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PEDIATRICS | CONFERENCE ABSTRACTS

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ID: 264 / OP-L-1: 1
Oral Presentation
Topics: INFECTIOUS DISEASES, COVID-19
Keywords: COVID-19, SARS-CoV-2 antibodies, Pediatric age

Serological tests for post SARS-COV-2 infection in pediatric age

Vasconcelos, Joana[1]; Matos, Vitória[2]; Brito, Maria João[1]
[1]Pediatric Infectious Diseases Unit, Hospital Dona Estefânia, CHULC, Portugal; [2]Immunology and Infectious Serology Department, CHULC, Lisbon, Portugal

Introduction: When the pandemic started, the serological tests for SARS-CoV-2 were quickly developed. However, the results in pediatric age are limited, and the immune response to the virus is poorly known.

Aim: Evaluate the serological response of hospitalized patients suffering from SARS-CoV-2 in a tertiary pediatric hospital.

Methods: Descriptive study of the serological condition of patients under 18 after their hospitalization due to COVID-19, from April 2020 to May 2021. The method used was electrochemiluminescence with the reagent Elecsys® Anti SARS-CoV-2 from Roche.

Results: From a total of 207 patients, 162 (78,3%) developed SARS-CoV-2 antibodies. The median age was 6 years (min 13 days; max 17 years), 60% were male. 71/162 (43,8%) were asymptomatic and hospitalized for another pathology. The remaining 91 of 162 cases were symptomatic, and the diagnosis was multisystemic inflammatory syndrome associated with COVID-19 (MIS-C) (17,9%), COVID-19 (16%), pneumonia (13,6%), small infant sepsis (5%), CNS disease (2,3%) and myocarditis (1,2%). Of these 91 symptomatic cases, 9% had mild disease, 40% moderate, 15% severe and 36% critical. 30% of these had a chronic disease, and 4,4% were on immunosuppressants. The antibodies were detected with a median of 4 months post-infection (min 1 month; max 13 months). Of the 45/207 (21,7%) patients who did not develop antibodies, the median age was 5 years (min 21 days; max 18 years), and 62% were male. 25/45 were asymptomatic and hospitalized for another pathology. The rest of 20/45 were symptomatic patients, and their diagnosis were pneumonia (13), COVID-19 (5), small infant sepsis (1) and CNS disease (1). As for severity, 10% had mild disease, 50% moderate, 30% severe and 10% critical. Three of those patients had a chronic disease. Pneumonia was associated with severe disease (<0,01); however, in most cases, antibodies were not detected (p=0,015).

Conclusion: The duration of antibodies after the infection by SARS-CoV-2 in pediatric age remains unknown. However, in this study, it is higher than the reported in studies made with adults, and it can give information for the understanding of the immunity to COVID-19 in the long term.

ID: 267
Oral Presentation
Topics: INFECTIOUS DISEASES, COVID-19
Keywords: covid-19, cardiac involvement, paediatric

Cardiac involvement in a paediatric cohort with COVID-19

Simoes, Joao Ferreira[1]; Lemos, Ana Pereira[1]; Valsassina, Rita[1]; Garcia, Ana Margarida[1]; Silva, Tiago Milheiro[1]; Gouveia, Catarina[1]; Laranjo, Sergio[2]; Trigo, Conceicao[2]; Pinto, Fatima[2]; Brito, Maria Joao[1]

[1]Paediatric Infectious Diseases Unit, Department of Paediatrics, Hospital Dona Estefânia, Centro Hospitalar Universitário de Lisboa Central, Portugal; [2]Paediatric Cardiology Department, Hospital de Santa Marta, Centro Hospitalar Universitário de Lisboa Central, Lisbon, Portugal

Background: Until august 2021, 144015 children and adolescents under 18 years old were diagnosed with SARS-CoV-2 infection in Portugal. Although COVID-19 is usually mild in the paediatric population, children may be severely affected. Cardiac involvement may result from direct viral cytopathic myocardial injury, hypoxic-induced ischemia and exaggerated inflammatory response.

Methods: Case series including all children (<18 years) admitted with COVID-19 to a tertiary paediatric hospital from march/2020 to august/2021. We analysed socio-demographic data and looked for myocardial dysfunction biomarkers (troponin and NT-proBNP higher than 2 times the normal range), electrocardiogram (ECG) and/or cardiac imaging findings (echocardiogram and magnetic resonance image (MRI)).

Results: Of a total of 395 patients admitted with SARS-CoV-2 infection, 171 children had COVID-19, and the remaining 224 were admitted due to other medical or chirurgical conditions with detected SARS-CoV-2 by RT-PCR. The median age of the COVID-19 group was 3.9 years (P25-P75 0.7-10.0) and 104 patients (61%) were male. Main diagnosis included: COVID-19 pneumonia (84), MIS-C (59), COVID-19 (11), small infant sepsis (6), sepsis (4), encephalitis/meningitis (4), myocarditis (1), acute hepatic injury (1) and myositis (1). 63/171 (37%) showed evidence of cardiac involvement. Biomarkers of cardiac injury were elevated in 76/171 (44%) and 63/171 (37%) had values that were 2 times higher than the normal range: NT-proBNP (37), both troponin and NT-proBNP (26). Alterations in the ECG were found in 17/171 (10%); 12 of whom presented with biomarker elevation. The ECG abnormalities were: sinusal tachycardia (6), unspecified repolarization alterations (2), PR prolongation (2), PR depression (1), atrioventricular block (1), T wave inversion (1), left ventricular (LV) hypertrophy (1), low-voltage QRS (1), sinusal bradycardia (1) and ST depression (1). Echocardiographic alterations appeared in 24/171 cases (14%): mitral regurgitation (11), pericardial effusion (6), tricuspid regurgitation (4), reduced ejection fraction (3), coronary dilatation (2), LV dilatation (1), atrioventricular valvulitis (2), LV hypertrophy (2), interventricular septum dyskinesia (2). Cardiac MRI 6 months after discharge was performed in 10 patients, showing alterations in 5 individuals: subepicardial necrotic scarring of the LV inferior wall (3), interventricular septum fibrosis (1), and coronary dilation (1).

Conclusions: Although rare, cardiovascular involvement in children with COVID-19 can be severe. In our cohort, which included exclusively children with COVID-19, cardiac involvement was present in more than one third of the cases. Multidisciplinary workup is essential to adequately manage these patients. Long-term consequences of paediatric severe COVID-19 remain uncertain, reinforcing the importance of long-term follow-up.

ID: 252
Oral Presentation
Topics: GENERAL PEDIATRICS, COVID-19
Keywords: adolescents, COVID-19, children, vaccine, vaccination

COVID-19 vaccination in pediatric age - what do parents know and think?

Dias, Margarida[1]; Cardoso, Beatriz Falcao[1]; Moreira, Tatiana[1]; Simoes, Diana[1]; Pinheiro, Marta[1,2]; Maia, Ana[1,2]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal; [2]Department of Gynecology-Obstetrics and Pediatrics, Faculty of Medicine of the University of Porto, Portugal

Background: Vaccination against COVID-19 in pediatric age has been a hot topic recently. This study aimed to assess parents' intention to vaccinate their children against COVID-19 and identify which factors may influence this decision.

Methods: An observational study was conducted between June and July 2021 by applying an anonymous questionnaire to a sample of caregivers of children and adolescents followed in ambulatory care in a Portuguese central hospital. We included sociodemographic data, immunization history, personal background, exposure to COVID-19 and caregivers' beliefs. At the time of the study, there was still no official recommendation from health authorities regarding vaccination in pediatric age.

Results: A total of 78 questionnaires were conducted. The mean age of the children was 9.2 years (±5.9), 56.4% were male, 94.8% had an updated immunization history, and 65.8% had extra vaccines. Of these children, 22.1% had comorbidities. Among the caregivers, 83.3% were mothers, the mean age was 39.4 years (±9.4), and 26.9% had attended university. The vaccine was considered safe by 61.5%, and 34.6% answered they did not know whether to consider it safe or not. Information about the vaccine was obtained through television in 84.6%, social networks in 42.3% and 34.6% in the information given by health professionals. Regarding the intention to vaccinate their children, 76.9% answered "yes", 7.7% did not answer and 15.4% answered "no". The vaccine's ineffectiveness (n=5) and inappropriate age (n=3) were the most cited reasons not to vaccinate. In 82.9%, the number of doses of the vaccine would not influence the decision.

Conclusions: The study results show that caregivers have considerable resistance to the vaccination of children and adolescents against COVID-19, mainly based on the belief in the vaccine's ineffectiveness. The majority obtained information about the vaccine in the media, which reinforces the importance and the opportunity for intervention by transmitting credible and perceptible information in these media.

ID: 334
Oral Presentation
Topics: NUTRITION & DIETS, ADOLESCENT MEDICINE, COVID-19
Keywords: Eating disorders, public health, hospital discharge, cross-sectional study

Eating disorder issues in the adolescent population during theCOVID-19 pandemic: a cross-sectional study of discharge records in developmental ages in Italy.

Lo Moro, Giuseppina[1]; Mamo, Carlo[2]; Lemma, Patrizia[1]; Borraccino, Alberto[1]
[1]University of Torino, Italy; [2]Epidemiology Unit, ASL TO3, Piedmont Region, Grugliasco, Italy

Background: COVID-19 consequences had negatively impacted healthcare services during the pandemic hospitalizations, and the use of many health services were drastically reduced, with some exception for urgent non-deferable conditions, with effects on people's mental health, especially in developmental ages, where difficulties in coping with the situation might have had an impact on eating behaviours. We, therefore, aimed to explore hospitalizations for eating disorders (ED) before and during the pandemic to identify any possible changes due to this unprecedented crisis.

Methods: We performed a retrospective cross-sectional study of all discharge records in patients aged 5–19 years in the Piedmont region in Italy. Overall hospitalization, age and gender-specific rates, and the proportion of hospitalization due to eating disorders in 2020 were compared to those in 2018-2019.

Results: the overall number of hospitalizations for any cause in developmental ages were reduced by 32% (-31% in the 15–19 years- of-age group; −29% in the 10–14 years of age; −36% in the 5–9 years-of-age group). Overall Hospitalizations due to ED reduced by 14%, with a decrease of about 19% in the oldest group and about 30% in the youngest one but a 3% increase in the 10 to 14 years-of- age group. The most frequently diagnosed disorder was anorexia nervosa, accounting for at least 55% of all eating disorder hospitalizations.

The total proportion of hospitalizations for ED in 2018-2019 significantly increased from 13.6‰ to 17.3‰ in 2020 ($p < 0.05$). The same significant increase was observed in the three age groups: 23.0 ‰ vs 27.0 ‰ ($p<0.05$) in the 15–19 years-of-age group, 12.1 ‰ vs 17.5‰ ($p<0.05$)in the 10-14, and 2.5‰ vs 2.7‰ (NS) in the 5–9 years-of-age group, respectively. Overall, the age-specific crude rate slightly decreased over the studied period, except for the 10–14 age group. The 2018-2019 mean prevalence in the three age groups was 1.33, 0.51, 0.11 per 1000 individuals, and the 2020 prevalence was 1.08, 0.53, 0.08 for the 15–19 years, 10–14 years, 5–9 years of age, respectively.

Conclusions: During the pandemic, hospitalizations for ED decreased, but less than other hospitalizations. The proportion of hospitalizations for these conditions has increased, particularly in the 10 to 14-year-of-age group, which also showed a slight increase in the raw prevalence. Determinants of this increase should be further investigated, as it might be the tip of an iceberg that represents a serious public health concern.

ID: 214
Oral Presentation
Topics: COVID-19
Keywords: Autism spectrum disorder (ASD), COVID-19 pandemic, Routine

Impact of one-year pandemic on children with autism spectrum disorder

Rebelo, Ana Torres; Pinto, Diana Henriques; Cunha, Rosário; Monteiro, Diana Reis; Sá, Liliana; Monteiro, Virgínia; Monteiro, Joana
Centro Hospitalar entre o Douro e Vouga, Paediatrics, Santa Maria Da Feira, Portugal

Introduction and Aims: The COVID-19 pandemic is an unprecedented situation that has brought us numerous challenges. Because they are particularly vulnerable to changes in routine, children with autism spectrum disorder (ASD) are particularly at risk. In this study, we evaluated the effects of a year of the pandemic on these patients regarding the change in their behaviour, habits and impact on the socio-family context.

Methodology: Retrospective study, through the application of an anonymous questionnaire, by telephone consultation, to 47 caregivers of children with ASD followed in the Development Consultation.

Results: In the study population, we obtained a predominance of males (91.5%), and the average age was 5 and a half years. Compared to the pre-pandemic period, we found a decrease in physical activity practice (0.69 vs 1.09 days/week; $p<0.001$) and a significant increase in screen exposure time (3.08 vs 1.09 h /day; $p<0.001$). We did not identify appreciable changes in sleep quality. As for behaviour, 45% of caregivers reported an increase in irritability/anxiety/aggression periods, and 19% pointed to a regression in psychomotor acquisitions. In 51% of cases, support was continued

in person. The negative impact was also felt in 34% of caregivers with greater fatigue/stress, and the majority (77%) tried to maintain routines at home.

Conclusion: The changes in routine imposed by COVID-19 led to modifications in the habits of children with ASD, namely less physical activity and longer exposure to screens, with negative consequences for their emotional regulation. It is essential to keep close monitoring of these patients and their caregivers to prevent the negative effects of the pandemic.

ID: 217
Oral Presentation
Topics: EMERGENCY PEDIATRICS, COVID-19
Keywords: Pulmonary embolism, risk factors, COVID-19

Massive pulmonary embolism in an adolescent

Rebelo, Ana Torres[1]; Rodrigues, Sara[1]; Fontoura-Matias, José[2]; Azevedo, Inês[2]; Fernandes, Sofia[1]
[1]Centro Hospitalar entre Douro e Vouga, Paediatrics, Santa Maria Da Feira, Portugal; [2]Centro Hospital Universitário de São João, Paediatrics, Porto, Portugal

Introduction: Pulmonary embolism (PE) is uncommon in the pediatric population. It is a misleading pathology since it rarely manifests with the classic triad of pleuritic chest pain, dyspnea and hemoptysis. Furthermore, the most common symptoms, dyspnea and cough, may mimic other respiratory diseases. CT pulmonary angiography (CTPA) remains the gold standard in diagnosis. Doctors should be aware that PE can occur in children and highly suspect those with risk factors.

Case Presentation: A previously healthy 17-year-old girl was admitted with cough and breathing difficulty for two days. She denied fever, pleuritic chest pain and hemoptysis. The oral contraceptive was started 6 months earlier. Her sister tested positive for SARS- CoV-2. On examination, she was anxious, alert and afebrile. Oxygen saturation was 96% in air. She was hypotensive, tachycardic and tachypneic, but pulmonary auscultation was normal. She had marbled skin. Blood tests showed a normal hemogram and leukogram. Capillary blood gas revealed respiratory acidosis. D-dimer test was raised (6569 ng/mL), as well as troponin (182ng/L). CTPA showed pulmonary hypertension secondary to acute bilateral pulmonary embolism. On ECG QRS interval was prolonged (114 ms). An echocardiogram revealed signs of right ventricular overload with mild dysfunction. Chest X-ray showed no effusions. The adolescent tested negative for SARS-CoV-2. PE with severe cardiovascular instability was diagnosed. After stabilizing vital signs (with intravenous fluids and oxygen therapy) and anticoagulation with enoxaparin (60mg), she was transferred to a hospital with pediatric cardiology. On the third day of hospitalization, a left pleural effusion was detected, and she started furosemide, which was maintained until discharge. The adolescent was anticoagulated with enoxaparin and warfarin for 13 days with full recovery. Doppler ultrasound of the lower limbs and chest X-ray were normal. Reevaluation by pediatric cardiology at discharge revealed no structural heart disease. Hypercoagulability screening was normal. Anticoagulation with warfarin was kept for 6 months.

Discussion: The majority of pediatric venous thrombosis is related to underlying medical or surgical risk factors, such as malignancy, trauma or surgery. Oral contraceptives have also been identified as a risk factor, particularly within the first year of treatment. Our patient did not have any genetic predisposition. The oral contraceptive may have played a role in predisposing the adolescent to PE. The family history of positivity for COVID-19 may have initially caused confusion about the diagnosis; however, as there was a high suspicion of PE and D-Dimers did not exclude it, CTPA was requested, allowing early diagnosis of PE. This case underlines the need to keep in mind PE in a pediatric patient presenting with unjustified shortness of breath, hypotension, tachypnea

and tachycardia, especially if the X-ray is normal. The coexistence of thrombo-embolic risk factors should alert the clinician about possible thromboembolism.

ID: 277
Oral Presentation
Topics: INFECTIOUS DISEASES, NEONATOLOGY, COVID-19
Keywords: Maternal SARS-CoV-2 infection, horizontal transmission, perinatal SARS-COV-2 infection, follow-up

Maternal SARS-CoV-2 infection: what to expect in newborns

Cunha, Rosário; Rebelo, Ana; Ribeiro, Fátima; Menezes, Fátima; Caldeira, Teresa
CHEDV, Portugal

Background: The COVID-19 pandemic has changed the paradigm when it comes to infection control. However, there are still many doubts about pregnancy and the perinatal period in this context, even though many studies suggest the benignity of infection in this phase. The present study took place in a Level II Hospital with differentiated perinatal care and describes the newborns whose mothers were infected with COVID-19 during pregnancy. We aim to understand the mother-newborn pattern of transmission and clinical, analytical and serologic follow-up.

Methods: Prospective observational study from 1/4/2020 to 31/5/2021, using the clinical files of every SARS-COV-2 PCR-positive mother and their newborns. Among others, we evaluated the state of infection of the newborn at 12 and 48h and after 14 days with SARS-Cov-2 PCR tests. In the first three months, serologic and clinical evaluation were performed.

