulthood and old age. Preschool term is a critical time for fast development of bone mineral density.

**Purpose:** We investigated the status of growth development and Bone Mineral Density (BMD) and related factors among children aged 3 to 6 years old to provide local policy-markers with scientific evidence on improving bone health in Jiangxia district of Wuhan, China.

**Materials and Methods:** 2646 children age 3-6 years old were sampled in 22 kindergartens of Jiangxia district. Children's height, weight and calcaneus BMD were measured, and moderate and severe low BMD were defined as  $-2 < Z\text{-scores} \leq -1$  and  $Z\text{-scores} \leq -2$  respectively. Chi-square test and variance analysis were used in univariate analyses, and logistic regress was conducted to examine the potential related factors of severe low BMD.

**Results:** 2474 children with effective data were included in the analysis, and the male-female ratio was 1.2. Of 2474 children, 23.3% and 30.3% children's weight and height were lower than the average level. The proportion of moderate and severe low BMD were 39.6% and 13.1% respectively. The SOS-scores presented a up-trend ( $P \leq 0.01$ ), and boy's SOS-scores was higher ( $P < 0.01$ ). The incidence of low BMD decreased with the time ( $P < 0.01$ ), and the degree of low BMD among girls was worse ( $P < 0.01$ ). The incidence of severe low BMD were associated with gender, weight, the degree of physical activity and the frequency of eating snacks ( $P < 0.05$ ). Multiple logistic analysis results showed that the risk of severe low BMD among girls was 2.3 times higher than boys [Odd Ratio (OR)=2.3, 95% Confidence Intervals (CI)=1.40, 3.87], children with higher father's education degree and caesarean section delivery mode were more susceptible to severe low BMD, and the ORs were 2.0 (95% C.I.=1.04, 3.82) and 1.67 (95% C.I.=1.01, 2.76), respectively. Less snacks and higher weight were the positive factors of severe low BMD, and the the ORs were 0.6 (95% C.I.=0.45, 0.86) and 0.8 (95% C.I.=0.71, 0.90).

**Conclusion:** Children's growth development and BMD, higher rates of malnutrition and low BMD, is poor in Jiangxia district, and girls are more susceptible. Nutrition and health promotion activities on health eating habits and physical activity should be carried out for the rural pre-school children to improve the physical and bone health in the future, especially for girls.

**ID: 102 / PO2: 24**  
**POSTER**

**A CASE OF ULCERATIVE COLITIS DEVELOPED AFTER A LIVING DONOR RENAL TRANSPLANTATION FOR FOUR YEARS**

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Ulcerative colitis (UC) is unidentified diffuse nonspecific inflammation of the large colon. We experienced the UC that developed newly four years after renal transplantation.

**Case Study** 9 year old, girl. She was a chronic renal failure due to hypo-dysplastic kidney. So she received renal transplantation from her mother when she was 5 years old. The maintenance immunosuppressive agents were methylprednisolone, tacrolimus and mycophenolate mofetil (MMF). Two years after transplant, antimetabolite agent was changed from MMF to mizoribine because she was continued verruca vulgaris. Allograft function was stable. At 9 years old, bloody stool was appeared. Bloody stool lasted, and she progressed to anemia. She was admitted into the previous hospital and received colonoscopy. Flare, erosion and edema were identified from transverse colon to rectum, but there were not findings of posttransplant lymphoproliferative disease. She was transferred to our hospital for treatment. She was a weight loss of 3 kg and wasting significantly at the time of the admission. Immunosuppressant was tacrolimus 3mg/day and prednisolone 5mg/day. Mizoribine was stopped. The blood test results were as follows; WBC 22700/ $\mu$ l, Hb 8.6g/dl, Plt 362000/ $\mu$ l, CRP 2.3mg/dl, TP/Alb=6.1/2.6g/dl, BUN 10mg/dl, Cr 0.67mg/dl, ESR 23mm/h. She was managed in total parenteral nutrition, but bloody stool lasted. She received colonoscopy again in our hospital. The result turned worse remarkably and showed findings of severe UC. Pediatric UC activity index (PUCAI) was 85. She was prescribed mesalazine (5-ASA), steroid enema, increased tacrolimus (trough level was changed from 2-3 to 10ng/ml) and steroid. One week after start of therapy, PUCAI was improved to 5. Tacrolimus was reduced after two weeks and started azathioprine. She started elemental diet; after all she had elemental diet 600Kcal and low residue diet 1000Kcal at the time of discharge.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 80 / PO2: 25**  
**POSTER**

**CYCLIC VOMITING SYNDROME IN AN ADOLESCENT GIRL. A CASE REPORT**

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**Introduction:** The cyclic vomiting syndrome is an idiopathic disorder characterized by recurrent, stereotypical, self-limiting episodes of vomiting with symptom-free intermediate periods.

**Purpose:** The presentation of the cyclic vomiting syndrome in an adolescent girl.

**Materials and Methods:** A 15 years old girl was submitted to the Pediatric ER with reported multiple episodes of vomiting (> 25) within hours, intense nausea and abdominal pain. It was in the first 24 hours of menstrual period. She had a history of 4 more similar episodes during the past 10 months, with an average frequency of one episode every two months. All episodes were associated with menstruation and exhibited stereotypical symptomatology. Furthermore, she presented elevated prolactin levels and her symptoms did not improve with treatment. She reported symptom free periods between the episodes. The patient was hospitalized in the pediatric department for 8 days for investigation. Gastroenterological, neurological assessment and CT/ MRI, gynecological and psychiatric assessment as well as control of metabolic diseases took place and organic disorders were excluded. By the end of the menstrual period the adolescent's condition was gradually restored. She received symptomatic treatment.

**Results:** Based on the latest guidelines of NASPGHAN the patient was diagnosed with cyclic vomiting syndrome. Regarding the therapeutic approach there is no approved medication. Treatment is individualized. Initially in the precursor stage NSAIDs and ondansetron were administered. But the patient relapsed and therefore prophylactic treatment with antidepressants (SSRIs) begun. We discussed the addition of carnitine, coenzyme Q10 and contraceptive medication with low estrogen content. Decline of the intensity of symptoms and reduction in frequency of the episodes were observed.

**Conclusion:** In the prodromal phase of the disease increased prolactin levels are found. The preventive treatment usually involves amitriptyline and coenzyme Q10. Failure to control the episodes with preventive treatment should be followed by a review of the diagnosis. Treatment in all phases is empirical and individualized. Important is the intervention of the Child psychiatrist, family and individual psychotherapy. Even though cyclic vomiting syndrome is not a frequent disease entity, it should not be omitted from our differential diagnosis thought.

**ID: 166 / PO2: 26**  
**POSTER**

**EFFICACY OF THE INVASIVE DIAGNOSTIC TESTS IN SYMPTOMATIC HELICOBACTER PYLORI INFECTED CHILDREN: A SINGLE CENTER STUDY**

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**Introduction:** H pylori is usually acquired mostly in childhood and leads to prolonged exposure to this potentially carcinogenic agent.

**Aim:** The aim of this study was to evaluate the accuracy of invasive diagnostic tests for H pylori infection in symptomatic infected children who were referred for endoscopic evaluation and to analyze the prevalence of selected virulence genes (cag A, vac A, ice A and ure A).

**Patients and Methods:** We conducted a prospective study of 300 consecutive symptomatic children (age range 1-18 years) with uninvestigated dyspepsia and extradigestive signs suggestive for an organic disease requiring a first upper gastrointestinal endoscopy. The gastric biopsy specimens were evaluated by rapid urease test, histological examination, culture and polymerase chain reaction (PCR). The sensitivity, specificity, predictive positive value (PPV) of the invasive tests used, were evaluated. Statistical analysis were performed using the Graph Pad Prism Program.

**Results:** Active H pylori infection was documented in 145 of the 300 studied children (48,33%). The H pylori prevalence was positively correlated with lower socioeconomic status (89/145 children, 61,38%). Endoscopic nodular gastritis was identified in most of the cases (105/145 patients; 72,41%). The rapid urease test was positive in 115 children (sensitivity 85,19%, specificity 93,94%, PPV 92%) and histopathology in 129 cases, with a higher sensitivity (89,58%) and VPP (99,23%). Culture was performed in 108 cases, with the lowest sensitivity results (74,48%) but with higher specificity (100%) and VPP (100%). There was no difference in specificity and PPV between histology and culture, as opposed to RUT, in which case they were lower. H pylori infection virulence genotype was analyzed by conventional PCR which was positive 140/145 infected children with higher levels of specificity (100%) and VPP (100%), which were significantly higher compared to other invasive tests used in this study. The cag A gene was positive in 96 cases, compared with vac A gene which was identified in all 140 cases isolated by PCR with the predominant vac A s1/m1 genotype (86/140 cases; 61,42%). H pylori strains positive for ice A1 gene were identified in 100/140 cases (71,42%), which were associated with the most virulent genotypes (vac A s1/m1 and vac A s1/m2).

**Conclusion:** Our data suggest that among invasive tests PCR had a significantly higher sensitivity, specificity (p < 0,0001) compared with other invasive tests. There was no difference in specificity and PPV between histology and culture, as opposed to RUT, in which case they were lower.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 74 / PO2: 27**  
**POSTER**

**GASTROINTESTINAL TOLERANCE AND HEALTH-RELATED QUALITY OF LIFE AMONG INFANTS FED AN ALPHA-LACTALBUMIN-ENRICHED FORMULA**

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**Introduction:** Little is known about the relationship between gastrointestinal (GI) symptoms and health-related quality of life (HRQOL) in healthy infants.

**Purpose:** Examine GI tolerance and the associations between parent-reported measures of GI tolerance and infant HRQOL in infants fed an alpha-lactalbumin-enriched infant formula (AL-IF).

**Materials and Methods:** 40 healthy, formula-fed, 1-month-old infants were enrolled in this single-arm study conducted in the Philippines and fed AL-IF for 42 days. GI tolerance was assessed on Days 1, 14 and 42 using the Infant GI Symptom Questionnaire (IGSQ), which includes 13 items in 5 symptom domains (stooling, spitting-up/vomiting, crying, fussiness, flatulence) that are summed to generate an index score that ranges from 13-65 (lower scores indicate better parent-perceived GI tolerance). Infant HRQOL was measured on Days 1 and 42 using the 97-item Infant Toddler Quality of Life Questionnaire (ITQOL; 6 infant-focused and 3 parent-focused concept scores; range=0 [worst]-100 [best]). Stool consistency was assessed using a 3-day diary with validated 5-point scale (1=watery; 2=runny; 3=mushy-soft; 4=formed; 5=hard) prior to the Day-42 visit. GI tolerance was evaluated for non-inferiority by comparing the upper bound of the 1-sided 95% confidence interval (CI) for Day-42 IGSQ scores to a margin (21.6) based on prior studies conducted in Filipino infants at age 10 weeks. Spearman's correlation coefficients were calculated to evaluate associations between IGSQ index score and ITQOL concept scores.

**Results:** 39 infants (97.5%) completed the study. Mean ( $\pm$ SD) stool consistency score at Day 42 was  $2.9 \pm 0.4$ , indicating soft stools. IGSQ scores were low with no significant differences between means on Days 1 (20.5), 14 (19.9) and 42 (18.9); the upper bound of the 95% CI for the Day-42 score was 21.4, demonstrating non-inferiority. ITQOL concept scores were high, with median scores  $\geq 80$  except Temperament and Mood at Days 1 (68.0) and 42 (72.0) and General Health Perceptions at Day 1 (77.0). At Day 1, two infant-focused concept scores were significantly, inversely correlated with IGSQ score (Growth and Development,  $r = -0.346$ ,  $p = 0.029$ ; Bodily Pain/Discomfort,  $r = -0.467$ ,  $p = 0.002$ ). At Day 42, two parent-focused scores were significantly, inversely correlated with IGSQ score (Emotion-Impact,  $r = -0.358$ ,  $p = 0.025$ ; Parent-Time Impact,  $r = -0.339$ ,  $p = 0.035$ ).

**Conclusion:** GI symptom scores were low in this population of healthy infants and comparable to scores in previous studies. Inverse correlations between IGSQ score and several ITQOL concept scores suggest that in healthy, formula-fed infants a lower GI symptom burden may be associated with more positive parent perceptions of infant HRQOL, although additional research in larger studies is warranted.

**ID: 180 / PO2: 28**  
**POSTER**

**LOWER URINARY TRACT SYMPTOMS AND URINARY TRACT INFECTIONS IN CHILDREN WITH FUNCTIONAL CONSTIPATION: A SYSTEMATIC REVIEW**

**Jojanneke J.G.T. van Summeren, Sonja C. van Ommeren, Marjolein Y. Berger, Janny H. Dekker**

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**Introduction:** To date, several reviews were published that concluded to an association of lower urinary tract symptoms (LUTS) or urinary tract infections (UTI) and functional constipation (FC) in children. The underlying pathophysiology is not completely understood. Experts reported it is important for physicians to pay special attention on LUTS in children with bowel dysfunctions. However, no systematic review has been published to evaluate the prevalence and incidence of LUTS or UTIs in children with FC.

**Purpose:** What is the prevalence and incidence of LUTS and UTI in children (4 to 17 years) with FC?

**Methods:** A systematic review of the literature was conducted on the electronic databases MEDLINE, EMBASE, PsycINFO and Cochrane library. Data extraction was performed by two independent researchers. Articles with a prevalence or incidence of LUTS or UTI in children (4 to 17 years) with FC were eligible. Studies who included children with an obvious underlying organic or metabolic cause of constipation and articles published before 1990 were excluded. This review considered observational, registry data and epidemiological study designs including case-control, cross-sectional, retrospective, longitudinal or prospective cohort and clinical trials (with pre-intervention information on LUTS). Case-reports (<10 subjects), expert opinions and author replies were excluded. Primary outcome measure was the prevalence and incidence of LUTS and UTI in children with FC. There is a lack of generally used definitions for FC and LUTS and therefore the definitions used in the published studies were described. The Newcastle-Ottawa Quality Assessment Scale was used as a tool to assess the risk of bias.

**Results:** The initial search strategy included 3001 hits. After screening on title/abstract 58 articles remained. Results are expected in November 2016.

**Clinical implications:** For physicians it is relevant to know if they have to pay special attention on LUTS and UTI in children with FC.

**ID: 149 / PO2: 29**  
**POSTER**

**RECURRENT UROLITHIASIS IN CHILDREN OF ELBASAN ALBANIA**

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**Background:** Urolithiasis is an important disease due to its incidence, recurrence and the damage that it causes to renal function. Knowing well the factors that cause urolithiasis helps in building strategies to prevent them or to reduce the risk of calculi growing.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**Purpose:** To evaluate the epidemiologic and clinical features, and the modification in 24-hour urine in children with recurrent urolithiasis.

**Methods:** This is a retrospective and prospective study. From 2000-2015 we studied all the children coming in our hospital with recurrent urolithiasis. We studied 57 children aged 14.16±2.88 years old in their second episode, 30 of them male and male/female ratio was 1.1:1. We analysed their records for clinical features and their anamneses for positive family history for urolithiasis. We examined their blood for urea, creatinine and uric acid and 24 -hour urine in which we measured sodium, potassium, creatinine, calcium, citrate, oxalate, and magnesium. We evaluated Calcium/Creatinine, Sodium/Potassium and Magnesium/Creatinine ratio.

**Results:** The most common clinical feature was abdominal pain 43.8%, followed by haematuria 30%. Hypercalciuria 79%, followed by hypomagnesiuria 17.5% and hypocitraturia 10.5% were detected as abnormality metabolic features for recurrent urolithiasis in our patients. Children with positive family history of urolithiasis were 52.6% (22.8% first generation, 29.8% second generation). We found a significant relationship between Calcium/Creatinine ratio and positive family history for urolithiasis ( $p=0.002$ ) and Calcium/Creatinine and Sodium/Potassium ratio ( $p=0.001$ ).

**Conclusion:** Metabolic evaluation of 24-hour urine is very important to decrease lithogenic risk especially for children with recurrent urolithiasis and positive family history for urolithiasis.

**ID: 110 / PO2: 30**  
**POSTER**

**ASSOCIATION OF VITAMIN D RECEPTOR POLYMORPHISMS AND TYPE 1 DM SUSCEPTIBILITY IN CHILDREN: A META-ANALYSIS**

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**Introduction:** For many years the strongest genetic contribution to DM1 susceptibility had been attributed to the presence of human leukocyte antigen region (HLA) on chromosome Recently, single nucleotide polymorphisms (SNPs) in the VDR gene have been investigated namely FokI F>f (rs10735810), BsmI B>b (rs1544410), ApaI A>a (rs7975232), and TaqI t T>t (rs731236). Several studies with small data sets that suggested an association between these SNPs and type 1DM had inconsistent results. This present meta-analysis aims to demonstrate the associations between type1 DM and VDR gene polymorphisms ApaI, BsmI, FokI and TaqI, with the largest data set, to rule out genotype-phenotype correlation of type 1 DM in children.

**Methods:** A literature search for the MeSH terms "type 1 Diabetes mellitus " or "DM 1" was performed. Medline, Cochrane and Pubmed abstracts were reviewed for relevance. Investigators of all studies included in our meta-analysis fulfilled criteria of American Diabetes Association for the diagnosis of DM1. Any study was considered to be eligible for inclusion if it met the following criteria: 1)the publication was an association study of case control type, 2) at least one of the FokI, ApaI, TaqI and BsmI polymorphism was determined, 3)the outcome was DM in children and 3) there was at least one unrelated control group. The primary outcome considered in the meta-analysis was the association between DM1 in children and the presence of FokI, ApaI, TaqI or BsmI polymorphisms. MedCalc Software Acaciaaan 22, 8400 (Ostend, Belgium) was used to perform meta-analysis. The odds ratios (OR) of the genetic polymorphisms were combined and calculated, and the funnel plots were drawn

**Results:** A total of 9 studies comprising 1053 patients and 1017 controls met the study inclusion criteria. The pooled odds ratios (ORs) of the FokI, ApaI, TaqI and BsmI polymorphisms were combined and calculated. Forest plots and funnel plots of the OR value distributions were drawn. Our meta-analysis has demonstrated statistically significant associations between DM1 and VDR genotypes, BsmIBB( $P < 0.05$ ), BsmIBb, ( $P < 0.05$ ), BsmIbb( $P < 0.05$ ), TaqITT(  $P < 0.05$ ) and TaqItt ( $P < 0.05$ ) in children, however influence of vitamin D receptor gene polymorphisms on susceptibility to type 1 diabetes deserves further investigations. Meta-analysis include larger data sets and accordingly may demonstrate more reliable statistical results to rule out genotype- phenotype correlations of diseases.