Results: Of the 1684 live births, 60 (3,6%) mothers were infected with SARS-COV-2 during pregnancy, 43% of which were diagnosed in the screening performed during/before labour. The median value of gestational age was 39 weeks, and the average weight was 3171g. 81,7% of the newborns remained with their mother in the hospital ward, and 85% were breastfed. 7 newborns (11,7%) needed NICU, one of which was born at 32 weeks because the mother needed ICU support due to COVID-19. Of the 26 newborns whose mothers were positive in labour, 15 were tested for SARS-Cov-2 PCR in the first 12 h, and 21 within 48h: all of them were negative.16 were tested after 14 days. Only one of them (6,2%) tested positive but remained asymptomatic. Serologic anti-spike and anti- nucleocapsid analyses were performed in 32 babies: 10 of them (31.3%) showed positive antibodies. In these cases, 80% of the mothers were positive in the 3rd trimester and 20% in the 2nd trimester. The clinical follow-up showed a positive outcome in all of them.

Conclusions: This study supports others that show the benignity of perinatal SARS-COV-2 infection. There were no more significant rates of prematurity or NICU need. None of the newborns tested positive in SARS-Cov-2 PCR tests in the first 48h, supporting the rarity of the vertical infection, and only one has been affected by horizontal transmission.

ID: 261
Oral Presentation
Topics: COVID-19
Keywords: COVID-19, SARS-CoV2, Newborn

Neonates born to mothers infected with SARS-CoV-2 at time of birth – the reality of a portuguese hospital

Ribeiro, Rita Calejo[1]; Alba, Diana[1]; Moreira, Mafalda[1]; Oliveira, Abilio[2]; Matos, Joana[2]

[1]Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Portugal; [2]Neonatology Unit, Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Portugal

Background: The coronavirus disease 2019 (COVID-19), caused by infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was declared a pandemic for over a year and affected the health and living of the population worldwide. Certain groups are considered more vulnerable, in particular, pregnant women and newborns. Vertical transmission is thought to be rare. However, it is important to know maternal and neonatal outcomes in the context of maternal SARS-COV-2 infection at the time of birth.

Methods: A retrospective cohort analysis of all newborns born to mothers infected with SARS-CoV-2 at time of birth, at a level two hospital, from March 2020 to August 2021. The diagnostic test used was the detection of viral RNA by polymerase chain reaction (PCR) of nasopharyngeal swabs. Clinical information was obtained by electronic medical records.

Results: From March 2020 to August 2021, 59 newborns were born to SARS-CoV-2 positive mothers. The majority of mothers (93%) were asymptomatic or had mild symptoms, 5% had moderate disease (pneumonia), and 2% had severe disease (respiratory failure), with admission to an intensive care unit. 7% were preterm deliveries. 24% were cesarean deliveries, 21% because of maternal respiratory distress, 7% because of fetal distress and 72% due to obstetric factors. The median Apgar score at the 1st minute was 9, with a minimum of 4. Rooming-in was possible in 85% of cases, with proper precautions. The first newborn born to an infected mother at the hospital was isolated because of initial guidelines, whereas the others were separated because of other medical conditions from the mother or the newborn. 80% were breastfed, 70% of these exclusively. Detection of viral RNA by PCR of nasopharyngeal swabs was routinely performed at birth and 48 hours of life. At birth, only one asymptomatic newborn had a positive test result, with two subsequent negative tests. At 48 hours of life, other asymptomatic newborns had a positive test, which was repeated and turned out negative. 66% of the placentas were tested for SARS-CoV-2, all negative. One preterm newborn died in the neonatal intensive care unit, and posteriorly detection of viral RNA by PCR was positive in lung and heart tissues.

Conclusions: Management of newborns born to mothers infected with SARS-CoV-2 has evolved since the begging of the pandemic. The vast majority of newborns of infected mothers have been asymptomatic. Skin-to-skin contact, rooming-in and breastfeeding should be supported, as long as proper hygiene measures are assured.

ID: 227
Oral Presentation
Topics: ENDOCRINOLOGY, COVID-19
Keywords: Type 1 Diabetes Mellitus; COVID-19; SARS-CoV-2; Child; Pandemics

New-onset type 1 diabetes in children during the COVID-19 pandemic – a Tertiary Centre Experience

Leite-Almeida, Laura[1]; Lopes de Bragança, Raquel[1,2]; Salazar, Daniela[2,3,4]; Ferreira, Sofia Helena[5]; Costa, Carla[5]; Santos- Silva, Rita[2,5]; Ramos, Angélica[6]; Cardoso, Maria João[6]; Guimarães, Tiago[2,6]; Castro-Correia, Cintia[2,5]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal; [2]Faculty of Medicine, Universidade do Porto, Porto, Portugal; [3]Department of Endocrinology, Diabetes and Metabolism, Centro Hospitalar Universitário de São João, Porto, Portugal; 4Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Porto, Portugal; [5]Pediatric Endocrinology and Diabetology Unit, Centro Hospitalar Universitário de São João, Porto, Portugal; [6]Department of Clinical Pathology, Centro Hospitalar Universitário de São João, Porto, Portugal

Background: Viral infections, including coronaviruses, are well-known triggers for developing type 1 diabetes (T1D). A potential diabetogenic effect of SARS-CoV-2 has been proposed. However, data on new-onset type 1 diabetes in children during the COVID-19 pandemic is still scarce and conflicting. Therefore, we aimed to characterize new-onset T1D in children from a tertiary care hospital and investigate a possible relation with SARS-COV2 exposure.

Methods: Retrospective single-centre study including patients with new-onset T1D, diagnosed and treated in our Unit, between March 1st and December 31st, 2020. Data were compared to new-onset T1D during the equivalent period in the previous 6 years. Nasopharyngeal swabs for SARS-COV-2 reverse transcriptase-polymerase chain reaction testing and serological testing were performed. An age-adjusted control group for serological results was used for comparison.

Results: Nineteen cases of new-onset T1D were diagnosed, versus a mean of 10.8 cases per year, in the same period from 2014 to 2019. The mean age at diagnosis was 10.34 ± 4.48 years, and 11 patients (57,9%) were male. Diabetic ketoacidosis was more common in 2020 (n=8, 42.1% vs n=21, 32.3%) and more severe. Before diagnosis, the duration of symptoms was longer this year than in previous ones (40.7± 47.22 vs 24.08 ± 23.36 days). All SARS-COV-2 serologies and RT - PCR were negative in new diagnosed T1D patients and the control group.

Conclusions: The direct diabetogenic effect of SARS-CoV-2 did not seem to be crucial to the increase in pediatric T1D incidence during the 2020 COVID-19 pandemic, but other factors must be considered. The cumulative consequences of lesser exposure to other viruses, psychological stress and reduced access to health resources must be elucidated through international collaborative projects to overcome epidemiological specificities that may justify disparities found in previous reports.

ID: 249
Oral Presentation
Topics: GENERAL PEDIATRICS, EMERGENCY PEDIATRICS
Keywords: Pediatric Intensive Care Unit, long-term outcomes, follow-up

Standardized prospective long-term multidisciplinary follow-up of patients admitted to the pediatric intensive care unit: a model for continuous data driven improvement of health care

de Sonnaville, Eleonore Susanne Victoria; van Woensel, Job B.M.; Otten, Marieke H.; Haverman, Lotte; Königs, Marsh; Oosterlaan, Jaap; Knoester, Hennie
Emma Children's Hospital, Amsterdam UMC, Netherlands, The

Background: Long-term morbidity after Pediatric Intensive Care Unit (PICU) admission is a growing concern, including physical, neurocognitive, and psychosocial functioning impairments. Given the distinct heterogeneity in the PICU population and heterogeneity in impairments that may occur in patients admitted to the PICU and their families, high quality multidisciplinary structured follow-up with a holistic approach is necessary for patients after PICU admission and their parents.

Methods: We designed a standardized multidisciplinary follow-up program for patients aged 0-17 years who were unexpectedly referred to the PICU of the Emma Children's Hospital of the Amsterdam UMC, the Netherlands. Follow-up care is offered by at least a pediatric intensivist and a psychologist. Depending on disease and treatments received at the PICU, patients may additionally receive care from the pulmonologist, cardiologist, neurologist and/or neuropsychologist. In addition, also parents receive care from a psychologist.

Results: Between March 2018 and July 2021, 307 patients visited our outpatient follow-up clinic 3-6 months after PICU admission. Results show that patients may experience impairments in a great

variety of outcomes. These include impairments in physical functioning (e.g. 9.0% decreased exercise tolerance, 24.8% scars, 14.8% withdrawal symptoms, 18.6% sleeping problems), neurocognitive functioning (e.g. intelligence), and psychosocial functioning (e.g. 11.4% post-traumatic stress disorder (PTSD)). In addition, also parents may experience problems, such as PTSD (6.8% of fathers and 13.6% of mothers), distress (30.8% of fathers and 48.0% of mothers), anxiety (11.1% of fathers, 28.1% of mothers) and depression (7.8% of fathers and 17.0% of mothers).

Conclusions: PICU survivors are at risk of impairments in physical, neurocognitive and psychosocial functioning. In addition, also parents are at risk of impairments in psychosocial functioning. These findings underscore the importance of high quality multidisciplinary structured follow-up with a holistic approach in patients after PICU admission and their parents.

ID: 357
Oral Presentation
Topics: ALLERGY, IMMUNOLOGY & RESPIRATORY, ADOLESCENT MEDICINE, EMERGENCY PEDIATRICS
Keywords: SPONTANEOUS PNEUMOTORAX, ADOLESCENT, SURGERY

Approach of spontaneous pneumothorax in pediatric age

Catarino, Sara[1]; Branco, Sofia[2]; Ferreira, Mariana[3]; Rodrigues, Jorge[3]; Dias, Mariana[4]; Campos, Miguel[4]
[1]Pediatrics Department, Centro Materno Pediátrico, Centro Hospitalar Universitário de São João; [2]Pediatrics Department, Centro Hospitalar Póvoa de Varzim/Vila do Conde; [3]Pediatrics Department, Centro Hospitalar Tondela-Viseu; [4]Pediatric Surgery Department, Centro Hospitalar Universitário de São João

Background: Spontaneous pneumothorax (SP) has an estimated incidence of 5-10/100,000 children/year, and its prevalence is typically higher in juvenile patients. However, the current knowledge about SP in pediatric age is extrapolated from data in adults. Therefore, the initial approach to a primary SP (PSP) episode in this age group is particularly controversial. We aimed to characterize SP cases, comparing distinct therapeutic approaches and evaluating their optimal treatment and efficacy.

Methods: We conducted a retrospective and descriptive study. We included all children and adolescents admitted to the Pediatric Surgery Service in our hospital with an SP diagnosis between January 1st 2013, and December 31st 2020. We excluded patients with trauma history or possible recent iatrogenic mechanisms and aged under 28 days. Data was collected by consulting the participants' electronic files. Statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS), and results were considered significant at $p<0.05$.

Results: We analyzed the demographic and clinical features of 83 patients. Most were males (86.7%; n=72) and had a median age of 16.0 years. Pneumothorax episodes were predominantly primary (73.5%; n=61) and left-sided (55.4%; n=46). For the majority, this was the first episode (51.8%; n=43). Chest pain was the most frequent symptom (90.4%; n=75). Only 6.0% (n=5) of patients had a smoking background, and 3.6% (n=3) had a family history of pneumothorax. Initial treatment included chest drain (45.8%; n=38), high- flow oxygen (34.9%; n=29) and thoracocentesis (19.3%; n=16). There was a lack of response to initial therapy in 53.0% (n=44) of the cases. Sixty patients (72.3%) had a chest drain placement at admission for a median of 5.0 days. The definitive treatment was primarily surgical (55.4%; n= 46) and, in all patients, performed by video-assisted thoracoscopic. Pleurectomy was the most frequent approach to the pleura (24.1%; n=20). Approximately one-third of the patients had pulmonar blebs (37.3%; n=31) and emphysematous changes (33.7%; n=28) detected during surgery. The recurrence rate was 42.2%. Group comparison showed that patients with pneumothorax recurrence were more likely to have a previous history of pneumothorax (p=0.034), a shorter hospital stay duration (p=0.042) and fewer chest drain placement at admission in the first episode (p=0.043).

Conclusions: PSP in children is common and increasing in incidence. Mostly, the first-line management was conservative and failed in more than half of the patients. Recurrence after the first episode of PSP in children is frequent. In general, an upfront surgery might be considered an optimal strategy for juvenile PSP management.

ID: 339

Oral Presentation

Topics: ADOLESCENT MEDICINE, PUBLIC HEALTH

Keywords: Adolescent, Sexual health, Health Behaviour in School-aged Children, LGBT+, Condom use

Attraction and love as predictors of sexual behaviour in European adolescents

Költő, András[1]; Young, Honor[2]; Godeau, Emmanuelle[3]; Saewyc, Elizabeth M.[4]; Nic Gabhainn, Saoirse[1]

[1]Health Promotion Research Centre, National University of Ireland Galway, Galway, Ireland; [2]School of Social Sciences, Cardiff University, Cardiff, Wales; [3]École des Hates Études en Santé Publique, Rennes, France; [4]Stigma and Resilience Among Vulnerable Youth Centre, University of British Columbia, Vancouver, Canada

Background/Objectives: Sexual minority adolescents have a disproportionate burden of risky sexual behaviours compared to their non-minority peers. Since some adolescents can be romantically or sexually attracted to same- or both-gender partners but may not identify as lesbian, gay or bisexual, both attraction and love seem suitable indicators to classify sexual minority youth. It remains unknown whether same- or both-gender attraction and love predict the same sexual health disparities. We investigated whether patterns of attraction and love are associated with ever having had sex, early first sexual intercourse (under the age of 14), and protection at last sexual intercourse (condom, contraceptive pill or none of these) among adolescents in France, Hungary, Ireland, Moldova, Netherlands, and North Macedonia.

Methods: Young people aged 15–17, taking part in national Health Behaviour in School-aged Children studies (n = 8458, age: 15.48 ± 0.36 years, girls: 52.6%), were included. Sexual health outcomes were compared across two variables: (1) attracted to or (2) in love with; and five groups: (1) opposite-gender, (2) same-gender, (3) both-gender partners, (4) not being attracted or in love, (5) no response to the questions on attraction or love. Binary logistic regression models, controlled for gender, family affluence and country, were used.

Results: Youth attracted to or in love with same- and both-gender partners were significantly more likely than their peers attracted to or in love with opposite-gender partners to have had sexual intercourse and early sex. Youth reporting both-gender attraction or love also had significantly higher odds to report not using condoms or any protection at last sexual intercourse. On the other hand, not being in love was protective against having had sexual intercourse and early sex, while not being attracted was predictive of these outcomes. Not attracted youth also had higher odds of not using condom or pill (or none of them) at last sexual intercourse.

Discussion: Sexual minority status in adolescence, operationalised by either attraction or love, is associated with risky sexual behaviours. However, youth not being attracted to anyone also seem to be at higher risk for these negative outcomes compared to their opposite-gender attracted peers, while not being in love was not conducive to such risk. The results indicate that sexual minority youth and their peers who engage in sexual activities without being attracted to their partners face disproportionate risks. This deserves special attention in sexual health promotion and sexuality and relationships education.

ID: 146

Oral Presentation

Topics: PSYCHIATRY, ADOLESCENT MEDICINE, PUBLIC HEALTH

Keywords: ALSPAC; biological father absence; offspring depression; trajectories of depressive symptoms; population-based study.

Father absence and trajectories of offspring mental health across adolescence and young adulthood: findings from a UK-birth cohort

Culpin, Iryna[1]; Heuvelman, Hein[2]; Rai, Dheeraj[1,3,4]; Pearson, Rebecca M[1,3]; Joinson, Carol[1,5]; Heron, Jon[1,6]; Evans, Jonathan[1,3,4]; Kwong, Alex S F[6,7]

[1]Centre for Academic Mental Health, Population Health Sciences, Bristol Medical School, University of Bristol, Bristol, United Kingdom; [2]Leeds Institute of Health Sciences, School of Medicine, University of Leeds, United Kingdom; [3]NIHR Biomedical Research Centre, University of Bristol, Bristol, United Kingdom; [4]Avon and Wiltshire Partnership National Health Service (NHS) Trust, Bristol, UK; [5]Centre for Academic Child Health, Population Health Sciences, Bristol Medical School, University of Bristol, Bristol, United Kingdom; [6]MRC Integrative Epidemiology Unit, University of Bristol, Bristol, United Kingdom; [7]Division of Psychiatry, Centre for Clinical Brain Sciences, University of Edinburgh, Edinburgh, United Kingdom

Background: High prevalence of parental separation and resulting biological father absence raises important questions regarding its impact on offspring mental health across the life course. However, few studies have examined prospective associations between biological father absence in childhood and risk of offspring depression and depressive symptoms trajectories across adolescence and young adulthood. We specifically examined whether these relationships vary by sex and the timing of exposure to father absence (early or middle childhood).

Methods: This study is based on 8,409 children from the Avon Longitudinal Study of Parents and Children (ALSPAC). Participants provided self-reports of depression (Clinical Interview Schedule-Revised) at age 24 and depressive symptoms (Short Mood and Feelings Questionnaire) between the ages of 10 and 24. Biological father absence in childhood was assessed through maternal questionnaires at regular intervals from birth to 10 years. We used logistic regression to examine the association between biological father absence and depression/depressive symptoms at age 24. We estimated the association between biological father absence and trajectories of depressive symptoms using multilevel growth-curve modelling.

Results: Early but not middle childhood fathers' absence was strongly associated with increased odds of offspring depression and greater depressive symptoms at age 24. Early childhood father absence was associated with higher trajectories of depressive symptoms during adolescence and early adulthood compared with father presence. Differences in the level of depressive symptoms between middle childhood father absent and father present groups narrowed into early adulthood. Girls whose father was absent in early childhood, compared with the present, manifested higher levels of depressive symptoms throughout adolescence, but this difference narrowed by early adulthood. In contrast, boys who experienced father absence in early childhood had similar trajectories of depressive symptoms compared to the father present group but experienced a steep increase in early adulthood. Girls whose fathers were absent in middle childhood manifested higher trajectories across middle adolescence into young adulthood compared to the father present group.