**ID: 133 / PO2: 31**  
**POSTER**

**CHARACTERISTICS OF A PORTUGUESE PAEDIATRIC SAMPLE WITH AUTOIMMUNE THYROIDITIS**

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**Introduction:** Chronic autoimmune thyroiditis (AT) is the most common cause of acquired hypothyroidism and goitre in children and adolescents in iodine-replete areas and has a wide spectrum of clinical manifestations and a variable clinical course. Hypothyroidism may lead to neuropsychiatric disorders and changes in growth / pubertal development.

**Purpose:** The aim of this study was to characterize the epidemiological, clinical and laboratory features of children and adolescents with AT, followed in the Paediatric Endocrinology Unit of our centre.

**Materials and Methods:** We conducted a retrospective study, based on evaluation of medical records of these patients, from 31/12/2010 to 31/12/2015. We performed a descriptive analysis of the following variables: demographic (age, gender, anthropometry, pubertal status), clinical (type of disease presentation, family history, thyroid function, thyroid palpation), analytical [thyroid stimulating hormone (TSH) and free thyroxine (free T4)/ total thyroxine (total T4), anti-thyroid peroxidase antibodies (anti-TPOAb) and anti-thyroglobulin antibodies (anti-TGAb)] and imagiological (thyroid ultrasound scan). The diagnosis of AT was established by the presence of positive autoantibodies (PAA). Statistical analyses were performed using SPSS 24.0 for Windows.

**Results:** The initial sample had 217 patients, 47 were excluded because of incomplete data (final sample, n=170); 82.9% (n=141) were females and 73.5% (n=125) were pubertal. At the time of diagnosis, 47.1% (n=80) of the patients were euthyroid, 29.4% (n = 50) had subclinical hypothyroidism and 23.5% (n = 40) had hypothyroidism. Mean age at diagnosis was 11.33 ± 0.244 years. The main reasons for referral were goitre (41.8%) and



**PO2: POSTER PRESENTATIONS: SESSION 2**

changes in thyroid function and/or PAA (14.1%); 83.5% had positive anti-TPOAb and 72.9% positive anti-TGAb. The most commonly associated autoimmune disease was type 1 Diabetes Mellitus (4.7%). Thyroid ultrasound presented nodules in 42.1 % (n = 70) of all cases, and 4 of those patients underwent fine needle aspiration (no malignancy was detected). Seven (8.75%) euthyroid patients developed hypothyroidism.

**Conclusion:** AT is more frequent in pubertal girls, as previous published in literature. At diagnosis most patients were euthyroid, nevertheless a regular follow-up is essential, taking into account the risk of hypothyroidism and thyroid cancer (mostly papillary thyroid carcinoma) development. Diagnosing AT at an early stage offers the opportunity for a timely intervention.

**ID: 173 / PO2: 32**  
**POSTER**

**SYNDROME OF RESISTANCE TO THYROID HORMONES - CASE REPORTS OF A RARE GENETIC DISORDER**

**Ana Lúcia Cardoso<sup>1</sup>, Tiago Branco<sup>1</sup>, Mariana Martinho<sup>2</sup>, Eunice Moreira<sup>1</sup>, Carla Brandão<sup>1</sup>**

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**Introduction and Purpose:** The syndrome of resistance to thyroid hormones (RTH) is a rare genetic disorder characterized by decreased end organ responsiveness to thyroid hormones (TH). This can occur as a defect in one of the six major steps required for secreted TH to exert its action on target tissues. The first recognized and more common defect involves the TH receptor beta (THRB) gene. Clinical manifestations are variable. Patients may be asymptomatic or present with manifestations suggestive of hypothyroidism, with elevated levels of thyroid hormones and non-suppressed thyroid-stimulating hormone (TSH). Goiter is present in nearly 95% of the cases.

**Material and Methods:** Case report of two half-siblings with RTH.

**Results:** We describe two half-siblings diagnosed with RTH. At 16 years old, the girl was referred to the Paediatric department due to goiter. Apart from menstrual irregularities, she was asymptomatic and, except for a low body mass index and goiter, physical examination (PE) was normal. She had slightly increased fT4 with normal fT3 and TSH levels. Anti-thyroid antibodies were negative and ultrasound showed an enlarged thyroid gland with homogeneous structure. These blood results remained stable for the following two years and, at 17 years old, she had both fT3 and fT4 increased with normal TSH values, and raised blood lipids. Under the suspicion of RTH, TSH alpha-subunit was measured (ratio alpha-subunit/TSH <1), followed by molecular studies, which detected a mutation on the THRB gene, consistent with the diagnosis of RTH. Cerebral MRI was normal. At 2 years old, the boy was referred to the Paediatrics department due to failure to thrive. He had increased fT3 and fT4 with normal TSH. Molecular studies revealed the same mutation on the THRB gene, diagnosing RTH in both siblings.

**Conclusion:** RTH is a rare genetic disorder with heterogeneous manifestations. Suspicion should be raised when elevated fT3 and fT4 co-exist with non-suppressed TSH levels. Being a disorder with genetic transmission, screening of relatives is recommended.

**ID: 176 / PO2: 33**  
**POSTER**

**A PECULIAR CASE OF A 9 MONTHS OLD BOY WITH A PNEUMONIA WHICH WOULDN'T HEAL.**

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**Introduction:** A 9 months old boy was admitted because of high spiking fever for 6 days. Laboratory investigations revealed high inflammatory parameters and a chest X ray was suggestive for pneumonia. The child was treated with various sequential different antibiotics with none or only transient effect. Cultures from separate 2 broncho alveolar lavages remained negative for viruses, bacteria, mycobacteria and fungi. Because the situation of the patient only got worse and he didn't react to antibiotics, as he should have done, an immunodeficiency was suspected. Based on the images and the clinical presentation, a rhodamine staining was performed to check for chronic granulomatous disease, which was confirmed. Genetic testing for the CYBB gene is pending. After careful deliberation, a lung biopsy was done, revealing the presence of Burkholderia Multivorance. The patient was treated accordingly with Meropenem, Trimethoprim/Sulfamethoxazole and Ceftazidim and the clinical situation improved markedly. He is now awaiting stemcell transplantation.

**Conclusion:** This case highlights the importance to consider a primary immunodeficiency (PID) in any child with an abnormal infection. In this case, the child was proven to have X-linked CGD, a disorder of the neutrophils leading to impaired phagocytosis and severe opportunistic infections with bacteria such as Serratia or Burkholderia species as well as fungi. Thinking of PID early will improve the prognosis of the patient.

**ID: 222 / PO2: 34**  
**POSTER**

**CHALLENGES AND BARRIERS FACING SCHOOL PERSONNEL'S MANAGING CHILDREN WITH ALLERGIES IN SCHOOLS**

**Shaza Ali mohammed Elhassan<sup>1</sup>, Hibaq Ahmed Jama<sup>2</sup>, Farhan Zakri<sup>3</sup>, Reem Hasan Elajez<sup>4</sup>, Fayhaa Ahmed Hamato<sup>5</sup>**

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**Introduction:** The incidence of food allergy in schools is increasingly rising that most schools will have a student or few that suffer from an allergy accounting for anaphylaxis. It's crucial that schools are well informed about allergies and fully equipped in order to be able to tackle this vulnerable population.

**Aim:** To assess different types of allergies at schools in Qatar. To highlight the challenges and barriers facing the school personnel in recognising students with severe allergies.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**Method and Materials:** This was a cross-sectional study with a target population of 128 schools in Qatar. Response rate was 50 schools (39%). We used a telephone-administered questionnaire for school caregivers' of allergic children who previously visited either pediatrics emergency department or allergy clinic age from 1-14 years from August 2015 to October 2015.

**Results:** 20 school caregivers' claimed they don't know of any child with allergies in their schools. 12 out of the 20 said that the students' families didn't inform them. Another 20 schools claimed they are not allowed by school administration to administer any allergy medication. The male to female distribution is 30 (60) to 20(40). The most common type of allergy is food 30 (60%) followed by multiple allergies 7 (14%) and unknown allergies 7 (14%). With nuts accounts for 20 (66%) and peanuts being the commonest and accounts for 12 (60). The ages with the most common allergies are 3-6 years 14 (28%) and 9-14 years 14 (28%).the age with the most common type of allergy in percentage.

**Conclusion:** The fundamental challenges that the schools face are limited communication between families and schools and insufficient support from school administration and supreme council of education. Another challenge was lack of enough nursing staff especially at the private schools. School staff should be adequately knowledgeable about their student allergies to reduce emergencies and fatal reactions, and this can be accomplished by specific educational interventions and improvements in school health policies. These findings suggest that a larger study is needed to reinforce those outcomes.

**ID: 196 / PO2: 35**  
**POSTER**

**REACHING THE TARGET: ZERO ANAPHYLAXIS – RESULTS OF AN EDUCATIONAL PROGRAM FOR SCHOOLS AND PRE-SCHOOLS**

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**Introduction:** Anaphylaxis is a life-threatening condition that can occur in patients with diagnosis of food allergy. Anaphylactic events in schools and pre-schools are frequent as meals are served and children spend there the majority of their weekdays. Early recognition of anaphylactic reactions and prompt treatment can be life-saving. A multi-center educational project, supported by the Portuguese Society of Pediatric Allergy, was designed in Portugal in order to train the schools' and pre-schools' staff on this subject.

**Purpose:** To characterize the patients diagnosed with food allergy and potential for anaphylaxis in a Portuguese regional hospital and to evaluate the impact of an educational program on anaphylaxis at their schools/pre-schools.

**Materials and Methods:** An analysis of clinical records of the outpatient clinic of our hospital was performed. 26 patients with diagnosis of severe food allergy who had prescription of epinephrine auto-injector were selected. Variables regarding the patient and the disease were collected. All the patients were contacted and the parent's consent to develop an educational program with their children's school staff was obtained. Schools were contacted in order to present the project and plan the session. It included the definition of food allergy and its clinical presentation, preventive measures and recognition of anaphylaxis and its treatment, including intramuscular epinephrine administration with hands-on training with a placebo and questions and answers session. Follow-up data was collected.

**Results:** 67% of the selected patients were male and 33% were female. 33% had 1 event of anaphylaxis before the diagnosis while 46% and 21% had 2 and 3 events, respectively. The allergens identified were fish/shellfish in 27% of the cases, nuts/dry fruits in 23%, egg in 19%, milk in 19% and fruits in 15%. The first symptoms of food allergy were on average at 33 months of age, mainly with cutaneous and respirator manifestations. 100% of the parents consented on the session at their children's school. 21 sessions were already performed, reaching 150 members of schools' staff. Average follow up time after the session was 617 days with a maximum of 943 days. Zero anaphylaxes occurred among the intervened patients during the follow up time.

**Conclusion:** Anaphylaxis is a life-threatening condition that can easily be avoided and treated if recognized early. Our results demonstrate that an educational program designed for school staff can be effective on the prevention of anaphylaxis and can lead to a total absence of anaphylactic events.

**ID: 220 / PO2: 36**  
**POSTER**

**WHO KNOWS ABOUT ANAPHYLAXIS - FAMILIES OR SCHOOL CAREGIVERS?**

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**Introduction:** Anaphylaxis is a life threatening condition, which requires prompt medical management. Delay in making an accurate diagnosis and initiating appropriate treatment can lead to death. Many parents and school caregivers of severely allergic children lack some knowledge about this serious disease; cannot correctly administer their self-injectable epinephrine or may not have the medication readily available.

**Purpose:** To assess and compare the knowledge and perceptions of anaphylaxis amongst parents and school caregivers of children with severe allergies who have been prescribed epinephrine auto-injectors.

**Materials and Methods:** This is a two-phase cross-sectional study done in Qatar. The first is family based and the other is school centered. A questionnaire to assess knowledge about anaphylaxis was created based on literature review. We used a telephone-administered questionnaire for parents and their corresponding school caregivers of severely allergic children age 1-14 years old, who had previously been prescribed self-injectable epinephrine (epipen) between August and October 2015. The sample size was 140 patients from which we were able to collect data of 128 parents and 50 school caregivers (response rate was 91% and 36% respectively).

**Results:** We analyzed the data of knowledge related questions as Frequency and percentage (univariate analyses), and for comparing knowledge between families and school caregivers we used chi-Pearson square (multivariate analyses). In comparing knowledge related responses between parents and school caregivers refer to table 1. The p.value was significant at 4 areas where school caregivers have less knowledge than families namely, correct concepts about anaphylaxis; instruction received to give epipen, right temperature to store epipen and need to visit the emergency room after giving epipen.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**Conclusion:** Our research results shine light on different areas of deficiencies in knowledge at both families and schools level. Well-structured courses and campaigns should be established at the level of the community to raise the awareness of caregivers of this vulnerable population. Improving communications between families and school caregivers will bridge the gap in their knowledge.

**ID: 3 / PO2: 37**  
**POSTER**

**THE ROLE OF TEACHERS' CONCERNS IN SCREENING PRESCHOOL CHILDREN FOR DEVELOPMENTAL DELAYS: THE UTILITY OF THE PEDS IN SINGAPORE**

**Jennifer SH Kiing<sup>1</sup>, Yiong Huak Chan<sup>2</sup>, Maureen Neihart<sup>3</sup>**

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**Introduction:** Clinic visits may miss up to 70% of children with problems in developmental, behavioural, and social emotional skills when accurate screening tools are not used. In developing countries the practice has been to adapt screening tools originally developed for use in Western cultures. Cross cultural adaption of screening tools is critical to ensure that developmental screening tools accurately screen for 'at risk' children. The PEDS (Parent Evaluation of Developmental Status) is one such screening tool used and adapted widely. The questionnaire elicits parents' 'concerns' about their child's development, learning and behaviour. The PEDS was adapted for use in Singapore but significant 'over – reporting' of concerns was initially reported by parents. We wondered if childcare professionals in Singapore could screen for developmental risk with the PEDS. Use of the PEDS to elicit concerns from childcare professionals has not been explored, as the tool is intended for parents. Multi source feedback from both parents and other caregivers provides essential information for the paediatrician screening for delays.

**Purpose:** This study explored the potential role of preschool teachers' concerns to screen children for developmental delays and behavioural issues using the PEDS in Singapore.

**Materials and Methods:** The PEDS is a 10-item questionnaire instrument used for reporting parents' concerns for their children's development, learning and behavior. Respondents indicate "yes," "a little," or "no" to 10 questions about the child's development. Scoring criteria vary by each domain and the child's age. Children are categorized as high, moderate or low risk according to the number of significant concerns raised. A total of 1357 English responses from teachers of 9 preschool centres were analyzed.

**Results:** The teachers' reporting of rates of concerns closely matched that of norming studies from parent reports in the US (2012). Preschool teachers reported 2 or more significant concerns (high risk of disability category) in 7.5% of children in their preschool (US norms 6 – 12%). Parents and teachers had the least agreement in 4 domains: expressive language, behavior, social emotional and school.

**Conclusion:** Teachers rates of concerns for children in all risk categories matched that of recent US 2012 norming data for the PEDS. The PEDS has good potential to be used as a developmental screener by preschool teachers in Singapore. This study suggests the possibility that in developing or third world countries, teachers may be reliable screeners of developmental risk and behavioural issues in children and provide vital information for paediatricians.

**ID: 77 / PO2: 38**  
**POSTER**

**AUTISM: A DISORDER RELATED TO THE CAPACITY TO LOVE**

**Amalia Megremi**

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**Introduction:** ASDs are increased and etiopathogenesis is unidentifiable.

**Purpose:** It is essential for new aspects to emerge.

**Material and methods:** Literature review.

**Results:** It was Kanner first who observed that all of the autistic children had come of highly intelligent parents and there were very few really warmhearted fathers and mothers in the whole group, in his 1943 paper "Autistic Disturbances of Affective Contact" in journal Nervous Child. At this early point of his study of autism, Kanner wasn't necessarily suggesting cause and effect. In 1967 Bruno Bettelheim, director of the University of Chicago's orthogenic School for disturbed children, published The Empty fortress: Infantile autism and the Birth of the Self, a book that popularized Kanner's notion of the refrigerator mother. Contemporary studies show that oxytocin levels are decreased in autism. Also, numerous clinical trials of oxytocin in ASD therapy are ongoing today, as it has been shown that use of oxytocin in autism results in encouraging improvements in social cognition and attachment. But, oxytocin is "the peptide that binds": it has been recognized as implicated in social development and bonds, affiliative behaviors, and promotes parental nurturing and increases the salience of social stimuli. It is very important that testosterone exhibits opposite effects from oxytocin on diverse aspects of cognition and behavior. Autism is related to increased testosterone also (males are affected more frequently, extreme male brain theory, testosterone-related medical conditions and prenatal androgen exposure contributes to the development of ASDs). Studies show lack of mirror neuron activity in several regions of autistic brain. Mirror neurons are involved in social interaction and empathy. Autistics have great difficulty attributing wants and needs to others, or what others are thinking and feeling (theory of mind deficit). But, love and empathy are unbreakable related to each other.

**Conclusion:** It is possible that autism constitutes the nosological equivalent of love and compassion deficiency (including lack of self-love) and aggression predominance (including self-destructive behaviors) in contemporary world. From this point of view, it is essential for families, who intend to be parents, especially mothers-to-be, to live in an environment full of love, sympathy, compassion and help and decreased prenatal stress. It is very important for societies to offer full support for mothers-to-be in this direction. In addition, WHO declares that love is the most important thing to bring up and nurture healthy children (security is the second one and food, education and other values follow).