Conclusions: We found evidence that father absence in childhood is persistently associated with offspring depression in adolescence and early adulthood and that this relationship varies by sex and timing of father's departure. Further research is needed to examine whether this relationship is causal and identify mechanisms that could inform preventative interventions to reduce the risk of depression in children who experience father absence.

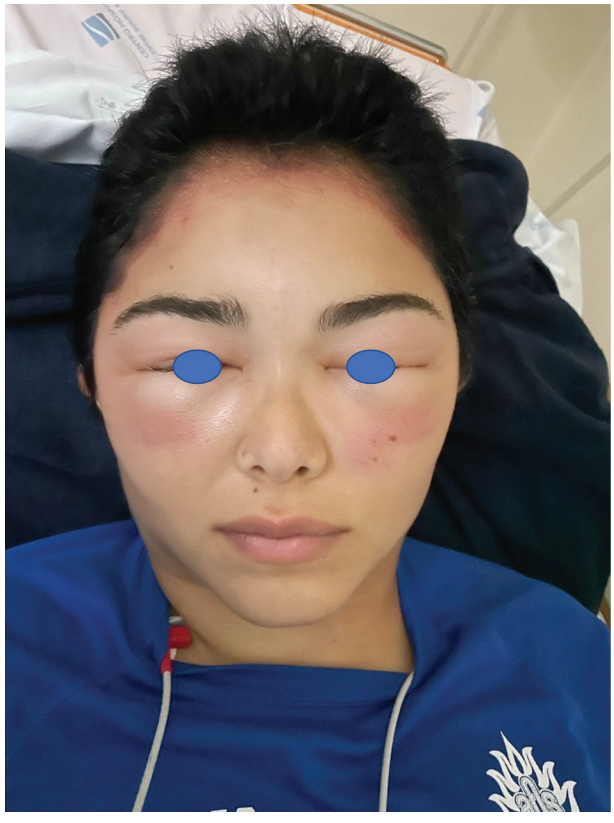
ID: 275
Oral Presentation
Topics: DERMATOLOGY, ALLERGY, IMMUNOLOGY & RESPIRATORY, ADOLESCENT MEDICINE
Keywords: Hair dye, Paraphenylenediamine (PPD), severe contact dermatitis, hypersensitivity

Hair dye and temporary tattoos - a threat not to be forgotten

Cunha, Rosário; Costa, Inês; Rodrigues, Sara; Rebelo, Ana; Oliveira, Sara; Pinto, Mariana
CHEDV, Portugal

Background: Paraphenylenediamine (PPD), a well-known skin sensitizer, is widely used as an oxidizable hair dye and is also found in a black henna tattoo. This component can cause local and systemic toxic effects when applied topically or ingested. Subsequently, local exposure to PPD may lead to delayed type IV hypersensitivity reaction presenting as allergic contact dermatitis. The reaction typically occurs one or more days after the exposure.

Case Report: A 17-year-old girl was admitted to the emergency room with scalp and facial swelling that began three hours after applying hair dye. In her physical examination, there was severe edema starting from the neck and involving the eyelids, forehead and scalp, and an eczematous reaction on the entire scalp. The patient had been referred with allergic contact dermatitis (ACD) after using a temporary black henna tattoo-ink when she was 8 years old and 3 months ago, when she first dyed her hair. Corticotherapy and second-generation H1 antihistaminic treatment were started with clinical improvement. The first few hours in the hospital were spent in the intermediate care unit for vigilance. Prednisolone dose was reduced gradually and discontinued after the eighth day of treatment (Figure).



Discussion: Para-phenylenediamine is a powerful allergen, particularly for children and adolescents. The increasing use of hair dye and temporary henna tattoos in this age group leads to more cases like this one. After exposure to hair dyes, patients with severe allergic reactions may previously be sensitized from other PPD containing materials. Black henna tattoos have PPD in their contents, and they may sensitize users.

ID: 313

Oral Presentation

Topics: ADOLESCENT MEDICINE, PUBLIC HEALTH

Keywords: Adolescents, Cyberbullying, Problematic Social Media Use, Social Support, HBSC

Hinder Problematic Social Media use and Cyberbullying in adolescence: the importance of social support – results from the Health Behaviour in School-aged Children study in Italy

Marengo, Noemi[1]; Lemma, Patrizia[1]; Charrier, Lorena[1]; Berchialla, Paola[2]; Dalmasso, Paola[1]; Borraccino, Alberto[1]; 2018, HBSC-Italia Group[3]

[1]Department of Public Health and Paediatrics, University of Torino, Italy; [2]Department. of Clinical and Biological Sciences, University of Torino, Italy; [3]National Centre for Disease Prevention and Health Promotion, Italian National Institute of Health, Rome, Italy

Introduction: The recent increase in the use of electronic media devices (EMC) among young people has underlined the importance of focusing attention on the use adolescents make of social media and the concurrent phenomenon of cyberbullying. Both issues were responsible for increasing mental health problems among adolescents, especially when Covid-19 prevention measures showed a significant impact on youth social media exposure.

Aim: As part of the 2018 Health Behaviour in School-aged Children study in Italy, we esteemed the prevalence of problematic EMC use and cyberbullying among adolescents in Italy, investigating the influence of familiar, school and peers' support.

Methods: Data were collected on 4183 school classes in Italy for 58976 adolescents, aged 11, 13 and 15 years. The prevalence of cyberbullying and problematic social media use was estimated in subgroups of age, gender, and geographical residence (North, Centre, and South Italy). A set of Multivariate logistic regressions was used to investigate the association between cyberbullying and problematic social media use, considering the effect of social support.

Results: The highest risk of being cyber-bullied was found in 11 and 13-year-old girls from central Italy (11.9%) and southern Italy (11.2%). In the latter, we also found the highest risk of reporting inappropriate use of social media (14.4%). The presence of high social support was highest in 11-year-olds of both genders, progressively decreasing with increasing age in all geographical areas. The risk of cybervictimization was higher in the presence of problematic social media use. Social support showed to be highly protective in reducing inappropriate use of social media and the occurrence of cyberbullying in all geographical areas and both genders.

Conclusions: Although cyberbullying is underrepresented in Italy compared to other European countries, it is slowly but steadily increasing. Problematic social media use can be an important driver of cyberbullying, but social support has shown the potential to reduce the risk of both phenomena. Public health policies fostering familiar and school support can help protect adolescents' mental health, reducing the risk of problematic social media exposure and cyberbullying.

ID: 311

Oral Presentation

Topics: INFECTIOUS DISEASES, ADOLESCENT MEDICINE, PUBLIC HEALTH

Keywords: sexually transmitted infections, adolescents, emergency medical services, public health

Trends in Sexually Transmitted Infections in the adolescent population: a cross-sectional study in a large region of northern Italy.

Viottini, Elena[1]; Onorati, Roberta[2]; Lemma, Patrizia[1]; Borraccino, Alberto[1]
[1]Department of Public Health and Paediatrics, University of Torino, Italy; [2]Epidemiology Unit, ASL TO3, Piedmont Region, Grugliasco, Italy

Background: more than 1 million sexually transmitted infections (STIs) are acquired every day worldwide, representing a resurfacing public health concern, especially when involving the adolescent population. This intervention aims to describe the 10-year trend of STIs occurring among adolescents who refer to the Emergency Departments (ED) in one of the largest Regions in the north of Italy.

Methods: a cross-sectional study was performed in the Piedmont Region. Data were obtained from the Ministerial Health Information database for the period 2011-2020. All ED access among adolescents aged 11-19 years old were included, and reliable STIs were identified through International Classification of Diseases (ICD) codes. Age-specific and crude rates and ED access rates, with their 95% confidence intervals (CI), were calculated to estimate the STI ten years trend.

Results: a total of 1 219 075 ED visits occurred over the study period with an STI rate of 9.6 cases per 100.000 inhabitants, representing a total of 27.8 ED accesses rate per 100 000 visits. Most infections are among women (83.5%) and in the 17-19 years- old age group (71.5%). The crude infection rate increased from 2011 to 2019 (from 22.2 to 25.7 every 100 000 inhabitants), excluding a drop in 2014 registered both for the total ED accesses and the STIs rate. Due to the Pandemic, the 2020 STI rate showed a significant decrease (6.1*10-5) compared to the previous years but representing an increase in the proportion of ED accesses, 29.2 compared to the 2019 accesses rate. Genital Herpes and Gonorrhea were the most frequent condition diagnosed over the study period. Among all conditions, only genital warts showed a significant decrease over the study period from 1.5*10-5 in 2011 to 0.3 *10-5 in 2020.

Conclusions: STIs are still a public health concern, especially among female teenagers. Together with the primary care settings, ED visits play an important role in STIs prevention, diagnosis, and treatment, particularly in asymptomatic conditions. Future research is needed to identify the determinants of such increase and to plan targeted screening interventions.

ID: 211
Oral Presentation
Topics: NEUROLOGY
Keywords: Headache, Diplopia, High intracranial pressure

Headache and diplopia in an adolescent

Rebelo, Ana Torres[1]; Pinto, Diana Henriques[1]; Bernardo, Ana[1]; Rocha, Rúben[2]; Loureiro, Graça[1]
[1]Centro Hospitalar entre Douro e Vouga, Paediatrics, Santa Maria Da Feira, Portugal; [2]Centro Materno-Infantil do Norte, Paediatrics, Porto, Portugal

Background: Idiopathic Intracranial Hypertension (IIH), also known as pseudotumor cerebri syndrome, is a rare disease in children. It is a complex condition characterized by headache, blurred vision and papilledema with persistently high intracranial pressure (ICP), normal cerebrospinal fluid (CSF) composition and normal neuroimaging results. It has the potential to cause profound,

irreversible vision loss. Acetazolamide, a carbonic anhydrase inhibitor, is the mainstream treatment.

Case Report: An overweight 14-year-old female adolescent presented with diplopia, nausea, asthenia and anorexia for 3 days. Three weeks before, she reported frontotemporal headache, vomiting and ear pain for five days and was treated with azithromycin for an acute otitis media. She denied retro-orbital pain, photophobia or dizziness. Her past health events were unremarkable. On physical exam, she was conscious and oriented. Blood pressure was normal. On neurological exam, a left sixth nerve palsy was detected. Fundus examination showed moderate bilateral papilledema. Visual acuity, as well as pupils' examination, were normal. Cranial computed tomography (CT) excluded hemorrhagic or space-occupying lesion. Lumbar puncture (LP) revealed an elevated opening pressure of 41 mmHg with a normal CSF composition. Laboratory tests revealed anemia (Hb 9,7g/dL), normal D-dimer and normal Phospho-calcium metabolism and thyroid function. The patient was diagnosed with idiopathic intracranial hypertension, was recommended exercise for weight loss and started a salt restriction diet. She initiated acetazolamide 500 mg twice a day and iron supplementation for anemia. After one week, she presented a partial resolution of papilledema. Peripheral venous blood gas analysis revealed metabolic acidosis, and therefore sodium bicarbonate 1000mg twice a day was initiated. One week later, she experienced resolution of diplopia and headache. Currently, at 7 months follow-up, she remains asymptomatic and magnetic resonance venography (MRV) was normal.

Discussion: IIH most frequently affects females, and the majority of these patients are overweight and in their reproductive years, as described in our case. Anemia has also been reported to be associated with IIH. Papilledema, the cardinal clinical finding, was present in this case report. This manifestation may lead to an irreversible deterioration in visual acuity, one of the most feared complications. In children with suspected ICP, secondary causes must be excluded. In our case, cranial CT imaging excluded space-occupying lesions. MRV is the preferred method of choice to rule out the potentially associated diagnosis of venous sinus thrombosis. In our case, early diagnosis and acetazolamide therapy prevented optic nerve damage. Metabolic acidosis, a potential complication of this therapy, was promptly corrected with sodium bicarbonate. Therefore, bicarbonate monitoring is of utmost importance during treatment.

ID: 310

Oral Presentation

Topics: NUTRITION & DIETS, PUBLIC HEALTH

Keywords: Diet, environment, school, disparities, Health-Behaviour in School-aged Children

Disparities related to the school socioeconomic and nutritional environments in the dietary habits of adolescents

Rouche, Manon; Desbouys, Lucille; Bellanger, Amélie; Holmberg, Emma; Pedroni, Camille; Castetbon, Katia

School of Public Health, Université libre de Bruxelles, Belgium

Background: Along with individual factors, contextual factors may influence dietary habits in adolescents. Contextual factors include the school socioeconomic and nutritional environment, where adolescents spend a large part of their day. This research aims to estimate disparities related to the socioeconomic and nutritional environment in adolescents' dietary habits in Belgium while taking into account individual socioeconomic characteristics.

Methods: In the 2018 cross-sectional "Health Behaviour in School-aged Children" survey, food consumption was estimated using a self-administrated short Food Frequency Questionnaire. Adolescents' socioeconomic status (SES) was assessed using parental education level, working

status, Family Affluence Scale and perceived family wealth. In addition, the school socioeconomic index (SEI), an official index based on the characteristics of each school population, was used. School staff members completed a questionnaire on food availability and health-promoting actions. In total, 6,017 adolescents from 120 secondary schools were included in the analyses. Multilevel multiple binary logistic regressions were performed to estimate the role of the school socioeconomic and nutritional characteristics and individual characteristics in unhealthy food consumption frequency.

Results: Almost two-thirds and half of the adolescents had a non-daily fruit (60.7%) and vegetable (44.1%) consumption, respectively. While 12.5% had a non-daily consumption of water, 31.5% reported a daily sugar-sweetened beverages (SSB) consumption. Daily crisps and fries consumption was reported by 15.3% of adolescents. Over two-thirds of the observed variance in food consumption was explained by individual and school characteristics, with SES and SEI being the main contributors. Indeed, adolescents of a secondary or lower parental education level were more likely to consume SSB daily than those of a post-secondary level (aOR= 1.46 (1.29-1.66)). In addition, compared to those in a high SEI school, adolescents attending a low SEI school were more likely to consume SSB daily (aOR= 2.37 (1.90-2.96)). Regarding the nutritional environment, adolescents from schools that did not address health promotion or had the project to include healthy foods at school events were more likely to consume SSB daily (respectively: aOR=1.22 (1.03-1.44); aOR= 1.24 (1.01-1.54)). However, no difference in the adolescent SSB consumption was observed depending on foods available for sale at school or the projects to increase healthy food consumption or decrease unhealthy food consumption.

Conclusion: Individual and school socioeconomic background are independently related to the dietary habits of adolescents. Since the association with nutrition-related projects and health promotion is not conclusive in this observational assessment, schools should pursue a consistent nutrition policy with increased support in low socioeconomic populations.

ID: 184
Oral Presentation
Topics: ALLERGY, IMMUNOLOGY & RESPIRATORY
Keywords: pneumonia, necrotizing, aspiration, foreing-body

Necrotizing pneumonia following foreign body aspiration in an adolescent

Alba, Diana[1]; Mosca, Sara[2]; Bastos, Hélder[3]; Caiado, António[4]; Garrido, Ana[5]; Barbosa, Rosa[1]
[1]Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Penafiel, Portugal; [2]Department of Pediatrics, Centro Materno Infantil do Norte, Centro Hospitalar Universitário do Porto, Portugal; [3]Department of Pneumology, Centro Hospitalar do São João, Porto, Portugal; [4]Department of Pneumology, Centro Hospitalar do Tâmega e Sousa, Penafiel, Portugal; [5]Pediatric Emergency Department, Centro Hospitalar do Tâmega e Sousa, Penafiel, Portugal

Background: Foreign body aspiration (FBA) is a possible life-threatening emergency in childhood, especially in male children under the age of 5-years old, occurring less frequently in adolescents. Sometimes FBA can remain undetected due to atypical history, misleading clinical and/or radiological findings, leading to serious complications such as necrotizing pneumonia (NP). NP is uncommon in children but may be associated with significant morbidity.

Case Report: We describe a case of an NP in a healthy adolescent secondary to FBA. A 16-year-old male with no significant past medical history presented to the emergency department with right-side chest pain for 2 weeks, dyspnea, productive cough, and fever. There was no history of FBA or contact with tuberculosis. At admission, he was hemodynamically stable, with oxygen saturation of 96% on room air, mild respiratory distress signs and abnormal lung sounds (globally diminished,

asymmetric on the lower third of the right hemithorax). Laboratory evaluation revealed leucocytosis (15900/uL), a C-reactive protein of 337 mg/L, and an erythrocyte sedimentation rate of 52 mm/hour. Chest X-ray and subsequent chest computed tomography (CT) presented lung effusion and an abscess on the right lower lobe. He was then admitted to the pediatric ward. Intravenous antibiotics were initiated (initially with ceftriaxone, azithromycin and clindamycin; later, ceftriaxone was switched to meropenem due to persistent fever), a chest drain was placed, and a biopsy was performed. The biopsy revealed a foreign vegetable body, and pleural fluid was sent for cultures. During hospitalization, flexible and rigid bronchoscopies were performed, and an oregano branch was extracted. The adolescent only then recalled an episode of choking after eating dinner several weeks before. From the investigation, blood cultures were sterile; acid-fast bacilli smear and culture for Mycobacterium tuberculosis were negative; Mycoplasma pneumoniae and Streptococcus pneumoniae were not detected by polymerase chain reaction (PCR) in the pleural fluid aspirate. Streptococcus intermedius was identified by culture of pleural fluid aspirate. The adolescent was discharged after 11 days of hospitalization and completed a total of 25 days of antibiotics. Eight weeks later, he was reevaluated, showing a significant clinical and imaging improvement on chest CT.

Discussion: FBA can occur at any age, even without any underlying risk factors. It usually presents acutely but can present with chronic symptoms without an obvious history of a choking event in rare cases. Although rare, it should always be considered in adolescents with NP, especially if not explained by other causes.