**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 154 / PO2: 39**  
**POSTER**

**CRANIOENCEPHALIC MALFORMATIONS AND OROFACIAL CLEFTS- A REVIEW OF A PORTUGUESE CENTRAL HOSPITAL**  
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**Introduction:** Orofacial clefts (OFC) are the most common types of birth defects, arising in about 1.7 per 1000 newborns. Their etiology may be multifactorial, genetic or teratogenic and can be presented alone, associated with other malformations or integrating several syndromes. The cranioencephalic malformations (CEM) may be present and influence the prognosis of these children.

**Purpose:** The aim of this study was to know the CEM prevalence in patients with OFC.

**Materials and Methods:** Retrospective study of medical reports of patients that attend Cleft Lip and Palate multidisciplinary group at Hospital S. João in Porto-Portugal from January 1992 until December 2015. OFC were classified according Spina classification: cleft lip (CL), cleft lip and palate (CLP), isolated cleft palate (CP) and atypical clefts (AC).

**Results:** There were 568 patients with OFC, of these 101 (18%) had CEM which 64% were female. CEMs have been classified into five groups: i) cephalic perimeter alterations (42%), subdivided in macrocephaly (17%) and microcephaly (83%); ii) brain malformations (25%) subdivided in corpus callosum involvement (63%), holoprosencephaly (26%) and cerebral hypoplasia (1%); iii) cranial malformations (15%); iv) CRF disorders or congenital hydrocephalus (10%); and v) neural tube defects (8%). CP was the most common OFC, found in 55% of patients with CEM. Twenty-four per cent had family history of CEM and OFC. Fifty five per cent of patients with CEM had an identified syndrome. Development delay was present in 35% of these patients, 25% had neurosensory deafness and 6% epilepsy.

**Conclusion:** Due to the increased risk of associated CEM in children with OFC further diagnostic investigation is essential, especially using methods, such as magnetic resonance imaging of central nervous system. Considering the variety of changes, it is necessary that these patients are followed in reference centers.

**ID: 234 / PO2: 40**  
**POSTER**

**THE ACUTE EFFECTS OF "KINESIO TAPE" ON BALANCE IN ADOLESCENT WITH DOWN SYNDROME: A CASE REPORT**

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**Introduction:** Children with Down Syndrome (DS) have deficits in balance, co-ordination, and gait throughout childhood and adulthood.

**Purpose:** The aim of this report was to present a case to evaluate the acute effects of "Kinesio Tape" (KT) application on balance in 19 year-old adolescent with DS.

**Materials and Methods:** A 19 year old male adolescent with DS who had no visual or hearing disorders was able to walk independently. He had moderate intellectual deficiency but was able to follow simple verbal instructions. The case was prepared with comfortable clothes to improve his compliance before bandaging. Berg Balance Scale (BBS) was used to evaluate balance. It consists 14 items and each item is scored between 0-4, the maximum score is 56. Each item of BBS was described to the case verbally and visually, each item was repeated 3 times with 30 seconds intervals and the lowest score was recorded. 5m x5cm KT (Kinesio Tex Gold) was applied bilaterally to feet, lower-middle trapezius muscles and internal-external oblique abdominal muscles for foot stability, scapular stabilization and postural stability, respectively. BBS was repeated again after KT.

**Results:** The total BBS score was initially 48 and 50 after the application. The difference was observed in 13th item (standing unsupported one foot in front) and 14th item (standing on one leg) of the scale. While the score of 13th item was 1 (needs help to attain position but able to stand 15 seconds feet together) before KT, after the application the score changed to 2 (able to place feet together independently but unable to hold for 30 seconds). While the score of 14th item was 1 (tries to lift leg unable to hold 3 seconds but remains standing independently) before KT, after the application the score was changed to 2 (able to lift leg independently and hold  $\geq$  3 seconds).

**Conclusion:** Our results showed that the patient had an improvement in total score of BBS with triple application of KT. To reduce the learning effect, each item of BBS was repeated 3 times and the lowest score was marked. In the light of this finding larger sample studies which display the effects of KT on balance in adolescents with DS are needed. There is no conflict of interest.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 12 / PO2: 41**  
**POSTER**

**WHEEL INJURY IN YOUNG CYCLISTS**

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**Introduction:** Bicycle is a very popular way of transportation and recreation in children, but it can be a source of serious damage. 428 children with bicycle injury turned to the emergency room of Mogilev Regional Children's Hospital in summer days of 2015.

**Purpose:** Research the special category among the bicycle injuries – damage, which are obtained when leg of a child falls between wheel and fork. A child gets injured while riding on the frame or the trunk without special seat. Not only extensive damage but fractures of the long bones occur.

**Materials and Methods:** We analyzed 20 cases of such trauma that were treated in May-June 2015. 10 boys, 10 girls, the average age was 3,5.

**Results:** In 80% cases damage was on the external surface of the ankle, in 15% - on the posterior surface of the heel, in 1 case - on the internal surface of the ankle. In most cases besides the main damage multiple compressions of the leg and foot were observed. 50% children have fractures of the leg in the lower third. 1 child has compression fracture of the heel. Cast with padding used in treating all fractures. "Window" in the cast need for dressing. Ointment dressings were applied on the soft tissue damage. Necrectomy was performed in 8 cases, skin grafting not needed.

**Conclusion:** The average duration of treatment in the hospital with this pathology greatly exceeds average duration of treatment with other trauma. Common average duration of treatment with trauma in 2015 – 9,2 days and with this pathology – 14,3 days. Minimal changes in the social sphere can lead to appear of new types of injuries or to increasing the number of infrequently occurring injuries. In recent years there has been increase of bicycle-wheel injury. This damages needs long-term treating. It requires active preventive measures.

**ID: 235 / PO2: 42**  
**POSTER**

**CHOKING GAMES: HOW TO DEAL WITH THEM AT SCHOOL? THE EXAMPLE OF A FRENCH REGION, L'ACADÉMIE DE TOULOUSE (FRENCH MINISTRY OF EDUCATION)**

**Emmanuelle Godeau<sup>1,3</sup>, Caroline Cortey<sup>2</sup>, Isabelle Claudet<sup>2</sup>, Virginie Ehlinger<sup>3</sup>**

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**Introduction:** Preventing asphyxial practices is a public health priority, as choking "games" are not rare and can lead to death. School is a good place to observe those practices (as they begin mostly at school, sometimes in kindergarten) and to organize prevention (all children being in school; breathing and identification of dangerous games being part of French school curricula).

**Purpose:** The regional national education services of Midi-Pyrénées mobilized for several years, in partnership with the pediatric emergency department in Toulouse. Step by step the awareness around those behaviors and their risks has risen.

**Methods:** First, we conducted a survey among a representative sample of 1.023 2nd and 3rd graders, that lead to a pediatric thesis. The findings were alarming ( $\geq 1/3$  of students having already practiced various "games" of asphyxia;  $1/3$  of them starting in kindergarten), and shared with the school doctors of the region, together with a clinical presentation on consequences of asphyxial practices. Following, a kit (slide-show, back-ground papers, prevention materials...) was created with school doctors for them to be able to act upon any case. Further, the regional representative of the Minister of education informed management school staff that the topic of choking games should become a key component of school-climate and that school doctors could intervene at hand on this topic. Since then, a surveillance system around new cases happening in school is established, based on a common awareness by school and by the hospital children emergency ward.

**Conclusion:** School doctors, through their unique position within school and their expertise on students' health, have a key role to play in screening and preventing asphyxial practices, in close collaboration with emergency pediatricians and private practitioners in charge of children and their parents. A regional coordination is an important condition to create and make alive such a network.

**ID: 118 / PO2: 43**  
**POSTER**

**POST-TRAUMATIC MYOSITIS OSSIFICANS: A CASE REPORT OF SPASTICALLY QUADRIPLEGIC 16-YEAR OLD PATIENT AFTER TRAUMATIC BRAIN INJURY**

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**Introduction:** Post-traumatic myositis ossificans (PTMO) is a condition that in 11-22% follows traumatic brain injury. Hip region is the most commonly involved. Imaging studies are crucial for distinct staging of maturity of the lesion and therefore appropriate intervention.

**Purpose:** to describe phases of PTMO by using high resolution ultrasound (HRUS), power Doppler, radiographs and Multisliced Computed Tomography (MSCT) and discuss their usage in distinct phases.

**Materials and Methods:** case report of spastically quadriplegic 16-year old patient after severe traumatic brain injury who developed PTMO. Follow up consisted of using imaging methods of PTMO 3 months, 6 months and 9 months after traumatic brain injury.

**Results:** in early stage PTMO high resolution ultrasound showed heterogeneous hypoechoic soft tissue masses with hyperechoic core. Positive power Doppler signal was detected. By maturing of the lesion peripheral lamellar calcification and posterior acoustic shadowing were seen using HRUS. In the late, mature stage completely calcified periphery with acoustic shadow were seen. Power Doppler signal was negative. Early



**PO2: POSTER PRESENTATIONS: SESSION 2**

radiographs showed soft tissue edema. By maturing of the lesion well-defined peripheral calcification with coarser central calcification developed. In the late phase PTMO presented as dense calcified lesion in whole. MSCT in early stage showed pale calcification and soft tissue swelling. Maturing of the lesion showed peripheral calcified rim with central zone isodense to muscle. In mature phase dense ossificate was seen.

**Conclusion:** Ultrasound combined with power Doppler is the most useful diagnostic imaging modality for early, immature phase PTMO diagnosis and evaluation of the maturity of the lesion. MSCT optimally evaluates both calcifications as well as soft tissue.

**ID: 114 / PO2: 44**  
**POSTER**

**CURRENT PRACTICE IN THE IDENTIFICATION AND MANAGEMENT OF NEONATAL SEPSIS IN RURAL UGANDA**

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**Introduction:** Neonatal sepsis is estimated to account for 25% of the 4 million neonatal deaths globally per year (1). 99% of these deaths occur in low and middle-income countries where the identification and treatment of neonatal sepsis is commonly inadequate. Infectious illness accounts for 24% of neonatal deaths in Uganda (2). Research suggests that current practice in Uganda does not meet WHO standards. Barriers to improving care include lack of antenatal care and maternal education, and limited access to health facilities.

**Purpose:** To identify the current practice in identification and management of neonatal sepsis in rural Uganda and identify barriers to improvement.

**Materials and Methods:** The setting was Villa Maria Hospital, Masaka, Uganda. Cases of neonatal sepsis over the previous 12 months were identified and a retrospective review of case notes was performed. Outcomes were; demographics, birth history, source of sepsis, investigations performed, type and duration of treatment and clinical outcome. Provision of postnatal education on warning signs was also collected. Informal interviews with staff were performed to obtain an overview of current clinical practice.

**Results:** 37 cases of neonatal sepsis were identified with a mortality rate of 29%. 90% of these babies were not delivered in a hospital. A diagnosis of infection was made clinically as investigations such as blood cultures were not available. Intra-partum risk factors for early-onset sepsis (EOS) were not documented in the notes and prophylactic intra-partum antibiotics were not administered. Routine neonatal observations were not performed and interviews revealed that midwifery staff did not view the care of the neonate to be their responsibility.

**Conclusion:** We have demonstrated that neonatal sepsis is a significant problem in this setting with a high mortality rate. Several basic measures may improve care and help prevent deaths. By instituting regular neonatal observations the rates of identification and therefore treatment of sepsis will be improved. Additionally, adopting guidance for identification of risk factors for EOS has the potential to produce significant change. Attaining access to blood cultures should also be a priority. Further research is needed to identify the current practice for neonatal sepsis in low-resource settings and identify interventions for improvement.

**ID: 160 / PO2: 45**  
**POSTER**

**OPHTHALMIA NEONATORUM: WHEN WE MUST THINK BEYOND**

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**Introduction:** Ophthalmia neonatorum refers to conjunctivitis occurring in the first month of life with a prevalence from 0,1% to 10% depending of the region of the world. The most common cause is bacterial infection (usually Chlamydia trachomatis, Neisseria gonorrhoeae among others), viral infection, or due to a toxic response to topically applied chemicals. Widespread effective prophylaxis has diminished its occurrence to very low levels in industrialized countries. Nevertheless, ophthalmia neonatorum remains a significant cause of ocular infection, blindness, and even death in medically underserved areas around the world.

**Clinical case:** We present a case of a newborn male with 36 hours of life, unremarkable prenatal assessment, including no maternal infections. Born by vaginal delivery at a secondary hospital at 36 weeks with Apgar score (9/9/10), with weight and length suitable for gestational age. It was admitted at neonatal unit for feeding difficulties. On second day of life his was sent for urgent observation by Ophthalmology in a tertiary hospital, because of purulent exudate and eyelid edema of the right eye. Ophthalmologic observation showed marked edema of the upper eyelid of the right eye with an abundant and thick purulent discharge, limiting a correct evaluation of the eyeball even with abundant eye was. This exudate was collected for culture. Orbital CT-scan was performed and showed no signs of globe perforation or intraconal fat involvement. The newborn was admitted at the neonatal unit with diagnosis of ophthalmia neonatorum and treated with a single dose of cefotaxime 100mg/Kg (suspecting of gonococci conjunctivitis) and topic chloramphenicol 3 times a day. On the third day of hospitalization the culture was positive for Escherichia coli and intravenous amoxicillin and clavulanic acid were initiated. During the hospitalization we were informed that it wasn't done any neonatal conjunctivitis prophylaxis. There were no other intercurrents and was discharged after eight days with total resolution of ophthalmological signs.

**Conclusion:** E. coli can cause different infections in the newborn. Ophthalmia neonatorum is rarely caused by this agent. Due to potential severe local complications and systemic infection, accurate etiologic identification is essential for good outcome, as occurred in our case. The authors show a case of neonatal infection by E. coli with atypical manifestation, highlighting the importance that culture and antibiotic sensitivity tests for the better conduct of the clinical case.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 32 / PO2: 46**  
**POSTER**

**RESCUE HFOV IN VLBW INFANTS: INCIDENCE, RISK FACTORS, AETIOLOGIES, MANAGEMENT & COMPLICATIONS**

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**Introduction:** Despite an increase in the use of high frequency ventilation, particularly high frequency oscillatory ventilation (HFOV), as a rescue modality in Very Low Birth Weight (VLBW) infants in recent years, there is a lack of information about its impact on outcomes.

**Aims:** To evaluate if the use of rescue HFOV prognosticates for higher rates of bronchopulmonary dysplasia (BPD) or death, in comparison with the use of conventional mechanical ventilation or non-invasive ventilation. Secondary outcomes - severe BPD, severe retinopathy of prematurity (ROP), intraventricular hemorrhage (IVH), periventricular leukomalacia, necrotising enterocolitis (NEC), duration of stay in neonatal intensive care unit and weight at discharge.

**Methods:** Prospectively collected cohort study using data keyed into and retrieved from the Singapore General Hospital (SGH) Neonatal Department's REDCap database. Inclusion criteria - all VLBW infants < 1500g at birth who were admitted to SGH from 1 January 2012 to 31 January 2015.

**Results:** 151 infants were studied, of whom 15 required HFOV (8.4% of VLBW infants). Rescue HFOV in VLBW was associated with increased BPD or death (OR=11.21, p-value <0.027). Other significant secondary outcomes included IVH (88.9% vs. 23.1%). It was not associated with ROP or NEC. Complications associated with HFOV use included hypotension, thrombocytopenia and pulmonary haemorrhage. Rescue HFOV was associated with lower gestation and birthweights, lower APGAR scores, presence of pre-existing maternal medical conditions and these neonates were more likely to require intubation/chest compression. A common aetiology was persistent pulmonary hypertension of the newborn.

**Conclusion:** Rescue HFOV in VLBW identified a high risk group associated with BPD or death, as well as increased neurological complications.

**ID: 208 / PO2: 47**  
**POSTER**

**RESPIRATORY DISTRESS SYNDROME IN ASSOCIATION WITH PREMATURE TRIPLETS**

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**Introduction and Purpose:** Respiratory distress syndrome (RDS) is a syndrome caused by surfactants insufficiency and lungs immaturity. It mostly occurs among premature (less than 37 weeks' gestation) and/or very low birth weight babies (less than 1500 grams). Some literature mentioned that twins or triplets are not at higher risk of RDS compared to singletons except at very early gestation and there is a significant increased risk of RDS associated with being the second born of premature twins. The exact relationship is still unknown, different theories are still to be verified.

**Materials and Methods:** Case report of a premature baby born as the first triplet with low birth weight presented with RDS.

**Results:** On August 2016, a live female preterm baby (31 weeks, 1100 grams) was delivered by emergency caesarian section in account of fetal distress as evidenced by variable deceleration on cardiotocography examination at Cipto Mangunkusumo Hospital. She was the first baby of the triplets. Apgar score at birth was 7/8. She had breathlessness immediately after birth which is shown as epigastric and subcostal retraction, audible grunting, and tachycardia (>140 b/minute). Neonatal resuscitation was then performed until the baby was stable and moved into NICU. She was diagnosed as RDS. The second baby of the triplets didn't have any respiratory distress, while the third baby died. Mother was a 32-year-old multigravida. She was not known hypertensive nor diabetic. Any history of pre-eclampsia, placenta previa, and placenta abruptio was also denied. She attended antenatal clinic regularly and was not on a therapy for any disease condition. She neither had any trauma prior to delivery.

**Conclusion:** Triplets with preterm birth and low birth weight can be associated with the higher risk of RDS especially at very early gestation. It is not proven that there is any association between the risk of RDS with the birth order in premature triplets. Research on this topic is recommended.

**ID: 94 / PO2: 48**  
**POSTER**

**LONG TERM FOLLOW-UP OF A PATIENT WITH HISTORY OF HYPOXIC-ISCHEMIC ENCEPHALOPATHY AND WHOLE BODY COOLING DONE – A CASE REPORT**

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**Introduction:** Hypoxic-Ischemic Encephalopathy (HIE) is a condition where brain damage occurs in newborns due to reduced cerebral blood flow and/or systemic hypoxemia. This condition is associated with high mortality rate and neurodevelopmental delays. Whole body cooling or therapeutic hypothermia is a treatment method for HIE that reduces the combined risk of death or disability. The treatment gets its neuroprotective effect from lowering the temperature of the brain moderately to 32-34°C, which causes a decrease in cerebral metabolic rate.