ID: 245
Oral Presentation
Topics: GENERAL PEDIATRICS, PUBLIC HEALTH, COVID-19
Keywords: COVID-19, chronic disease, perceived stress, social health, financial situation

Perceived stress, family impact, and changes in physical and social daily life activities of children with chronic somatic conditions during the COVID-19 pandemic

Krijger, Anne[1]; Dulfer, Karolijn[1]; van Oers, Hedy[2]; Teela, Lorynn[2]; de Jong-van Kempen, Brita[3]; van Els, Anne[2]; Haverman, Lotte[2]; Joosten, Koen[1]
[1]Erasmus MC, the Netherlands; [2]Amsterdam UMC, the Netherlands; [3]Medical Center Leeuwarden, the Netherlands

Background: The COVID-19 pandemic has inevitably affected children and their families. This study examines the impact of the COVID-19 measures in children with chronic somatic conditions (CSC) and their parents and compares them with a Dutch general population sample.

Methods: We included a sample of children with CSC (0-18 years, n=326) and compared them with children (8-18 years, n=1,287) from the Dutch general population. Perceived stress, coping, social interaction with friends and family, physical activity, eating behavior, family support, and financial situation were assessed with the digitally administered COVID-19 child check questionnaire between November 2020 and May 2021.

Results: During the COVID-19 pandemic, children with CSC engaged less in physical activity and social interaction with friends compared with children from the general population. Children with CSC and their parents experienced less stress than children and parents from the general population. Moreover, parents of children with CSC aged 0-7 years and children aged 8-18 years from the general population experienced less support and more financial deterioration than parents of children with CSC aged 8-18 years. In the parents from the general population only, this deteriorated financial situation was associated with more stress, worse family interaction and parenting perception, and less received support.

Conclusions: The impact of COVID-19 measures in children with CSC and their parents differed from those in the general population. Addressing the collateral damage of COVID-19 measures in children and their families can give direction to policy and potentially prevent (long-term) negative consequences.

ID: 177
Oral Presentation
Topics: RARE DISEASES, ENDOCRINOLOGY, NEONATOLOGY
Keywords: Ambiguous genitalia, mixed gonadal dysgensis, hypospadias, mosaic karyotype

Severe hypospadias and mixed gonadal dysgenesis in a infant

Sainz, Katelyn Marie; Tiwari, Rishita P
Tucson Hospitals Medical Education Program, United States of America

Background: The treatment of mixed gonadal dysgenesis presents several medical and psychosexual challenges. This clinical picture can be further complicated by the wide range of phenotypical presentations and genetic karyotype.

This case report describes an 18 hour old infant who was examined by the pediatric endocrinology team in the newborn nursery due to concern regarding ambiguous genitalia and was ultimately found to have an unusual mosaic karyotype.

Case Presentation Summary: A 18 hour old infant was referred to pediatric endocrinology with ambiguous genitalia. This infant was conceived naturally to a non- consanguineous married couple who have an older son who is healthy. There were no complications during pregnancy, however cell free DNA testing at 10 weeks revealed high possibility of XO genotype. Parents declined confirmatory amniocentesis.

Examination revealed a vigorous infant with non-dysmorphic facies, phallic length 1.5cm with an opening seen at the inferior aspect that appears to be a urethral opening, a palpable right testicle 1cc in volume and a non-palpable left testicle, scrotum appears divided and well rugated remainder of exam is unremarkable. Pelvic ultrasound was done and revealed no uterus or ovaries, 1.1cm testicle in the right inguinal canal and 0.4cm gonadal structure in the left inguinal canal. Echocardiogram done at 19 hours of life revealed PFO with left to right shunting, 3mm PDA, persistently elevated pulmonary pressures and a flattened ventricular septum.

Pertinent laboratory findings included an initially elevated TSH and free T4 which was found to be within normal limits 2 weeks later outpatient, a random cortisol level was drawn at 25 hours of life and found to be 11.5 ug/dL, serum sodium was unremarkable and testerone level drawn at 15 days of life was 442 ng/dL.

Chromosome analysis revealed 46,X,idic(Y)(q11.2)[12]/45,XO,[8]

Following initial work up infant was able to be discharged on day of life #2 to outpatient care with endocrinology, urology and medical genetics.

Learning Points Discussion:

(1) Initial workup of an infant in the newborn nursery for ambiguous genitalia
(2) Psychosocial challenges of choosing a child's gender with a mixed karyotype
(3) Treatment of severe hypospadias in an infant with ambiguous genitalia

(4) Consideration of treatment of short stature in adolescence

ID: 189

Oral Presentation
Topics: EMERGENCY PEDIATRICS
Keywords: intoxication, cannabinoids, accidental

Accidental cannabinoid ingestion in children – A case series

Alba, Diana; Paiva Ferreira, Ines; Moreira, Mafalda; Calejo, Rita; Ferreira, Jorge Abreu; Soares, Joana Margarida
Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Penafiel, Portugal

Background: Altered mental status (AMS) is a common presenting symptom in the pediatric emergency department (ED) and can be challenging due to a wide variety of differential diagnoses. Accidental poisonings represent a common cause of AMS, particularly in children aged 1 to 4 years old, given their naturally curious and exploratory behaviour.

Case Presentation Summary: We report three cases of children under the age of 24 months presenting to our ED with altered mental status due to accidental cannabinoid ingestion in 2 years (2019-2021).

Case 1: A 19-month-old healthy girl presented with excessive sleepiness and poor responsiveness to stimulus. On physical examination, she has tachycardia, conjunctival hyperemia, torso imbalance and gait ataxia. Activated charcoal and flumazenil were administered, and the child remained under observation. The initial urine toxicology screen was positive for cannabinoids. Since there was no improvement in her mental status (with a Glasgow Coma Scale of 13), she was transferred to a hospital with an intensive care unit. After clinical stabilization, she was readmitted the next day to our pediatric ward. She was discharged home 2 days later, after Child and Youth Protection Committee (CYPC) deemed she was safe. The source of the drug was not identified.

Case 2: A previously healthy 14-months-old girl was brought to the ED due to sleepiness and prostration. Physical examination was unremarkable, except for a slight torso imbalance. The mother confirmed a sporadic consumption of hashish by the father. Further investigation included blood and urine analysis. She remained under observation, showing clinical improvement. She was admitted to the pediatric ward waiting for social resolution.

Case 3: A 10-months-old healthy female showed diminished activity and excessive sleepiness one hour after dinner. Initial examination demonstrated decreased responsiveness, poor head control. The mother denied the possibility of access to drugs. Due to cognitive deterioration, a head computed tomography was performed. It showed no alterations. The patient's urine drug screen was positive for cannabinoids. She remained under clinical monitoring and was discharged after CYPC was deemed safe, remaining under community follow-up.

Discussion: Cannabis ingestion in children is rare and mainly accidental but can be life-threatening. It also can be difficult to identify since clinical signs are non-specific, and the diagnosis is based primarily on parents questioning and urine toxicological results.

The authors expect to bring some awareness to clinicians to start considering cannabinoid intoxication in cases of acute onset of AMS in previously healthy children.

ID: 192

Oral Presentation
Topics: EMERGENCY PEDIATRICS
Keywords: accidental drug poisoning, children, prevention

Accidental drug poisoning in a pediatric emergency room – A 5-year retrospective study

Moreira, Mafalda; Alba, Diana; Paiva Ferreira, Ines; Calejo, Rita; Teixeira, Sandra
Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Portugal

Background: Accidental drug poisoning (ADP) is an important cause of attending the emergency room (ER) in the pediatric age group. The majority of cases of poisoning in children occur in those under 5 years of age, which may be explained by the acquisition of increasing mobility and hand-to-mouth habit. Caregivers also play a role in this issue due to lack of supervision and in cases of iatrogenic medication errors. Unintentional poisoning is one of the most easily preventable causes of child mortality.

Methods: Retrospective study of children admitted to the ER of a level two hospital with ADP during 5 years (January 1st 2015 to December 31st 2019). Data were collected through the analysis of the patients' clinical files.

Results: We found 60 cases of ADP, with an average of 12 cases per year and a peak in 2019 (15). Fifty-eight per cent of the children were female, and the median age was 3 years old. The youngest patient was 4 months old, and the oldest one was 15 years old. Eighty per cent of the cases occurred in children under 5 years of age. In three patients, there was a previous episode of ADP. The form of intake was oral ingestion in all cases. According to the temporal distribution of the episodes, ADP occurred predominantly on weekdays (77%) and during morning hours (55%). In most cases, children were accompanied by their parents at the time of the ingestion, but in 32%, they were with their grandparents. Benzodiazepines were the most common drug (73%), and multiple drugs were involved in 13% of cases. Neurological manifestations, such as ataxy and sleepiness, were the most frequently found (58% and 38%, respectively), followed by gastrointestinal symptoms; 10 children were asymptomatic. There were no deaths, but one patient was transferred to an intensive care unit. Children remained under observation from 1 to 24 hours, with a mean duration of 14,6 hours. Seven were referred to social services.

Conclusions: Our study confirms that ADP is a current problem in the pediatric population. Although there was no mortality, one toddler needed intensive care support. The efforts that have been made to diminish this issue are not enough as the number of cases hasn't decreased over the years. Pediatricians should provide anticipatory guidance to parents, and doctors should practice responsible prescription. Information about the safe storage of medicines should be reinforced in all consultations and disseminated by the media.

ID: 218
Oral Presentation
Topics: NEUROLOGY, EMERGENCY PEDIATRICS
Keywords: cerebral sinovenous thrombosis; anticoagulation; head and neck infections; neurology

Cerebral sinovenous thrombosis in pediatric practice: complications and long-term sequelae

Pais-Cunha, Inês[1]; Curval, Ana Rita[1]; Fonseca, Jacinta[2]; Melo, Cláudia[2]; Sampaio, Mafalda[2]; Sousa, Raquel[2]

[1]Serviço de Pediatria, Unidade de Gestão Autónoma da Criança e da Mulher, Centro Hospitalar Universitário de São João, Porto; [2]Unidade de Neuropediatria, Unidade de Gestão Autónoma da Criança e da Mulher, Centro Hospitalar Universitário de São João, Porto

Background: Cerebral Sinovenous Thrombosis (CST) is a rare but potentially fatal condition in the pediatric age. Indication for anticoagulation is extrapolated from adult guidelines and evaluated individually. This study aimed to analyze acute complications and long-term sequelae in a group of children with CST.

Methods: Retrospective and descriptive analysis of pediatric inpatients admitted to a tertiary hospital for CST between 2008 and 2020.

Results: We identified 54 patients diagnosed with CST, 55.6% masculine gender with 6.5 years of median age (0.8-17.3). The most frequent risk factors included: head and neck infections (55.6%), cranial trauma (14.8%) and cancer (14.8%). Anticoagulation was initiated immediately in 94.4% of patients. 3.7% started anticoagulation after a second imaging evaluation, and 1.9% were not given this treatment. Acute complications were identified in 57.4% of patients, namely cranial hypertension (37%); impaired consciousness (37%); acute visual deficit (20.4%); sixth nerve palsy (18.5%); intracranial hemorrhage (14.8%); acute ischemia (13%) and seizure (11.1%). Anticoagulation was maintained in 51 patients for a median of 10 months (3-36). 7.3% of patients needed chronic anticoagulation. Regarding major long-term sequelae, 5.6% of patients had epilepsy, 3.7% cognitive deficits and 3.7% motor deficits. Minor long-term sequelae were identified in 16.7% of patients with oculomotor impairment and 1.9% with chronic headaches. Intracranial haemorrhage was associated with major sequelae (p= 0.025). Patients with a seizure at presentation also tended to develop major sequelae (p=0.089). There were no recurrences or deaths registered.

Conclusions: Local head and neck infection was the most common risk factor. Patients with intracranial haemorrhage were more likely to have major sequelae. Furthermore, those who presented with seizures seemed to have a tendency for worse long-term outcomes. These findings are in line with current literature. The majority of patients were given anticoagulants upon admission. Although it is challenging, there is still the need to implement treatment guidelines for pediatric CST.

ID: 212

Oral Presentation

Topics: NEONATOLOGY

Keywords: Breastfeeding support, breast milk nutrition support, hyperbilirubinemia, newborn infants, transcutaneous bilirubin

Investigation of the effect of breastfeeding and breast milk nutrition support given to newborns on hospitalizations due to hyperbilirubinemia: a randomized controlled trial

Cinar, Nursan[1]; Karakaya Suzan, Ozge[2]; Caner, Ibrahim[3]; Peksen, Sultan[4]; Tabakoglu, Pınar[2]; Cinar, Vedat[2]

[1]Sakarya University, Faculty of Health Sciences, Department of Nursing, Turkey; [2]Sakarya University, Institute of Health Sciences, Sakarya, Turkey; [3]Sakarya University, Faculty of Medicine, Department of Child Health and Diseases, Turkey; [4]Department of Education, Pregnant Education Class University of Sakarya, Education Research Hospital, Sakarya/Turkey

Background and Objective: Bilirubin levels may increase with other problems in babies who cannot be fed adequately after birth. This study was carried out to determine the effect of breastfeeding support provided to mothers and expressing breast milk after breastfeeding and giving the baby with a spoon on hospitalizations due to hyperbilirubinemia. This study was designed as a

randomized controlled trial to determine the effect of breastfeeding and breastmilk nutrition support given to newborns on hospitalizations due to hyperbilirubinemia.

Design and Methods: The sample group consisted of 68 newborn infants (intervention group:34; control group: 34) who were followed in a university hospital after birth between October 2020 to April 2021. The data were collected using an Information Form, Jaundice Observation Form, Newborn Nutrition Observation Form and Transcutaneous Bilirubin Level Meter. The breastfeeding and breast milk nutrition support given to the Intervention group was applied to the newborns in the first 48 hours and completed in five steps. Bilirubin levels were measured 24th and 72th hr after the birth in both groups. In risky situations in both groups, hospitalization was given. Bilirubin levels and hospitalization for hyperbilirubinemia were compared in two groups. The Student t-test was used to evaluate the normally distributed data, and the Students t-test was used to carry out statistics in the nonnormal distribution of quantitative data.

Results: The groups were homogeneously distributed in terms of demographic characteristics ($p>0.05$). There was no statistically significant difference between the experimental (5.19 ± 1.27) and the control (5.83 ± 1.52) groups in terms of bilirubin levels in the first 24 hours of assessment following birth, t = -1,881, p = 0.064. However, The control group infants (12,03±3,67mg/dl) were a higher bilirubin level when compared with the infants in the experimental group in assessment performed 72 hr after birth (9,55±2,82mg/dl) (t = −3.122, p=0.003). The rate in hospitalizations in infants in the experimental group (n:1,2.9%) was statistically significantly lower compared with the infants in the control group (n:8,23,5%), t= 0,275, p = 0.027.

Conclusion: Breastfeeding and breast milk nutrition support is effective in preventing hospitalization for hyperbilirubinemia and reduce bilirubin levels of newborn infants

ID: 250
Oral Presentation
Topics: ENDOCRINOLOGY
Keywords: Thyroidectomy, thyroid disease, thyroid nodule

Paediatric thyroidectomy: experiente in a Portuguese hospital

Vieira, Paula Manuel[1]; Sequeira, Joana Barbosa[2]; Monteiro, Sílvia Santos[3]; Vaz, Ana de Carvalho[4]; Cardoso, Juliana da Silva[1]; Ribeiro, Luís[5]; Mendes, Catarina[6]; Freitas, Joana[6]; de Castro, Ribeiro[2]; Borges, Teresa[6]; Oliveira, Maria João6
[1]Paediatrics, Centro Materno-Infantil do Norte Albino Aroso, Centro Hospitalar Universitário do Porto; [2]Paediatric Surgery, Centro Materno-Infantil do Norte Albino Aroso, Centro Hospitalar Universitário do Porto; [3]Endocrinology, Centro Hospitalar Universitário do Porto; [4]Paediatrics, Unidade Local de Saúde Alto Minho; [5]Paediatrics, Unidade Local de Saúde do Nordeste; [6]Paediatric Endocrinology, Paediatrics Department, Centro Materno-Infantil do Norte Albino Aroso, Centro Hospitalar Universitário do Porto

Background: Paediatric thyroid disease requiring surgery is rare. Many entities are included in this group, namely thyroid nodules, which are mostly benign but can be malignant in up to 25% of cases. Available data in surgical experience in paediatric thyroid disease is scarce. Thus, we describe our centre's experience in paediatric thyroidectomy.

Methods: Retrospective descriptive study of all paediatric patients submitted to thyroid surgery between 2010 and 2020.

Results: Our study included 13 patients, primarily female (11). The main reason for referral to Paediatric Endocrinology consultation was thyroid nodules (10). Twelve fine needle aspirations

(FNA) were performed, showing follicular tumour (5), colloid nodular goiter (2), atypia of undetermined significance (2), adenoma (1), benign follicular nodule (1) and cystic lesion (1). The median age at surgery was 15.7 years [5.34-18.08]. The most frequent surgical indication was the presence of a follicular tumour on FNA (5). A total of 6 total thyroidectomies, 7 lobectomies and 1 partial lobectomy. The most common histological changes described were follicular adenoma (6) and colloid nodular goiter (5). There was one case of prophylactic thyroidectomy that identified a multiple endocrine neoplasia type 2A mutation without malignancy. Three postoperative complications occurred: 1 bilateral lesion of the recurrent laryngeal nerve, 1 cervical hematoma and 1 transient hypoparathyroidism with hypocalcaemia.

Conclusions: In our study, the most frequent surgical indication was a follicular tumour, whereas the most common one described in the literature was thyroid nodules. In most cases, there was a correlation between FNA results and final histology, according to previous studies. Thus, we wish to reinforce the importance of FNA in diagnosis and surgical planning. Data relating to surgical complications varies between 8-38%, compatible with what we describe. Our small sample size is an important limitation to our study, reinforcing the need for further research.