**Purpose:** This case report is written to demonstrate a fourth year follow up of a child with a history of hypoxic-ischemic encephalopathy at birth and who underwent whole body cooling.

**Materials and Methods:** The patient was assessed on 12th May 2016 at the age of four years in a regular follow up clinic in a tertiary level children's hospital in Singapore.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**Results:** On April 29th 2012, a female term baby was transferred to a tertiary level children's hospital in Singapore at four hours of age and was diagnosed with stage 2 HIE. The baby was delivered by a crash lower segment C-section due to placental abruption. Whole body cooling was started at four hours of age. Temperature was maintained within a 33-34°C range. The rewarming process was started at 72 hours of age. Patient was discharged on the fourteenth day of life and attends the outpatient clinic for regular follow-ups. She was assessed on May 12th 2016 when she was four years old. Her general health was observed to be very good. She demonstrated normal result in all aspects of growth and developmental with no evidence of neurodevelopmental sequelae.

**Conclusion:** Whole body cooling has been shown to be an effective way to reduce death and disability. This child has shown a very good outcome in all aspects of growth and development. A longer term follow up is needed to assess for learning disabilities at school going age.

**ID: 127 / PO2: 49**  
**POSTER**

**PING-PONG FRACTURE – A CASE REPORT**

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**Introduction:** Ping-pong fractures manifest as a depression deformity of the skull similar to a dent in a ping-pong ball and are classified as a green stick fracture. Congenital ping-pong fractures occur with an estimated incidence of 1 to 2,5 cases per 10000 live births. In some cases, there isn't an identifiable traumatic episode, and therefore they are named "spontaneous". Its etiology had not been fully elucidated. Associated intracranial injuries are rare.

**Case Report:** We report the case of a newborn, weight appropriate for gestational age, born at full-term by eutocic delivery after an uneventful pregnancy. Apgar score was of 9/10 at 1 and 5 minutes, respectively. Physical examination revealed a depression on right parietal region measuring 3 x 2 cm, without skin changes and with normal neurological examination. Skull x-ray showed a parietal depression. Head computerized tomography, performed later, confirmed a ping-pong fracture deforming the underlying brain parenchyma and excluded associated intracranial injuries. The newborn was always clinically stable, without signs of intracranial hypertension. After discussion with neurosurgery, an expectant attitude was decided.

**Conclusion:** Ping-pong fractures are usually benign, resolve spontaneously within 6 months and can often be managed in a conservative way.

**ID: 51 / PO2: 50**  
**POSTER**

**THE EFFECTS OF CHILD POVERTY ON EARLY CHILD DEVELOPMENT. EXPLORING THE RELATIONSHIP BETWEEN CHILD POVERTY AND SCHOOL READINESS IN ENGLAND**

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**Introduction:** Despite the UK being one of the wealthiest countries in the world, there are 3.7 million children living in poverty. Child poverty is associated with a range of adverse health and social outcomes. These children are more likely to have lower life expectancy at birth, have poor health and poor cognitive development. Normal neurological development is essential for a child. There is strong scientific evidence that reveals the effects of poverty on different areas of the brain, which can have long-term consequences on a child's life

**Purpose:** To investigate the extent to which child poverty affects early brain development in the UK by comparing child poverty and school readiness of children aged 5. This can be addressed using the following three objectives:

1. To investigate the relationship between child poverty and school readiness of children across England.
2. To compare child poverty and sex differences in school readiness across England.
3. To compare child poverty and sex differences in the domains of school readiness across England.

**Materials and Methods:** Ecological cross-sectional study of routinely collected data on school readiness in English children at local authority level obtained from the Public Health England Fingertips dataset. The primary exposure of interest was relative child poverty (under-16s). A Pearson's correlation and linear regression was carried out using R.

**Results:** There is a strong negative correlation [ $r = -0.52$ ,  $p < 0.001$ ] between child poverty and school readiness in England. There was a clear sex gap; females have a higher percentage of school readiness compared to boys in each LA. [Insert diagram] The results also showed that the sex differences in school readiness is not correlated with poverty,  $r = 0.12$ ,  $p = 0.1412$  and 95% CI is  $-0.04 - 0.28$ . In each good level of development domain there is a strong negative correlation between child poverty in both males and females [ $p < 0.0001$ ]. Overall, all children performed worst in the literacy domain. The smallest sex gap was in mathematics and personal development and the largest sex gap was in the literacy domain.

**Conclusion:** Child poverty is associated with lower levels of school readiness in English local authorities. Action to address child poverty and to support children in disadvantaged areas is needed to reduce inequalities. These include investment in early years education like pre-school and child centres, government welfare reforms and improved mental health and developmental screening by community practitioners.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 92 / PO2: 51**  
**POSTER**

**NEW APPROACH FOR DIAGNOSTICS OF LONG QT SYNDROME IN ADOLESCENTS-ATHLETES**

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**Introduction:** It is known that stress tests may help to diagnose long QT syndrome (LQTS) without genetic testing. QTc prolongation in the early recovery period (> 480ms in adults) is considered by Pieter Schwartz as new criterion of LQTS diagnostics. But it may be a big problem to make an accurate LQTS diagnosis in young athletes, because many of sportsmen have got acquired QT prolongation.

**Purpose:** To develop new additional simple methods of noninvasive LQTS diagnostics in young athletes.

**Materials and Methods:** 100 healthy adolescents and 220 athletes (footballers, gymnasts, biathlons, hockey players, short-trekkers) including 168 boys 12-16 years old were examined using a bicycle test by Bruce protocol with synchronic ECG recording and manually evaluated RR and QT interval durations. Corrected QT interval (QTc) by Basett formula and  $\delta$ QTc (as difference between maximal and minimal QTc during exercise and recovery) were calculated. Intervals estimation at rest, during exercise and at minutes 3-4 of recovery period.

**Results:** Young athletes had lower heart rate (HR) and higher QT interval duration at rest and at initial load stages (25-50 Wt), due to myocardial hypertrophy and high vagal tone. All the athletes were free of symptoms and, but 3 from 220 have got insignificant borderline QTc prolongation at rest (440-460ms). QTc interval in both groups were somewhat increasing at the first exercise step (25Wt) stage, then going down beyond the original level at load peak (125Wt) and resuming the initial level by minute 3-4 of the recovery. Maximal QTc was recorded at 25 Wt load, not exceeding 450-460 ms in untrained and 460-470 ms in sportsmen. Inadequate QT shortening (QTc at peak load > 400ms), absence of QTc restoration to the initial value by early recovery (QTc at min 4 of recovery > 450ms), and significant  $\delta$ QTc prolongation (> 80 ms) revealed signs of myocardial electric instability and required further examination for LQTS diagnostics. While 3 criteria had been used, LQTS was diagnosed in one girl and verified by genetic tests.

**Conclusion:** Not only inadequate QTc shortening in early recovery period, but also significant QTc delay at early stages of the test and QTc prolongation during exercise test ( $\delta$ QTc) required additional examination for inherited or acquired LQTS diagnostics in adolescents-athletes. These indices in combination with the other Schwartz criteria, were noted to be additional criteria of LQTS diagnostics in athletes.

**ID: 75 / PO2: 52**  
**POSTER**

**THE ASSESSMENT OF PHYSICAL ACTIVITY OF STUDENTS AT LOWER AND UPPER SECONDARY SCHOOLS BELONGING TO THE NETWORK OF HEALTH PROMOTING SCHOOLS IN AND AROUND TARNÓW**

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**Introduction:** Health behaviours and lifestyle are considered to be the main health determiners. Thus, it is important that young people present positive attitudes, and avoid negative behaviours. Researches on health behaviours are an important method of measuring health of the population, especially for the realization of goals connected with health promotion and prevention of diseases.

**Purpose:** The aim of the research was to evaluate the influence of the pro-health activities undertaken by schools that belong to the network of Schools that Promote Health as a lifestyle for young people, including physical activity.

**Materials and Methods:** The survey was carried out in lower secondary and secondary schools from Tarnów and its neighbourhood belonging to the Network of Health Promoting Schools, in two stages: stage I involved students beginning education in a school while stage II was conducted during their final year of education there. The survey was commenced upon obtaining the acceptance and the written consent from the school Administration, parents and students. Each student was informed about a possibility to withdraw from the survey at any stage. The Bioethical Committee of the Regional Medical Chamber in Tarnów gave consent for the survey no. 8/01/77/2010. To analyse the physical activity of students a Modified Physical Activity Questionnaire for Adolescents was used. The obtained results underwent statistical analysis with the use of the Statistica PL 9.0 program.