ID: 299

Oral Presentation

Topics: GENERAL PEDIATRICS

Keywords: nephrotic syndrome, steroid-resistant nephrotic syndrome, kidney transplant

Post-transplant nephrotic syndrome recurrence

Vieira, Paula Manuel[1]; Carvalho, Ana Luísa[2]; Reis, Gabriela[3]; Carvalho, Indira[1]; Miranda, João[4]; Correia Costa, Liane[5]; Rocha, Liliana[5]; Teixeira, Ana[5]; Costa, Teresa[5]; Faria, Maria do Sameiro[5]; Pires de Matos, Paula[5]; Mota, Conceição[5]

[1]Pediatrics, Centro Materno-Infantil do Norte Albino Aroso, Centro Hospitalar Universitário do Porto; [2]Pediatrics, Hospital de Braga; [3]Pediatrics, Unidade Local de Saúde do Baixo Alentejo; [4]Pediatrics, Centro Hospitalar Vila Nova de Gaia/Espinho; [5]Nephrology Unit, Pediatrics, Centro Materno-Infantil do Norte Albino Aroso, Centro Hospitalar Universitário do Porto

Introduction: Limited data is available regarding the long-term outcome of pediatric steroid-resistant nephrotic syndrome (SRNS). Genetic screening has a major prognostic value as those with monogenic SRNS typically are unresponsive to immunosuppressive therapy and progress to end-stage kidney disease but rarely recur after transplantation.

Case Report: A 2-year-old boy was diagnosed with nephrotic syndrome. He presented with edema, blood pressure above the 95th percentile for age, hypertriglyceridemia (824 mg/dL), hypercholesterolemia (498 mg/dL), low HDL cholesterol (35 mg/dL) and hypoalbuminemia (0.4 g/dL). Due to a lack of response to a standard steroid protocol, a renal biopsy was performed, which showed a pattern of minimal change disease with IgM deposits. No electronic microscopy was done. Despite treatment attempts with ciclosporin, indomethacin and rituximab, proteinuria persisted with several hospitalizations and the need for regular albumin administrations (3 times a week). Left nephrectomy was performed to control protein loss. He maintained the need for weekly albumin perfusions, and renal function declined in association with refractory metabolic acidosis, severe hypothyroidism and growth impairment. Regular hemodialysis was started at age 4. Genetic testing showed two variants: 1 probably pathogenic in the MAGI2 gene and 1 of unknown significance in the PLCE1 gene. At 7-years-old he received a renal transplant from a deceased donor. Graft without immediate function. Three post-transplant kidney biopsies were performed (days 4, 17 and 62) with optic microscopy suggestive of acute tubular necrosis and electronic microscopy suggestive of segmental and focal glomerulosclerosis. Plasmapheresis and rituximab

were started with no response. Currently the patient has serum creatinine of 0,56 mg/dL, albumin of 2,58 g/dL and a urinary protein/creatinine ratio of 5,2 g/g.

Discussion: In SRNS, additional immunosuppressive therapy is initiated to induce remission, but it was ineffective in our patient. Nongenetic SRNS with no response to therapy has a higher post-transplant recurrence rate, probably due to a circulant factor. Due to the existence of a genetic variant, we did not expect a post-transplant recurrence to occur. This warrants the need for further studies to help determine its significance and prognostic implications.

ID: 300
Oral Presentation
Topics: GENERAL PEDIATRICS
Keywords: Acute kidney injury, Critically ill children

Prevalence, Risk factors and immediate outcome of acute kidney injury in critically ill children admitted at Tertiary hospitals in Dodoma Region

Kasilillika, Alinanuswe Gideon[1]; Kayungo, Shakilu Jumanne[2]; Hella, Jerry[3]; Nasoro, David[4]
[1]Department of Paediatrics and Child health, Mbeya Regional Referral Hospital, Tanzania; [2]Department of Paediatric and Child Health, College of Health Science, The University of Dodoma, Dodoma, Tanzania; [3]Ifakara Health Institute, Dar es Salaam; [4]University of Dar es salaam, Mbeya college of Health and Allied sciences, Mbeya

Background: Critical illness is commonly accompanied by a variable degree of acute kidney injury. However, the actual burden of AKI in terms of its magnitude, associated risk factors and outcome among critically ill children in Tanzania is unknown due to limited data.

Objectives: To determine the prevalence, risk factors, and immediate outcome of acute kidney injury among critically ill children admitted at Tertiary hospitals in Dodoma Tanzania

Methods: A prospective cross-sectional hospital-based study enrolled 92 critically ill children aged one month to 15years who were admitted at the tertiary hospitals in Dodoma. Variables such as demographics, vital signs, urine output and blood samples were taken. AKI was defined using Kidney Disease Improving Global Outcome (KDIGO) criteria.

Results: The prevalence of AKI was 57.6% (53/92), patients with impaired consciousness (p=0.0071), severe respiratory distress (p=0.0016), multiple convulsions at admission (p=0.0487), duration of illness of more than 3days (p= 0.0012), absence of chronic illness (p=0.028), and presence of protein in the urine (p=0.0135), were independently associated with AKI. Patients with AKI had a longer duration of hospital stay, averaging 11days vs 7days and a higher proportion of death of 35.8% (19/53). Increasing AKI stage and young age (1-12) months were predominant risk factors for mortality. The need for dialysis was 12/53 (22.6%), but only two patients could afford dialysis.

Conclusion: AKI is very common in critically ill children, especially those with impaired consciousness, severe respiratory distress, illness duration of more than 3 days, absence of chronic illness, history of multiple convulsions at admission and proteinuria.

ID: 193
Oral Presentation
Topics: GENERAL PEDIATRICS, ALLERGY, IMMUNOLOGY & RESPIRATORY
Keywords: administration techiques, allergic rhinitis, intranasal corticosteroid sprays, quality of administration

Quality of intranasal corticosteroid sprays application in children and adolescents with allergic rhinitis

Ferreira, Adriana[1]; Soares, Joana[1]; Stella, Lorena[2]; Pedrosa, Cláudia[3]; Romariz, Jorge[3]; Costa, Herculano[3]; Praça, Fátima[3]
[1]Department of Pediatrics, Centro Hospitalar Tâmega e Sousa, Portugal; [2]Department of Pediatrics, Centro Hospitalar de Vila Nova de Gaia/Espinho; [3]Pediatric Immunoallergology and Pneumology Unit, Centro Hospitalar de Vila de Nova de Gaia/Espinho

Background: Allergic rhinitis (AR) is one of the most common diseases worldwide and is regularly seen in children and adolescents. If left untreated or partially treated, it can be associated with sleep disturbances, cognitive and psychological problems, and low quality of life. Intranasal corticosteroids (IC) are the treatment of choice, but their inadequate use can lead to low efficacy and more adverse effects. This study aimed to describe the most common errors and their frequency in the administration of IC sprays and determine what steps of the technique should be improved.

Methods: An observational study was performed in an Allergology department between February and March 2021. Fifty children and adolescents diagnosed with AR using IC were recruited. A checklist with the recommended steps for the administration of IC was used and scored after the direct observation of the patients' IC application technique.

Results: The 50 participants had an average age of 12 years (5-18), and the IC application was performed by themselves in 66% and by the caregiver in 34%. Steps for IC administration and its execution frequency are presented in Table 1. None carried out all the recommended steps or the recommended essential steps. The most frequent errors identified were not breathing out through the mouth (100%), not blowing the nose (92%) and not pointing the end of the nozzle away from the septum (80%). There was a better realization rate regarding the steps of blowing the nose and shaking the spray when they were performed by the caregivers, with statistical significance.

Table 1. Steps for IC administration and its execution frequency

Steps for IC administration N=50	Instrutions carried out, n (%)	By itself N=33	Caregiver N=17	p
• Blow the nose	4 (8)	0 (0)	4 (24)	**0,01[a]**
• Shake the spray	16 (32)	7 (21)	9 (53)	**0,024[b]**
• The head is in a neutral position or bended slightly forward	49 (98)	33 (100)	16 (94)	0,340[a]
• Hold the spray in a vertical position	50 (100)	33 (100)	17 (100)	-
• Points the end of the nozzle away from the septum	10 (20)	5 (15)	5 (29)	0,277[a]
• Inhales gently while presses the spray	13 (26)	8 (24)	5 (29)	0,741[a]
• Inhales abruptly	0 (0)	0 (0)	0 (0)	-
• Breaths out through the mouth	0 (0)	0 (0)	0 (0)	-
• Wipes the nozzle with a tissue	3 (6)	1 (3)	2 (12)	0,264[a]

[a]Fisher's exact test; [b]Chi-square test (likelihood ratio)

Conclusions: This study showed that the IC sprays application technique is inadequate in the majority of the studied patients. Thus, we intend to alert health professionals to the need for frequent reinforcement of the instructions for a correct IC administration technique and regular training. Standardized instructions and their wide application are necessary.

ID: 231
Oral Presentation
Topics: GENERAL PEDIATRICS, INFECTIOUS DISEASES, PUBLIC HEALTH
Keywords: Tuberculosis, Miliary tuberculosis, Tuberculous meningitis, Pediatrics, BCG vaccine

Severe forms of tuberculosis in pediatric age

Simao, Margarida; Valsassina, Rita; Garcia, Margarida; Silva, Tiago; Gouveia, Catarina; Brito, Maria Joao
Department of Pediatric Infectious Diseases, Hospital Dona Estefânia, CHULC, Portugal

Background: Tuberculosis (TB) is one of the leading causes of infection-related deaths in the world. Severe forms of disease such as meningitis and miliary form are rare but more common in children and have important morbidity. Since 2017 the BCG vaccine is no longer administered to every child who is born in Portugal

Methods: Descriptive study about patients until 18 years old admitted with tuberculous meningitis or miliary tuberculosis in a tertiary pediatric hospital, from 2008 to 2021 (14 years).

Results: We report 18 cases of severe TB: tuberculous meningitis (9), miliary TB (8) and both tuberculous meningitis and miliary TB (1). The median age was 8 years (min 1 month, max 17 years) and four cases in emigrant children. 12/18 (67%) had BCG vaccination. In seven (39%) cases, it was possible to identify an epidemiological link in cohabitants. Three patients had chronic disease (neurologic disease, HIV), and all of these had miliary. The tuberculin test was positive only in three children and the Interferon Gamma Release Assay in seven. The Mycobacterium tuberculosis was identified by microbiology/molecular biology in 7/18 in gastric aspirate (5), bronchoalveolar lavage (1), cerebrospinal fluid (1) and ganglionar biopsy (1). Nine children (50%) had complications: hemophagocytic syndrome (1), epilepsy (2) and psychomotor development delay (1), middle cerebral artery stroke with hemiparesis (1), cerebral media vasculopathy (1), hydrocephaly (1), intracranial hypertension (2), VI and VII cranial polyneuropathy (1), psychiatric consequences (1), localized adhesive peritonitis and pneumoperitoneum (1)

Conclusions: Severe forms of TB remain an important and potentially preventable cause of childhood illness. Diagnostic difficulties are the greatest challenge - conventional diagnostic tests have suboptimal sensitivity and specificity, and obtaining specimens is hard. A high index of clinical suspicion and timely institution of anti-tuberculosis treatment can be lifesaving.

ID: 186
Oral Presentation
Topics: GENERAL PEDIATRICS, INFECTIOUS DISEASES
Keywords: neck, infections, DNI, abscess

Deep Neck Infections in Children – A five-year retrospective study at a level two hospital

Alba, Diana; Paiva Ferreira, Ines; Moreira, Mafalda; Calejo, Rita; Soares, Joana Margarida; Ferreira, Jorge Abreu
Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Penafiel, Portugal

Introduction: Deep neck infections (DNI) are uncommon in children but responsible for significant morbidity.

Methods: A retrospective analysis of medical records of patients (aged up to 18 years) admitted to the pediatric ward diagnosed with deep neck infections at a level two hospital over 5 years (2015-2020).

Results: During the study period, a total of 26 patients were hospitalized, 14 males and 12 females, with a median age of 8,1 ± 4.9 years. The most common site for DNI was the peritonsillar space (n=20; 76.9%). Nineteen abscesses were diagnosed, two of them affecting two different spaces. The rest of the DNI were phlegmons. The most common symptoms at presentation were fever (76.9%), sore throat (57.7%), and neck pain or stiffness (46.2%). Asymmetric tonsil size was found on 76.9% of the patients and cervical lymphadenopathies on 65.4%. The leukocyte count was elevated (≥13.0 x 103 cells/μL) in 17 (65.4%) patients and C-reactive protein (≥ 5mg/L) in 24 patients. Computed tomography (CT) scan with contrast enhancement was performed in 22 patients. Considering the greater axis, the abscess's mean size in the CT was 19.9 ± 7.2 mm. All patients received intravenous antibiotics, being the association of ceftriaxone with clindamycin the most commonly used (69.2%). Five peritonsillar DNI were treated with surgical drainage (Staphylococcus aureus was isolated in one sample). The mean length of hospital stay was 6.7 ± 2.2 days. There were no complications or mortality.

Conclusion: The presentation of DNI is not always typical, and it may be difficult to diagnose. A complete medical history combined with a thorough physical examination, which should include the inspection of the oropharynx and the neck area, is essential to make the diagnosis, establish complementary exams to be performed, and correct treatment to be initiated to avoid serious complications. Treatment is intravenous antibiotics. Surgical drainage and corticosteroids are helpful in particular situations. In the case of performing surgical drainage, it is essential to collect pus for culture to adjust antimicrobial therapy.

ID: 257
Oral Presentation
Topics: ADOLESCENT MEDICINE
Keywords: leg, pain, adolescent, nonossifying, fibroma

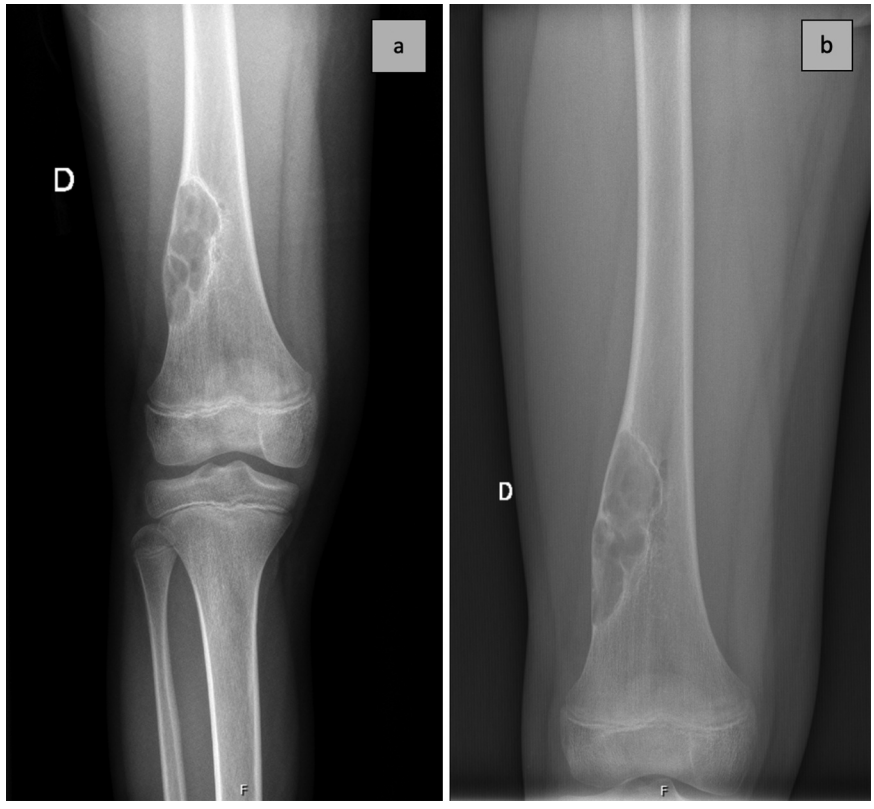
Case report: A benign cause of leg pain in an adolescent.

Rodrigues, Sara Sofia S.; Mendes, Joana Ferreira; Carvalho, Pedro Atilano; Loureiro, Graça
Centro Hospitalar Entre Douro e Vouga, Portugal

Background: Nonossifying fibromas (NOFs) are one of the most common types of benign cortical defects, usually affecting the metaphysis of long bones of children and adolescents. They result from a developmental defect in which areas that normally ossify are filled with fibrous connective tissue.

Report: A healthy 10-year-old male, otherwise healthy, was admitted to the hospital ER with a 3-weeks history of pain in the lateral aspect of the right thigh. The pain was described as slightly improving during the day and night, and matinal pain was reported. Pain killers such as paracetamol had limited effect. 3 days before the ER visit, the pain aggravated after a sudden movement of kicking a ball. The pain progressively worsened, and the day the boy came to the ER, he couldn't walk without support. There were no external inflammatory signs on physical examination, but tenderness on the lateral distal left thigh was present. Plain radiographs of the left knee showed well-defined osteolytic bone destruction at the metaphysis of the distal femur with thin sclerotic borders (Image 1a). The boy was observed by an orthopedist and was discharged with a

programmed MRI. An orthopaedic consultation was programed 2 weeks later. By that time, the pain was gone, and he hadn't any symptoms. The MRI was consistent with a NOF, with 60x26x22mm. He maintains follow-up by an orthopedist, and after one year, the NOF has remained stable (Image 1b), and the adolescent is still asymptomatic (Figure).



Discussion: Based on radiographic images, the initial suspected diagnosis was an aneurysmal bone cyst. However, the subsequent MRI was consistent with non-ossifying fibroma. NOFs are benign, self-healing fibrous defects involving the metaphysis of long bones in children and adolescents, occurring most frequently on the femur and tibia. The aetiology is unknown, and the lesion is believed to be caused by a developmental defect. Unlike this case, most children are asymptomatic, and NOFs are an incidental finding. The prognosis of NOFs generally is excellent as the natural history is gradual sclerosis as the child/adolescent enters the second and third decades of life. Thus, as it was in this case, if the patient has no symptoms, close observation with serial radiographs is the most reasonable management, and no further treatment is needed. Recognition of its benign evolution prevents parental anxiety and unnecessary medical investigation.

ID: 302

Oral Presentation

Topics: RARE DISEASES

Keywords: exome, sequencing, intellectual

The first reported case of Arboleda-Tham Syndrome from Turkey with a de novo mutation in KAT6A gene

Ayyildiz Emecen, Durdugul[1]; Atan Sahin, Ozlem Naciye[2]; Avci Durmusalioglu, Enise[1]; Aykut, Ayca[3]; Durmaz, Asude[3]; Cogulu, Ozgur[1]; Ozkinay, Ferda[1]
[1]Ege University School of Medicine Department of Pediatric Genetics, Turkey; [2]Acibadem University School of Medicine, Department of Pediatrics, Turkey; [3]Ege University Department of Medical Genetics, Turkey

Background: Arboleda-Tham Syndrome (ARTHS), is caused by monoallelic pathogenic variants of KAT6A gene located on chromosome 8p11. KAT6A gene consists of 17 exons and encodes the protein lysine acetyltransferase 6 (1). Intellectual disability, developmental delay, microcephaly, cardiac and gastrointestinal involvement are the common clinical findings of this syndrome. To the best of our knowledge this is the first Turkish ARTHS patient detected by WGS with a denovo mutation. In this study we report a 5 year old boy with intellectual disability and facial dismorphism, diagnosed as ARTHS, demonstrating the power of WGS in diagnosis of highly variable clinical presentations of this syndrome.

Case Presentation: 5 year old boy with developmental delay, dismophic face and failure to thrive was admitted to department of pediatric genetics. He was born 2700 grams term. There was no consanguinity among parents. His weight was 16,7 kg (3-10P), height 106 cm (3-10P), with an head circumference of 49,5 cm (3-10P) . Dysmorphologicam examination revealed hypertelorizm, epicanthus, synophrisis, microretrognathia and pes equinovarus. At follow up intellectual disability was noted. Cranial MRI, echocardiogram and hearing tests were all normal. At the ophthalmological examination a defect in peripheral retinal pigment epithelium was noted. In the abdominal ultrasound cystic dilatation of bile ducts was detected. His karyotype was 46,XY. In microarray 1,2 Mb deletion in 16p11.2 and 408 kb duplication in 14q21.1 region were detected with an unsignificant clinical correspondance.

Learning Points and Discussion: The patient could not be diagnosed with current clinical findings, and exome sequencing was performed. A de-novo heterozygous c.1581 T>A (p.Tyr527Ter) variant in KAT6A gene which could probably be pathogenic regarding in silico analysis was detected. To the best of our knowledge this is the first publication of an ARTHS case in literature, with c.1581 T>A (p.Tyr527Ter) variant in KAT6A gene and also first case of ARTHS case reported from Turkey. At retrospective evaluation regarding clinical correspondence, clinical and laboratory findings of our case were compatible with Arboleda-Tham Syndrome.

This study shows the clinical usefullness of exome sequencing and reveals importance of reverse phenotyping, both as unique tools in the diagnosis of rare diseases. In this study we present the first case of ARTHS from Turkey and report a new variant that have not been reported before in literature.

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ID: 328
Oral Presentation
Topics: GENERAL PEDIATRICS, NUTRITION & DIETS, NEONATOLOGY
Keywords: Breastfeeding, Artificial Feeding, Neonatal Jaundice, Perinatology

"Phototherapy during hospitalization and maintenence of exclusive breastfeeding after discharge - which influence?"

Miragaia, Pedro[1]; Ashworth, Joanna[2]; Almeida, Rui[3]
[1]Centro Hospitalar Universitário São João, Portugal; [2]Centro Materno-Infantil do Norte, Centro Hospitalar Universitário do Porto, Portugal; [3]Unidade Local de Saúde de Matosinhos, Portugal

Introduction: Neonatal jaundice (NJ) is a common condition in newborns. The publication of international guidelines on the management of NJ was temporally associated with the increase of phototherapy use in these patients. Yet, adverse effects of this technique are still discussed nowadays. This work aimed to analyze the impact of phototherapy use during hospitalization of newborns with NJ on the duration of exclusive breastfeeding after their discharge.

Methods: Retrospective study, including healthy term newborns admitted for NJ to do phototherapy (cases) and healthy term newborns evaluated for NJ discharged home with no need of phototherapy (controls). Excluded newborns admitted for other reasons. Collected data about gender, gestational age, type of birth, parity, weight on birth and admission, bilirubin levels, type of phototherapy and type of feeding on admission and after 1, 3 and 6 months.

Results: Among the 234 analyzed processes, 96 were related to newborns admitted to doing phototherapy. On admission and after 1 month of life, we found no statistically significant difference between the use of phototherapy and type of feeding. However, after 3 and 6 months, the percentage of newborns exclusively breastfed was higher in those who weren't exposed to phototherapy (at 3 months 62.5% vs 31.6%, $p<0.001$ and at 6 months 55.0% vs 33.8%, $p=0.01$). After conducting logistic regression to adjust for potential confounders, not being exposed to phototherapy in the neonatal period was the only significant predictor for the maintenance of exclusive breastfeeding in the evaluated ages.

Conclusions: In this study, exposure to phototherapy to treat NJ was not associated with the type of feeding in the first month of life. Still, the finding of long term association with decrease use of exclusive breastfeeding suggest these exposed newborns may be a potentially vulnerable population to early dropout of this type of nutrition.

ID: 198
Oral Presentation
Topics: GENERAL PEDIATRICS, ALLERGY, IMMUNOLOGY & RESPIRATORY
Keywords: anosmia, isolated congenital anosmia, olfaction disorders, olfactory bulbs

A rare cause of anosmia in an adolescent

Ferreira, Adriana; Pimenta, Sofia; Sousa, Eulália; Machado, Ângela
Department of Pediatrics, Centro Hospitalar Tâmega e Sousa, Portugal

Background: Anosmia is a rare complaint in children and adolescents. It is mostly acquired and caused by chronic sinonasal diseases, severe head trauma, upper respiratory infections, or neurodegenerative diseases. Congenital anosmia is usually associated with Kallmann's Syndrome and other genetic disorders. Rarely, congenital anosmia can present with olfactory bulb agenesis as an isolated finding, without an associated syndrome, known as isolated congenital anosmia.

Case Presentation Summary: We present a case of a 15-year-old boy with familial hypercholesterolemia treated with a statin that in one of his visits to the outpatient paediatric clinic complained of lack of smell, although he could not recall for how long. He had no history of sinusitis, chronic nasal congestion, surgery, or chemical exposures. He showed normal psychomotor development and had no delayed puberty (Tanner 4). At 3 years old, he was bitten by a dog on the face resulting in a skin laceration without bone fractures. Anterior rhinoscopy revealed a non-obstructive mild septal deviation but no signs of trauma, nasal masses, or rhinorrhoea. Posterior rhinoscopy was unremarkable. Computerized tomography was normal. MRI demonstrated the absence

of the left olfactory bulb and sulci. At right, MRI showed shallow olfactory sulci and a punctiform structure that could correspond to a hypoplastic olfactory bulb. No parenchymal lesions and other cerebral or nasal malformation were identified. The hormonal study showed normal levels of follicle- stimulating hormone, luteinizing hormone, and testosterone. Therefore, isolated congenital anosmia was diagnosed in the absence of other structural abnormalities and hormonal deficiencies, as in Kallmann's Syndrome.

Learning Points Discussion: In the face of a patient with anosmia, a careful investigation should be performed to exclude serious conditions, such as Kallmann's syndrome. Isolated congenital anosmia can be diagnosed in patients with olfactory bulbs anomalies after excluding other structural and hormonal abnormalities. Empirical treatments such as corticosteroids, usually prescribed in secondary anosmia related to sinonasal disease or allergic conditions, are unnecessary in isolated congenital anosmia and harmful. The loss of smell can negatively impact dietary behaviours and nutritional status, and it prevents the detection of dangerous gasses and spoiled foods. So, advice regarding dietetic and living precautions should be given, for example, using smoke or gas alerts.

ID: 244

Oral Presentation

Topics: GENERAL PEDIATRICS, RARE DISEASES, RHEUMATOLOGY

Keywords: Caffey disease, cortical hyperostosis, infants, collagenopathy

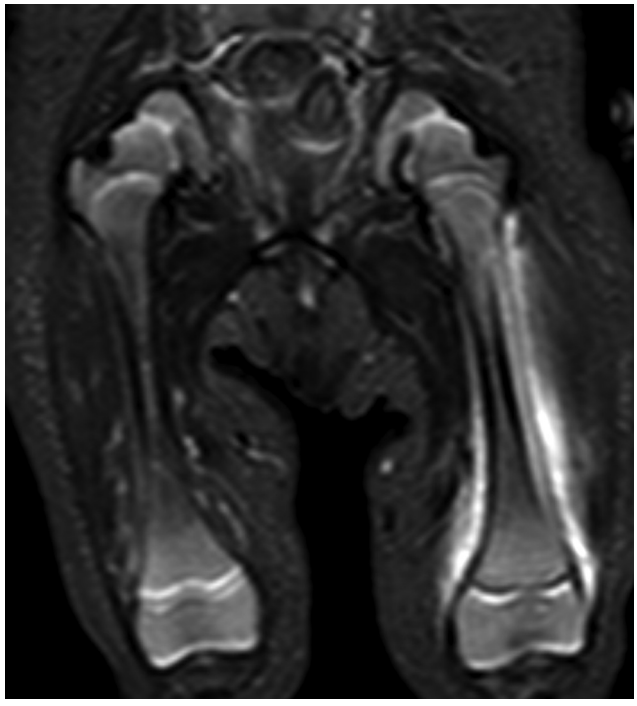
An unusual cause of cortical hyperostosis in infants

Paiva Ferreira, Ines[1]; Sousa, Bebiana[2]; Calejo, Rita[1]; Moreira, Adriana[3]; Zilhao, Carla[4]; Cunha, Joaquim[1]

[1]Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Portugal; [2]Department of Pediatrics, Centro Materno Infantil do Norte Dr. Albino Aroso, Centro Hospitalar Universitário do Porto, Portugal; [3]Department of Radiology, Centro Hospitalar do Tâmega e Sousa, Portugal; [4]Pediatric Rheumatology Unit, Centro Materno Infantil do Norte Dr. Albino Aroso, Centro Hospitalar Universitário do Porto, Portugal

Background: Caffey disease, also known as Infantile Cortical Hyperostosis (ICH), is a rare self-limited inflammatory collagenopathy affecting young infants. It is characterized by unusual irritability, soft tissue swelling and cortical hyperostosis. ICH is classically, but not exclusively, associated with an autosomal-dominant mutation in the COL1A1 gene.

Case Report: A healthy fifty-six days old female infant was admitted to the emergency department with a 12 hours history of irritability, increasing pain and mobility impairment of the lower left limb. There was no history of fever, other complaints, and no history of recent trauma or child abuse suspicion. No relevant family medical history is present. On physical examination, the infant was afebrile, had a lower left limb pseudoparalysis, and left thigh swelling and tenderness. There were no external wounds or bruises. Laboratory evaluation showed normocytic anaemia and elevated erythrocyte sedimentation rate, with normal leukocytes and platelets counts. Initial imaging study revealed a periosteal reaction in the left femur diaphysis on lower extremity radiography and was complemented by magnetic resonance imaging which confirmed a circumferential periosteal reaction of the left femur and proximal left tibia associated with adjacent soft tissue inflammatory changes; findings suggestive of bone fracture or malignancy were not seen. Urinary excretion of vanillylmandelic acid and homovanillic acid were not increased. Blood cultures and anti-treponema pallidum antibodies were negative. A presumptive diagnosis of Caffey disease was made. The presenting symptoms and inflammatory signs on her lower extremity resolved spontaneously. At six months follow-up visit, the infant remained asymptomatic without residual inflammatory signs or imagiological findings on ultrasound and radiography. The mutation on the COL1A1 gene was not found (Figure).



Discussion: After excluding entities like osteomyelitis, malignancies, physiological periostitis and child abuse, Caffey disease should be considered in the differential diagnosis of new subperiosteal bone formation in young infants to avoid prolonging unnecessary and invasive investigations. In the present case, the mutation classically associated with ICH was not found, which aligns with recent literature suggesting that mutations in other genes may be involved in the pathophysiology of this disease, thus justifying the need for further research.

ID: 205
Oral Presentation
Topics: GENERAL PEDIATRICS
Keywords: Down syndrome, genetic, trisomy 2[1]

Comorbidities of a pediatric cohort with Down syndrome.

Von Hafe, Madalena[1]; Marques, Raquel[1]; Simoes, Diana[1]; Cardoso, Beatriz[1]; Bordalo, Diana[1]; Maia, Ana[1,2]
[1]Pediatrics Department, Centro Hospitalar universitário de São João, Porto, Portugal; [2]Department of Gynecology and Obstetrics and Pediatrics, Faculty of Medicine, University of Porto

Introduction: Down syndrome (DS) is the commonest chromosomal disorder in live births. Screening for chromosome disorders is universally carried out in pregnant women in almost all countries in Europe. The study aimed to characterize pediatric patients with DS in a level III Hospital.

Method: A retrospective study was carried out in patients with DS with follow-up in a tertiary Hospital from 2008 to 2021. Statistical analysis was performed using the SPSS program.

Results: Ninety-three children with DS were analyzed, of which 51% were female. The majority (63%) had no prenatal diagnosis, and the diagnosis rate was similar in patients with and without

heart disease (p=0.167). The mother mean age in years was 33±8, and that of the father was 36±7, with no statistically significant differences in patients with heart disease (mother p=0.445; father p=0.195). Congenital heart disease was found in fifty-six per cent of the patients, with 24% of them diagnosed in the prenatal period. Overweight was documented in 15% of patients and obesity in 30%; this pattern was similar in patients with heart disease (p=0.105). Despite being overweight, dyslipidemia was an uncommon finding. Regarding other comorbidities, most patients underwent tonsillectomy (±myringotomy), 35% had changes on the thyroid axis, and only 4% had celiac disease. Dyslipidemia was also an uncommon finding.

Conclusion: In this cohort, most cases were diagnosed in the postnatal period, which may be related to inadequate pregnancy surveillance. Comorbidities are a frequent finding that requires regular investigation, a holistic approach and multidisciplinary follow- up.

ID: 222
Oral Presentation

Topics: GENERAL PEDIATRICS, NUTRITION & DIETS, PUBLIC HEALTH

Keywords: Childhood obesity, oxidative stress, cardiometabolic risk factors, physical activity, exercise

Impact of physical activity on redox status and nitric oxide bioavailability in nonoverweight and overweight/obese prepubertal children

Leite-Almeida, Laura[1]; Morato, Manuela[2]; Cosme, Dina[3,4]; Afonso, Joana[3,4]; Areias, José C.[5,6]; Guerra, António[5,7]; Caldas Afonso, Alberto[1,8,9]; Albino-Teixeira, António[3,4]; Sousa, Teresa[3,4]; Correia-Costa, Liane[1,8,9]

[1]Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Portugal; [2]Laboratory of Pharmacology, Department of Drug Sciences & LAQV@REQUIMTE, Faculty of Pharmacy of Porto, University of Porto, Portugal; [3]Department of Biomedicine - Unit of Pharmacology and Therapeutics, Faculty of Medicine of University of Porto, Portugal; [4]MedInUP - Center for Drug Discovery and Innovative Medicines, University of Porto, Porto, Portugal; [5]Department of Gynecology-Obstetrics and Pediatrics, Faculty of Medicine of University of Porto, Portugal; [6]Division of Pediatric Cardiology, Integrated Pediatric Hospital, Centro Hospitalar Universitário São João, Porto, Portugal; [7]Division of Pediatric Nutrition, Integrated Pediatric Hospital, Centro Hospitalar Universitário São João, Porto, Portugal; [8]EPIUnit – Instituto de Saúde Pública, Universidade do Porto, Portugal; [9]Department of Pediatric Nephrology, Centro Materno-Infantil Do Norte, Centro Hospitalar Universitário Do Porto, Porto, Portugal

Background: Nutritional status might contribute to variations induced by physical activity (PA) in redox status biomarkers. We investigated the influence of PA on redox status and nitric oxide (NO) production/metabolism biomarkers in non-overweight and overweight/obese prepubertal children.

Methods: We performed a cross-sectional evaluation of 313 children aged 8–9 years (163 non-overweight, 150 overweight/obese) followed since birth in a cohort study (Generation XXI, Porto, Portugal). Plasma total antioxidant status (P-TAS), plasma and urinary isoprostanes (P- Isop, U-Isop), urinary hydrogen peroxide (U–H2O2), myeloperoxidase (MPO) and plasma and urinary nitrates and nitrites (P-NOx, U-NOx) were assessed, as well as their association with variables of reported PA quantification (categories of PA frequency (>1x/week and ≤1x/week) and continuous PA index (obtained by the sum of points)) in a questionnaire with increasing ranks from sedentary to vigorous activity levels.

Results: U-NOx was significantly higher in children who presented higher PA index scores and higher PA frequency. Separately by BMI classes, U-NOx was significantly higher only in non-overweight children who practised PA more frequently (p = 0.037). In overweight/obese children, but

not in non-overweight, P-TAS was higher among children with higher PA frequency (p = 0.007). The homeostasis model assessment index (HOMA-IR) was significantly lower in more active overweight/obese children, but no differences were observed in non-overweight children. In the fully adjusted multivariate linear regression models for P-TAS, in the overweight/obese group, children with higher PA frequency presented higher P-TAS. In the U-NOx models, U-NOx significantly increased with PA index, only in non-overweight children.

Conclusions: Our results provide additional evidence supporting a protective effect of physical activity in non-overweight by increasing NO bioavailability and in overweight/obese children by enhancing systemic antioxidant capacity and insulin sensitivity. These results highlight the importance of engaging in regular physical exercise, particularly among overweight/obese children. A positive association between oxidant status and cardiometabolic risk markers has been described.