**Results:** The test was taken by 663 students from five schools that promote health, including 336 girls (51%) and 327 boys (49%). Physical activity is vital for correct development of children and adolescents. Most of the student respondents (98.9%) claimed that they take part in physical education classes. Neither the year of research, nor sex had influence on the declaration of participation in the PE classes and the regularity of that participation. Indeed, boys exercised more often comparing to girls, (test I –  $p=0.0045$ , test II –  $p<0.0001$ ). Additionally, girls limited frequency of physical activities between the tests ( $p=0.0036$ ). The physical activity undertaken by boys was much higher, than that undertaken by girls. They were gasping substantially more often and had a fast heartbeat rate (test I –  $p=0.0390$ , test II –  $p=0.0069$ ). Boys substantially better graded their physical fitness comparing to girls (test I: C – 39.4%, D – 25.9%, –  $p=0.0004$ , test II: C – 38.8%, D – 21.4%, –  $p<0.0001$ ) The girls' grade fell down significantly ( $p=0.0329$ ).

**Conclusion:** Physical activity differs among adolescents depending on sex. Students exercised with less regularity, but in general boys exercised more often, than girls, had longer trainings, better graded their physical fitness, and took part in competitions more frequently.

**PO2: POSTER PRESENTATIONS: SESSION 2**

**ID: 46 / PO2: 53**  
**POSTER**

**ORAL HEALTH OPINIONS AND PRACTICES OF A GROUP OF PEDIATRICIANS**

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**Introduction:** A pediatrician is a primary care physician who deals with the medical care of infants, children and adolescents. Oral health care is certainly substantiated as an integral part of general health. There are conflicting results presented till date on the subject of knowledge, attitude and practice of pediatricians on the oral hygiene.

**Purpose:** Hence, the present study was carried out to evaluate the pediatricians toward oral health of children.

**Materials and Methods:** A questionnaire was distributed among pediatricians practicing in Hospital and Medical School in Istanbul, which consisted of 39 questions seeking knowledge of pediatricians regarding awareness of oral health, including delivery of oral hygiene instructions.

**Results:** The survey was performed on 31 pediatricians, of whom the majority (87%) had 1-10 years of practice. Both the gender is including male-32.3% (10/31) and female-67.7% (21/31) About 65% were doing regular dental checkups for their patients and the most of them provide dental visit for their patients(87%) They all aware Early Childhood Caries and advise regular dental checkups for these patients. A majority of respondents agreed they should conduct caries risk assessments (93.5%), of their patients. Only about 75% reported routinely counseling parents on these topics They all felt counseling about prevention of it should be a part of well-child care. But analyses were limited to pediatricians who provided preventive dental treatment 42% of all respondents.

**Conclusion:** The pediatricians showed reasonable awareness regarding the oral health. However, Pediatricians support providing oral health activities and oral hygiene maintenance instructions.

**ID: 161 / PO2: 54**  
**POSTER**

**A PILOT INTERVENTION TO PROMOTE THE USE OF EYEGLASSES AMONG ROMANI FAMILIES IN ONE CITY IN BULGARIA**

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**Introduction:** Uncorrected refractive error is defined as the lack of eyeglasses for the treatment of myopia, hyperopia, and astigmatism. Research identified uncorrected refractive error as one of the leading causes of visual impairment in Eastern Europe. While several studies on the general health of Romani families have been conducted, research on eye health and care is very limited among Romani families in Eastern Europe.

**Purpose:** The study assessed the effectiveness of a pilot intervention to promote the use of eyeglasses among Romani families in one industrialized city in Bulgaria.

**Materials and Methods:** The intervention used a one-group pretest, posttest design. During the intervention, a total of 33 family members of different ages received eye evaluations by an optometrist.

**Results:** Of the 33 family members, 13 did not have refractive errors and 20 had refractive errors. Of the 20 family members with refractive error, none previously had eyeglasses. These 20 family members selected and received attractive eyeglasses. Adults received eye care education on how to encourage their children to wear eyeglasses. Approximately six months following the end of the intervention in August 2015, 14 of the 20 family members (70.0%) wore eyeglasses and the remaining 6 (30.0%) did not.

**A pilot intervention to promote the use of eyeglasses among Romani families in one city in Bulgaria**

**Conclusion:** Romani people need eyeglasses but do not have eyeglasses. Valuable lessons were learned regarding the feasibility of conducting a research study in a poor Romani neighborhood. One limitation is that the participants had to visit the optometrist in the downtown area of the city. Males were especially less likely to participate than females. Future interventions that bring the optometrist to the neighborhood where Romas live may be more successful in recruiting additional participants. The lessons learned can be used in future efforts to implement interventions in Romani communities and help promote the health of underserved populations.

**ID: 71 / PO2: 55**  
**POSTER**

*Topics:* ADOLESCENTS HEALTH CHOICES

*Keywords:* health-promoting behaviours, adolescents, nutrition, health promotion

**THE ASSESSMENT OF DIET OF STUDENTS AT LOWER AND UPPER SECONDARY SCHOOLS BELONGING TO THE NETWORK OF HEALTH PROMOTING SCHOOLS IN AND AROUND TARNÓW**

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**Introduction:** Healthy, rational nutrition is one of the basic needs of the man and a condition of a proper development, good state of being as well as a full disposition to learn. Fitly balanced diet during adolescence is necessary for a proper development of a young organism and preservation a good health at a later age.

**Purpose:** The aim of the survey was to assess the impact of pro-health activities undertaken by schools belonging to the Network of Health Promoting Schools on teenagers' nutrition.



**PO2: POSTER PRESENTATIONS: SESSION 2**

**Materials and Methods:** The survey was carried out in five lower secondary and secondary schools from Tarnów and its neighbourhood, in two stages: stage I involved students beginning education in a school while stage II was conducted during their final year of education there. The schools in which the survey was conducted belong to Małopolska Network of Health Promoting Schools. In the study all the children present in the classroom on the survey day were included. No intrusive testing or discontinuance of tissues as well as exercise stress tests were conducted during the study. Between stage I and stage II an education programme regarding health nutrition was completed. The survey was commenced upon obtaining the acceptance and the written consent from the school Administration, parents and students. Each student was informed about a possibility to withdraw from the survey at any stage. The Bioethical Committee of the Regional Medical Chamber in Tarnów gave consent for the survey no. 8/01/77/2010. The students completed the survey questionnaire consisting of the socio-demographic and problem parts. The problem part contained questions regarding nutrition based on the questionnaire prepared and applied by Institute of Nutrition of Department of Public Health, Collegium Medicum of the Jagiellonian University in Cracow. The surveys were filled in by the students individually (self-questionnaire) during school lessons with the teacher and the author of this work present. In the case of each student, anthropometric measurements were carried out (height, body mass, BMI, WHtR). The results were referred to the growth charts. The obtained results were made subject to the statistical analysis with the use of Statistica PL 9.0.

**Results:** The study covered 663 students, i.e. 336 girls (51%) and 327 boys (49%). In stage I 86.1% of the students had breakfast daily and in stage II 84.2%. Boys and girls in stage I had on average 4 meals a day ( $C=3.81\pm0.86$ ,  $D=3.65\pm0.91$ ), similarly to stage II ( $C=3.89\pm0.88$ ,  $D=3.59\pm0.91$ ). Slightly over half of the students had meals regularly (definitely yes and rather yes - 57% - stage I, 58.2% - stage II). In the course of the education, there was a decrease in the consumption of dairy products, including milk ( $p<0.0001$ ), yoghurt ( $p<0.0001$ ) and cottage cheese ( $p=0.0338$ ), the consumption of flour products did not change, only boys significantly reduced the consumption of wholemeal bread ( $p=0.0351$ ), whereas girls significantly reduced the consumption of cereals and rice ( $p=0.0470$ ). Undesirable products were eaten significantly more often by the boys in both stages (stage I -  $p<0.0001$ , stage II -  $p<0.0001$ ). The consumption of fast-foods by boys did not change (stage I -  $3.00\pm1.17$ , stage II -  $3.01\pm1.18$ ), with a significant decrease in the case of girls (stage I -  $2.84\pm1.05$ , stage II -  $2.66\pm1.01$ ,  $p=0.0062$ ).

**Conclusion:** Gender determines health behaviours of youth, including eating habits. Both boys and girls need continuous education as regards healthy nutrition. Unfortunately, education in a health-promoting school does not significantly impact an improvement of students' eating habits.

**ID: 88 / PO2: 56**  
**POSTER**

**THE CERVICAL TRAUMA IN CHILDREN: DIFFICULTIES IN DIAGNOSIS AND TREATMENT CHOICE**

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Cervical trauma in children are often misunderstood and treated incorrectly. Injuries of the cervical spine are relatively rare in children but are a distinct clinical entity compared with those found in adults. The unique biomechanics of the pediatric cervical spine lead to a different distribution of injuries and distinct radiographic features.

The treatment of cervical spine injuries in children must be founded on an understanding of spine development. Differences in injury patterns, interpretation of radiographic studies, and management of injuries are a direct result of the unique anthropometrics and biomechanics of a child.

The literature specifically addressing cervical spine injuries in children has been scarce; most studies have been focused on adults. In more recent years, as distinct aspects of the pediatric spine have been better appreciated, more attention has been given exclusively to injuries of the cervical spine in younger patients. We describe two cases of cervical trauma of different entity for which the incorrect evaluation of the trauma led to a difficult diagnostic-therapeutic path.

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