ID: 263

Oral Presentation

Topics: GENERAL PEDIATRICS

Keywords: Congenital diaphragmatic hernias; Morgagni hernia; Diagnosis

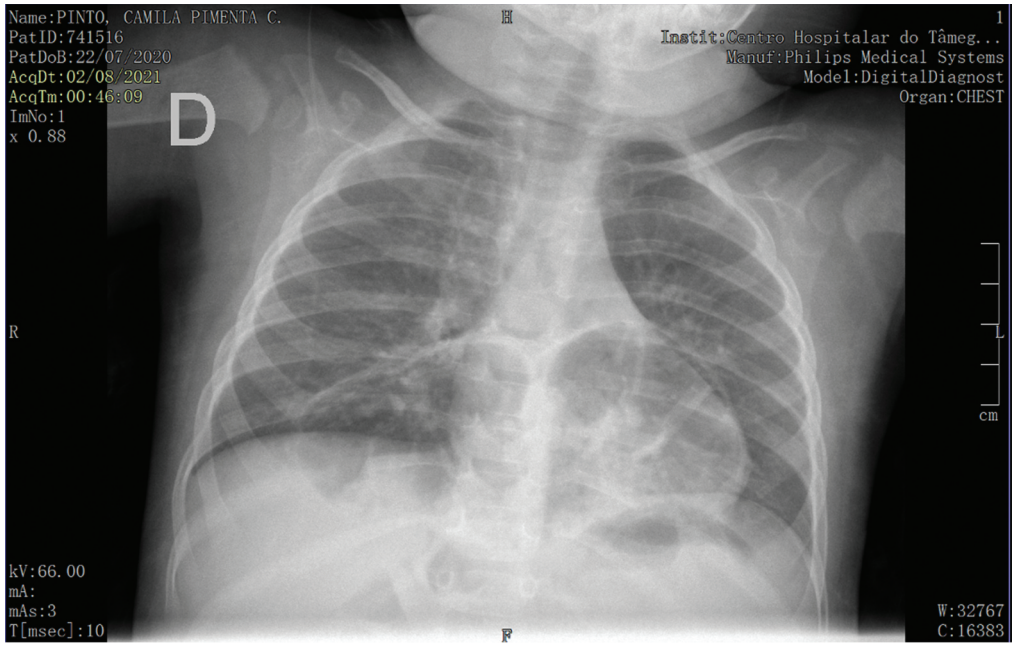
Morgagni hernia – an incidental diagnosis

Ribeiro, Rita Calejo[1]; Rojas, Doris[2]; Coelho, Ana[3]; Branco, Tiago[1]; Ferreira, Nuno[1]
[1]Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Portugal; [2]Department of Pediatric Emergency, Centro Hospitalar do Tâmega e Sousa, Portugal; [3]Department of Pediatric Surgery, Centro Materno Infantil do Norte Dr Albino Aroso, Centro Hospitalar Universitário do Porto, Portugal

Background: Morgagni hernia is one of two types of congenital diaphragmatic hernias (CDH), the rarer. It is a developmental defect of the diaphragm found in an anterior and retrosternal location, allowing the abdominal viscera to herniate into the chest. In contrast to patients with other types of CDH, 50% of patients with Morgagni hernia are asymptomatic at the time of diagnosis when chest imaging is performed for unrelated reasons.

Case Presentation Summary: We present a case of a 12-month-old female infant whose pregnancy was properly followed, without complications and with normal blood workouts and ultrasounds. As past medical history, at 11-months-old she had uncomplicated acute bronchiolitis. The patient presented with fever, dry cough, and maternal perception of respiratory distress with 24-hour evolution at the emergency department. The physical exam revealed mild signs of respiratory distress, and pulmonary auscultation revealed a prolonged expiratory time and wheezing. The patient was medicated with a bronchodilator and oral corticosteroid, with poor response to this treatment. An anteroposterior view chest radiography was performed (Figure), which showed no pulmonary alterations, but an image compatible with herniation of abdominal content into the chest, suggesting a diaphragmatic hernia in an anterior position. She had no previous image exams to compare. Posteriorly, a lateral view chest radiography was performed, which supported the previous clinical suspicion, with abdominal content protruding into the chest in a retrosternal position. The infant was referred to a pediatric surgeon for further evaluation and treatment decision. A thoracoabdominal CT scan was performed, which revealed a bulky Morgagni hernia with protrusion of colon and omental fat. Surgical treatment was proposed.

Discussion: It is crucial to evaluate all complementary exams properly in order to value all alterations found, being them related to the clinical manifestations or not. Morgagni hernias are often asymptomatic, which can lead to a delayed diagnosis. Although the symptoms are milder in most cases, compared with other congenital diaphragmatic hernias, all hernias should be surgically repaired due to their potential complications.



ID: 226

Oral Presentation

Topics: GENERAL PEDIATRICS, RARE DISEASES, DERMATOLOGY

Keywords: Neurofibromatosis type 1, Neurofibromatosis type 2, Cafe au lait spot, Neurofibroma, Optic nerve glioma, Schwannoma, Ependymoma

Neurofibromatosis: 30 years expirience in a terciary center

Simoes, Diana[1]; Urraca M.S., Isabel[1]; Lourenco, Joana Ventura[1]; Curval, Ana Rita[1]; Bordalo, Diana[1]; Maia, Ana[1,2]

[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal; [2]Department of Gynaecology-Obstetrics and Pediatrics, Faculty of Medicine of the University of Porto, Portugal

Background: Neurofibromatosis (NF) is a complex group of inherited diseases and encompasses three discrete medical conditions: NF type 1 (NF1), NF type 2 (NF2), and Schwannomatosis. Each of these conditions has distinct clinical findings; however, all share a propensity to develop nervous system tumours—demographic and clinical characterization of a cohort of patients with Neurofibromatosis.

Methods: Retrospective analysis of clinical data regarding patients with Neurofibromatosis in a tertiary centre between 1991 and 2020. Data collected included demographic information (age and sex), family history of NF, NF's subtype, clinical findings and mortality.

Results: A total of 79 patients with NF (53.2% male) were identified, 78 with NF1 and 1 with NF2. The mean age was 17 ± 6,5 years old, and approximately 24% had a family history of the disease. Skin involvement was the most common finding in NF1, with 94,9% of patients presenting cutaneous manifestations. Malignant nervous system tumours were present in 65,4% of cases, chiefly optic pathway gliomas. Lisch nodules were identified in 14,1%. Cognitive or behavioural disorders were found in 46,2% of patients, musculoskeletal disorders in 32,1% and orofacial

conditions in 28,2%. More rarely, seizures, nutritional disorders, testicular alterations, endocrinopathies or arterial hypertension were described. The only patient with NF2 had bilateral vestibular schwannomas associated with multiple spinal cord ependymomas and cutaneous schwannomas. The estimated lethality rate was 7,6% (6 patients).

Conclusions: Our findings were compatible with actual literature. Recognition of disease and counselling of these patients is essential to provide optimal care and minimize late complications.

ID: 164

Oral Presentation

Topics: GENERAL PEDIATRICS, RARE DISEASES

Keywords: Orofacial Cleft, Cleft lip and palate, Prenatal ultrasound, Prenatal diagnosis

Orofacial clefts: reflections on prenatal diagnosis and family history based on a series of cases of a tertiary hospital

Moreira, Tatiana[1]; Dias, Margarida[1]; Von Hafe, Madalena[1]; Curval, Ana Rita[1]; Moura, Carla Pinto[2,3,4,5]; Maia, Ana[1,2,6]

[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Portugal; [2]Transdisciplinary Team of Cleft Lip and Palate, Centro Hospitalar Universitário de São João, Portugal; [3]Department of Otorhinolaryngology, Centro Hospitalar Universitário de São João, Portugal; [4]Department of Human Genetics, Faculty of Medicine of the University of Porto, Portugal; [5]i3S, Institute for Research and Innovation in Health, University of Porto, Portugal; [6]Department of Gynaecology-Obstetrics and Pediatrics, Faculty of Medicine of the University of Porto, Portugal

Background: Orofacial clefts (OFCs) are the most common craniofacial malformation in the newborn, depending on the interaction of environmental factors and genetic predisposition. Prenatal diagnosis (PD) allows adequate counselling and planning for prenatal care and delivery. Accordingly, in 2001, two-dimensional (2D) ultrasound (US) screening became universally used in Portugal by governmental guidelines, and in 2007 four-dimensional (4D) US became available. This study aimed to describe the prevalence of family history in patients with OFCs and analyze PD in patients born before 2001, between 2001 and 2007 and after 2007.

Methods: Retrospective analysis of patients with OFCs followed by the trans-disciplinary team of a tertiary hospital. SPSS was used for data analysis with a significance level set at $p<0.05$.

Results: 672 patients with OFCs were identified: 40.9% isolated cleft palate (CP), 38.1% cleft lip and palate (CLP), 19.7% cleft lip (CL) and 1.3% atypical cleft; 57.1% were male. The prevalence of family history was 26.0%, of which 30.9% had a recognizable syndrome. Of those born before 2001, 13.7% had PD of OFC; of those born between 2001 and 2007, 32.6% had OFC diagnosed in utero; and in children born after 2007, PD increased to 47.1%. Since the implementation year of universal US screening in Portugal, 180 OFCs have been diagnosed in utero (vs 34 before).

Conclusions: In our study, about 1/4 of children had a positive family history. Since the implementation of universal US screening in Portugal, more OFCs were identified in utero (180 vs 34), with a significant statistical association ($p<0.05$). After the availability of 4D US, 136 OFCs had PN compared to 78 OFCs diagnosed by US before 2007 ($p<0.05$). Of all OFCs diagnosed prenatally, US revealed more accuracy for the diagnosis of CLP (65.4%) and CL (24.8%). CP is the most difficult to detect in utero (9.3%). Prenatal US screening in Portugal has technically evolved with consequent better diagnostic accuracy for the identification of OFCs, allowing better parenteral counselling. We should not forget that US is highly operator-dependent, and cleft palate can be easily missed.

ID: 194

Oral Presentation
Topics: INFECTIOUS DISEASES, PUBLIC HEALTH
Keywords: tuberculosis, children, public health

Casuistic report of infant tuberculosis in a high incidence area

Moreira, Mafalda; Alba, Diana; Calejo, Rita; Teixeira, Sandra; Vieira, Lucília
Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Portugal

Background: Tuberculosis (TB) in pediatric age remains a major public health problem that significantly impacts morbidity and mortality. Its diagnosis is a challenge due to the nonspecificity of the clinical presentation and the difficulty to confirm the infection. Although TB's incidence is declining in our country, in our area, there are still high values comparing to other regions. Our study aimed to know the reality in the pediatric age.

Methods: Retrospective analysis of children (younger than 18 years old) admitted to the Pediatrics' Department of a level two hospital diagnosed with TB between January 1st 2015, and December 31st 2020 (6 years). The data were collected through the analysis of the patients' clinical files.

Results: We found 10 cases of TB with a male gender predominance (60%). Children's age varied from 4 months to 17 years old, with a median age of 6.8 years. Half of the patients were adolescents, and 3 were infants. Ninety per cent of the children were previously healthy. On average, there were 1.7 cases per year, with a peak in 2018 (5 cases). The main symptoms reported were cough (7 patients) and fever (6). Pulmonary tuberculosis was diagnosed in 90% of the patients, and one patient presented TB lymphadenitis. Half of the children had previously been vaccinated with Bacille Calmette-Guérin. The infectious source was identified in 70% of the cases, all due to intrafamilial transmission. The isolation of Mycobacterium tuberculosis was possible in all of them. There was no mortality.

Conclusions: Although recent data show a decrease in its incidence in Portugal, our study confirms that TB remains a real problem, for which pediatricians should be aware, especially in our geographic area. It is essential to have a high clinical suspicion and perform good epidemiological research and an adequate diagnostic investigation that enable timely treatment. The notification of TB cases is essential for controlling the disease and its impact on public health.

ID: 285
Oral Presentation
Topics: RARE DISEASES
Keywords: dysmorphism, intellectual, exome

The First Report of Beaulieu-Boycott-Innes syndrome in two children from Turkey with two novel mutations in THOC6 gene

Atan Sahin, Ozlem Naciye[1,3]; Zeybek, Selcan[2]; Avci Durmusalioglu, Enise[3]; Ayyildiz Emecen, Durdugül[3]; Isık, Esra[3]; Cogulu, Ozgur[3]; Ozkinay, Ferda[3]; Atik, Tahir[3]
[1]Acibadem University School of Medicine, Department of Pediatrics, Turkey; [2]Izmir Tinaztepe University School of Medicine Department of Medical Genetics, Izmir; [3]Ege University School of Medicine Department of Pediatric Geneteics, Izmir

Background: Beaulieu-Boycott-Innes syndrome is caused by recently described homozygous or compound heterozygous mutations in the THOC6 gene on chromosome 16p13.This syndrome is characterized by intellectual disability facial dysmorphism and genitourinary anomalies(1,2). Till date, only 19 patients with BBIS have been reported. This study reports two new cases with two novel mutations from Turkey.

The genetic basis of ID may originate from chromosomal abnormalities, variations of copy numbres, point mutations or deletions/insertions affecting. (3). THOC6 encodes a part of highly conserved transcription and mRNA export (TREX) complex and is implicated in Beaulieu-Boycott-Innes syndrome (BBIS; MIM:613680) an AR form of Syndromic ID presenting with cardiac, renal involvement and facial dysmorphism. Here we report two additional cases with clinical features consistent with BBIS

Case Presentation: Patient 1 was born 2700 grams at 42 weeks of pregnancy. She had microcephaly, generalized hypotonia, callosum agenesis, developmental delay and pshycomotor retardation. There is consanguinity between her parents. At present she is 6 years and 6 months old, her weight is 10.400 grams (-3SDS), Height 92cm (-3SDS), head circumference : 42.5 cm (-3SDS) She has facial dismorphism (Figure 1) She underwent multiple genetic testing and no variant could be identified using targeted sequencing. By using whole exome sequencing (WES) we identified a novel homozygous THOC6: c.299G>A (p.Trp100Ter) variant. Patient 2 was born 2290 gr, 47.5 cm at term. She has sensorineural hearing impairment, unilateral choanal stenosis, and developmental delay. Her echocardiogram revealed a coronary sinus dilatation and persistant left superior vena cava (PSSVC) and she was born to consangineous parents. At present she is 6.5 kg, 67 cm, HC: 42 cm. She is hypotonic, has distinct facial features (Figure 2) with clinodactly in fifth finger (Figurè 3), deep plantar creases (Figurè 4), Her karyotype is 46XX. Her cranial MRI revealed corpus callosum hypoplasia (Figurè 5). At WES a novel variant in THOC6:c445C>T at chr 16 was detected.

Learning Points and Discussion: Exome sequencing of our patients with THOC mutations revealed two novel homozygous c.445C>T (p.Gln149Ter) and c.299G>A (p.Trp100Ter) that have not beenreported previously. This report of two new cases of BBIS with two novel mutations underlines the importance of WES as a diagnostic tool for clinicians for the diagnosis of ID with facial dysmorphism may be challenging, while extending the clinical and mutation spectrum of the syndrome.

ID: 197
Oral Presentation
Topics: INFECTIOUS DISEASES, EMERGENCY PEDIATRICS
Keywords: metabolic acidosis, severe acidosis, acute gastroenteritis

Severe metabolic acidosis as a result of a common disease

Moreira, Mafalda; Paiva Ferreira, Ines; Lira, Sónia; Tomas, Edite; Barroso, Fabio
Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Portugal

Background: Hydroelectrolytic disturbances are relatively common in children observed in the emergency department (ED), although severe alterations are not usually reported. Metabolic acidosis is caused by decreased bicarbonate (HCO3-); when pH is under 7.10 is classified as severe, which can predispose to cardiac alterations, such as arrhythmias, multi organic hypoperfusion, especially in the liver and kidney. Hypercloremic or non-anion gap metabolic acidosis can result from chlorid excess or an important loss of HCO3- in cases of gastrointestinal losses, as it happens in infectious diarrhea or cow's milk allergy, or renal losses associated with renal tubular acidosis or chronic renal insufficiency. Bicarbonate supplementation is the main component of the treatment in severe cases.

Case Presentation Summary: A previously healthy one-month-old girl presented to the ED with a 5-day history of diarrhea without fever. On examination, she looked malnourish with sunken eyes, being reported a 5% weight loss. The venous blood gas sample revealed pH 7.04, HCO3- 8.7mmol/L and Cl- 116mmol/L, with normal lactates and glucose values. Laboratory tests confirmed the ionic changes, with no other relevant alterations. Urinary pH was 6.5; serum anion-gap was 11.3mEq/L (normal), and urinary anion- gap was negative. Intravenous rehydration was promptly initiated,

and bicarbonate supplementation was prescribed next. The infant maintained multiple liquid stools during the first hours. Acidosis lasted 24 hours to improve significantly, despite the progressively diminished frequency of stools. She was monitored and under clinical and analytical observation for 2 days. After that, the patient was discharged with bicarbonate supplementation (in a dose of 2mEq/Kg/day) and maintained extensively hydrolyzed formula, already started at the hospital. At that time, she presented good weight gain, and after that, the repeated venous blood gas samples were normal, even after discontinuing bicarbonate supplementation one month later. A week after discharge, it was known that the stool specimen tested positive for Salmonella.

Learning Points Discussion: This case illustrates that a common disease as acute gastroenteritis can cause severe acidemia, which is associated with high morbidity and mortality. Pediatricians should be aware that diarrhea can be responsible for serious electrolyte disturbances that need to be identified and corrected promptly, especially in younger infants. Follow-up is necessary to confirm the maintenance of normal pH levels, especially after the suspension of bicarbonate supplementation to exclude renal tubular acidosis definitively.

ID: 114
Oral Presentation
Topics: GENERAL PEDIATRICS, INFECTIOUS DISEASES, PUBLIC HEALTH
Keywords: vaccination errors, error prevalence, vaccine safety, patient safety

The prevalence and types of childhood vaccination administration errors

Al Saleh, Abdullah Saleh
Ministry of the National Guard, King Abdualziz Medical City, Department of Family Medicine and Primary Care, National Guard Comprehensive Specialized Clinic, Riyadh, Saudi Arabia

Background: Vaccination administration errors are preventable events that can affect patients via inadequate immunological protection, injury, increased costs, inconvenience, and reduced confidence in the healthcare delivery system.

Objective: To calculate the prevalence of vaccination errors, determine which types of errors are most common, and identify opportunities for prevention.

Methods: A cross-sectional study was conducted at the National Guard Comprehensive Specialized Clinic in Riyadh, Saudi Arabia. The study population consisted of 2580 children who received routine vaccinations at the Well Baby Clinic. A checklist was used to collect data regarding vaccination administration errors.

Results: The prevalence of vaccination administration errors was 0.57%. The most common vaccination errors were vaccine dosing errors, administration of the wrong vaccine, and incorrect vaccination intervals.

Conclusions: Vaccine administration errors are uncommon; however, the impact of vaccination errors on the health of individuals and the population can be severe. Prevention strategies to avoid these errors should be considered.

ID: 118
Oral Presentation
Topics: HAEMATOLOGY / ONCOLOGY
Keywords: Childhood leukemia, Osteonecrosis, Pamidronate, Whole Body MRI

Use of intravenous pamidronate in pediatric leukemia patients with osteonecrosis (ON) resulted in reduced pain, stabilization of ON lesions, and avoidance of arthroplasty

Miettunen, Paivi Maria Hannele; Stephenson, Seamus Lucas; Haider, Seemab; Moorjani, Vijay; Anderson, Ron
Alberta Children's Hospital and University of Calgary, Canada

Background: Osteonecrosis (ON) is a disabling complication of chemotherapy for pediatric acute lymphocytic leukaemia (pALL). Hip and knee joint surface involvement by >50% can result in the joint collapse, which may require arthroplasty within 2 years of ON onset. There are few reports of non-surgical management of ON.

Objectives: pALL patients with chemotherapy-related ON, treated with intravenous pamidronate (IVPAM), were analyzed for clinical and radiologic outcomes.

Methods: This was a prospective study. All consecutive pALL patients (0-18 years), between 2004–2019, at a single institute, who developed bone pain, were evaluated for ON with a whole-body MRI (WBMRI) and for osteoporosis by bone mineral density (BMD), applying the International Society for Clinical Densitometry criteria. Patients with confirmed ON received two 9-month courses of once/monthly IVPAM (1 mg/kg/dose). Visual analogue scale for pain (VAS), with "0" being "no-pain" and "10" being "the worst possible pain", was administered at baseline,1,6, and 12 months and yearly. The radiologic outcome was assessed by serial WBMRIs and joint radiographs. BMD has repeated annually.

Results: All 40 pALL patients with bone pain met the criteria for osteoporosis, and 24/40(60%) had ON (9F:15M). ON was diagnosed at a mean 12.8 (median 6.1) months after ALL diagnosis; 13/24 (55%) patients were > 10 years. Twenty patients (83%) had ON lesions in both upper and lower extremities and 4(17%) in lower extremities only. ON affected 26 large joints (shoulders [10], hips [4] and knees [12]). All 4 hip, 4/12 knee and 0/10 shoulder joints had >50% of joint surface involvement by ON. The mean duration of follow-up was 7 (range 3-15) years. The mean pain VAS pre-IVPAM was 8.5/10 (range 8-10/10). The maximum pain VAS after first IVPAM was 1/10. The mean VAS was 0.08/10 (range 0-1/10) at 6 months, sustained throughout the follow-up. No patient required arthroplasty. Two femoral heads developed minor collapse (both patients > 10 years), while other ON lesions remained stable or resolved on imaging. All patients returned to baseline physical activities. BMD analysis showed an increase in lumbosacral BMD z-score after 1 year.

Conclusion: IVPAM was well tolerated and improved pain in all patients, enabling a return to normal function. Apart from minor collapse of 2 femoral heads, all patients demonstrated improved/stable ON lesions radiologically. No arthroplasty was required. The bone density improved in all patients. Novel treatment strategies with IVPAM should be considered to treat and prevent this debilitating complication progression in survivors of childhood cancer.

ID: 284
Oral Presentation
Topics: ALLERGY, IMMUNOLOGY & RESPIRATORY
Keywords: aHUS, eculizumab, angioedema, C5, polymorphism

Eculizumab induced severe angioedema in a patient with atypical hemolytic uremic syndrome: a case report

Siddiqui, Meraj[1]; Baskın, Esra[2]; Sarıalioğlu, Faik[3]; Özaltın, Fatih[4]
[1]Department of Pediatrics, Baskent University, Ankara, Turkey; [2]Department of Pediatric Nephrology and Rheumatology, Baskent University, Ankara, Turkey; [3]Department of Pediatric

Hematology and Oncology, Baskent University, Ankara, Turkey; [4]Department of Pediatric Nephrology and Rheumatology, Hacettepe University, Ankara, Turkey

Background: Atypical Hemolytic uremic syndrome (aHUS) is a rare life-threatening condition caused by hyperactivation of the alternative complement pathway. aHUS is presented by the triad of thrombocytopenia, microangiopathic hemolytic anaemia, and acute kidney failure. Eculizumab is a humanized monoclonal antibody, highly effective in reducing intravascular cell lysis in plasma resistant-aHUS. However, unusual responses to eculizumab treatment have been reported so far. Here we report a rare case of eculizumab-induced severe angioedema.

Case report: A 7-month-old female patient with a history of Adams-Oliver syndrome was hospitalized with vomiting, poor feeding, lethargy, and altered mental status. She was later diagnosed with plasma therapy-resistant-aHUS and subsequently developed angioedema after the initiation of eculizumab treatment. The patient developed limbs and palpebral edema within 24 hours of the first eculizumab infusion. Initially, these findings were considered secondary to renal failure and hypervolemia. However, she developed tongue and neck edema after the second and became massive after the third dose of eculizumab infusion. No acute pathology was detected in jugular

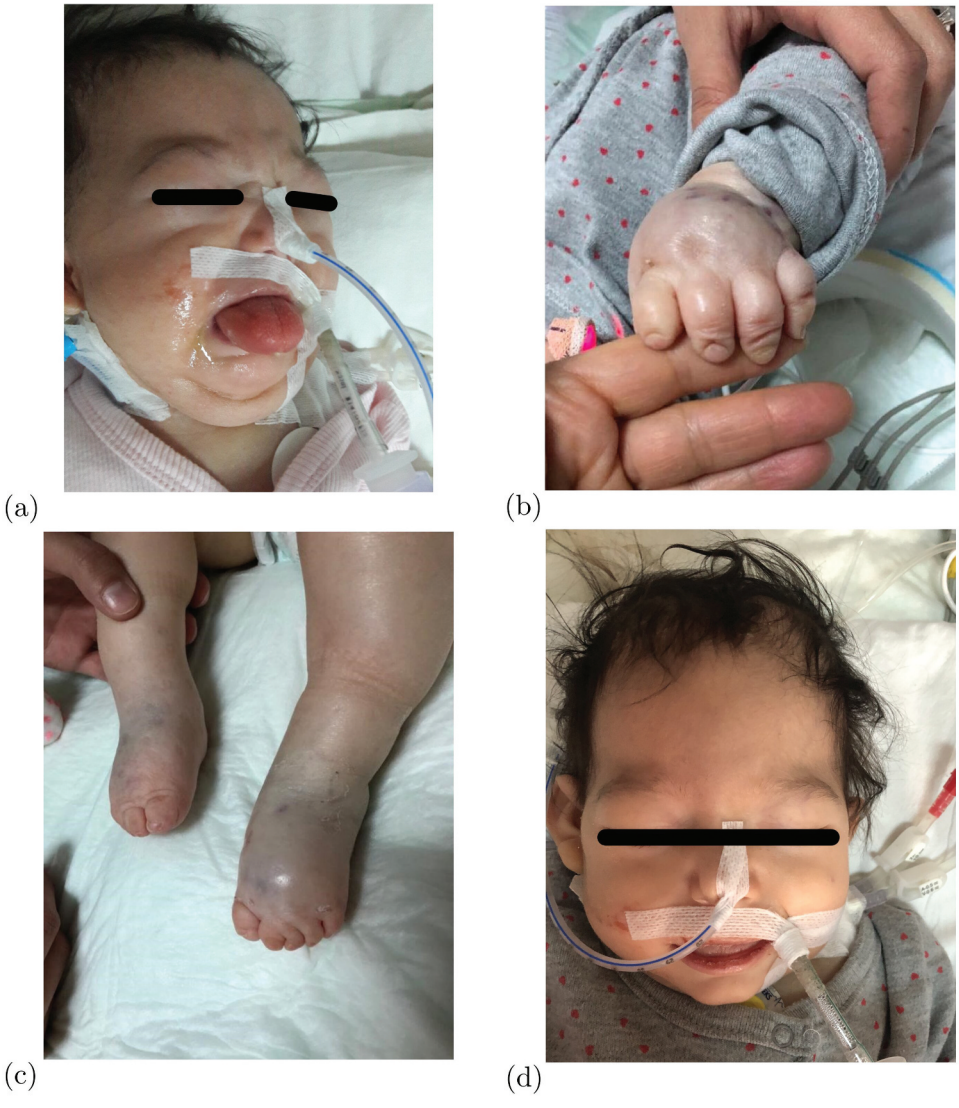


Figure 1. (a–c) The patient developed angioedema after first and further deteriorated after second dose of eculizumab infusion. (b) Her tongue and neck swelling resolved rapidly after iv diphenhydramine and steroids initiation.

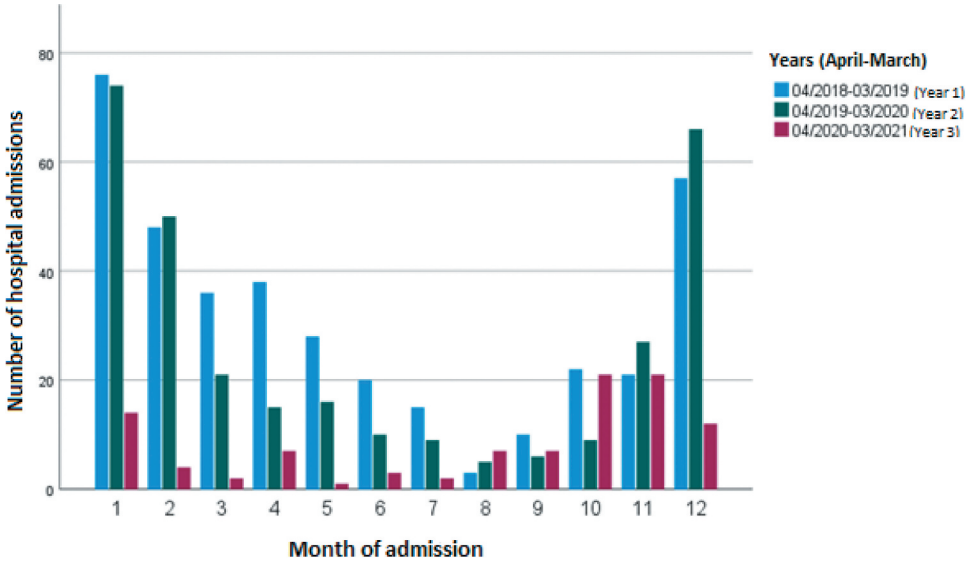


Figure 1. Number of hospital admissions per month, in each year analysed (April to March).

vein doppler ultrasonography. No urticarial rash or hives were observed in the physical examination. The patient was consulted with the pediatric allergy department. Her latex-specific IgE levels were within the normal range. An anaphylactic reaction was ruled out since her tryptase level was within the normal range. Her treatment with anti-C5-eculizumab was discontinued. Intravenous diphenhydramine and steroids were initiated. The patient's response to anti-allergic treatment was rapid. Her genetic analysis for the complement pathways revealed a CD46 heterozygous variation: CD46-201 NM_172359.3: c.*3A>G (stop loss) (Figure 1).

Conclusion: Despite anti-C5-eculizumab treatment in our patient, thrombocytopenia, microangiopathic hemolytic anaemia and acute kidney failure continued to worsen. Along with the eculizumab-induced hypersensitivity reaction in our patient, the inflammatory proteins such as C3a and C5a might have worsened her angioedema. To our knowledge, this is the first report of eculizumab-induced severe angioedema in a patient with atypical HUS.

ID: 266
Oral Presentation
Topics: GENERAL PEDIATRICS, HAEMATOLOGY / ONCOLOGY
Keywords: Chylothorax; Hodgkin lymphoma; children

Milky pleural effusion: a diagnostic challenge

Paiva Ferreira, Ines[1]; Sousa, Bebiana[2]; Caiado, António[3]; Vieira, Lucilia[1]; Ribeiro, Maria do Ceu[1]; Oliva, Tereza[4]
[1]Department of Pediatrics, Centro Hospitalar do Tâmega e Sousa, Portugal; [2]Department of Pediatrics, Centro Materno Infantil do Norte Dr. Albino Aroso, Centro Hospitalar Universitário do Porto, Portugal; [3]Department of Pneumology, Centro Hospitalar do Tâmega e Sousa, Portugal; [4]Department of Pediatrics, Instituto Português de Oncologia do Porto Francisco Gentil, Portugal

Background: Chylothorax is a rare cause of pleural effusion in paediatric age, particularly beyond the neonatal period. Nonetheless, it represents a potentially life-threatening condition that can lead to serious respiratory, immunologic and nutritional complications. Despite post-surgical complications being the leading cause, a wide range of aetiologies must be considered according to the clinical setting.

Case Report: A 16-year-old female adolescent with intellectual development disorder and recently treated latent tuberculosis was admitted to the emergency department with a two-week history of productive cough and fever in the preceding seven days. She had recently completed a 5-days azithromycin cycle with no symptomatic response, which was initiated after a presumptive diagnosis of atypical pneumonia. The review of systems was positive for constitutional symptoms, including loss of appetite with a 12% weight loss in two months. On physical examination, she was febrile, pale and had cervical and supraclavicular lymphadenopathies. Laboratory evaluation showed microcytic anaemia, neutrophilic leukocytosis, elevated erythrocyte sedimentation rate, C-reactive protein, and thrombocytosis. Chest radiograph showed a right pericardiac opacity. Empirical antibiotic treatment with ampicillin was started for a suspected lower respiratory infection, and she was admitted to the general ward for study. The chest computer tomography scan showed a moderate right pleural effusion, multiple infracentimetric pulmonary nodules, bilateral mediastinal and hilar lymphadenopathies. Pleural fluid analysis revealed a chylothorax. Blood, sputum, pleural fluid, bronchoalveolar lavage and cervical lymphadenopathy bacteriologic and mycobacterial studies were negative. HIV, Treponema pallidum, Brucella and Borrelia Burgdorferi serologic tests were negative. The autoimmune study and angiotensin-converting enzyme were negative. A surgical excisional cervical lymph node biopsy and posterior staging study revealed a stage IV nodular sclerosis classical Hodgkin lymphoma. The patient is currently under chemo- and radiotherapy.

Discussion: Whilst malignancies are one of the most common causes of chylothorax in adults, these are a far less prevalent cause in children. However, the presence of a nontraumatic chylothorax is an indication to exclude lymphoma, which represents the most common tumour associated with this entity. Our patient´s past medical history of latent tuberculosis and the presentation with generalized lymphadenopathy prompted an exhaustive search for an infectious cause and the exclusion of sarcoidosis, thus highlighting the need for always considering miscellaneous causes such as granulomatous disorders in the differential diagnosis of chylothorax.

ID: 370
Oral Presentation
Topics: RARE DISEASES, DERMATOLOGY, NUTRITION & DIETS
Keywords: Epidermolysis Bullosa, genetics, malnutrition, dermatology, corticosteroid

Pediatric epidermolysis bullosa – complications and management

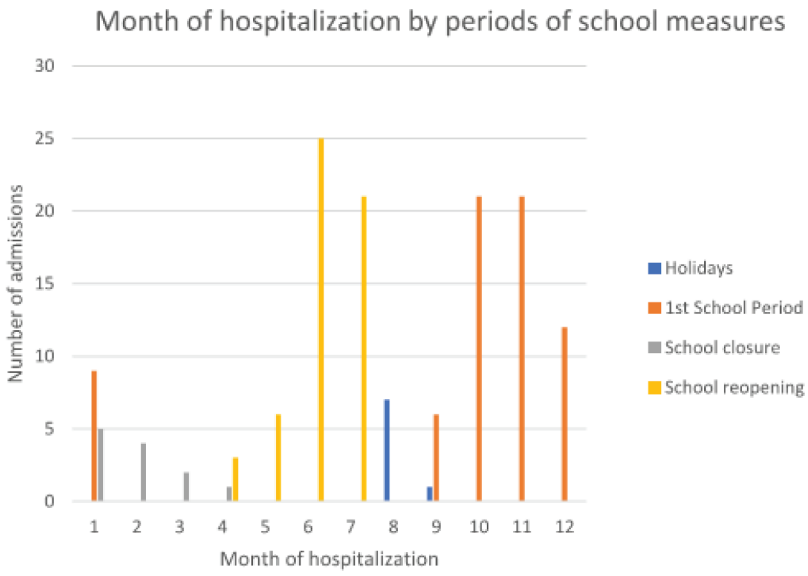
Pais-Cunha, Inês[1]; Gomes, Nuno[2]; Mota, Alberto[2,3]; Carvalho, Irene[1]
[1]Pediatria Hospitalar, Unidade de Gestão Autónoma da Criança e da Mulher, Centro Hospitalar Universitário de São João, Porto; [2]Serviço de Dermatologia, Centro Hospitalar Universitário de São João, Porto; [3]Faculdade de Medicina do Porto

Background: Epidermolysis bullosa (EB) is a rare genodermatosis, clinically and genetically heterogeneous. It is characterized by mutations that cause fragility of the epithelial tissues with the formation of blisters, erosions and ulcerations following minor trauma. It can be present from birth to early childhood. There are several complications associated with this disease.

Methods: Retrospective and descriptive analysis of pediatric patients with epidermolysis bullosa admitted to a tertiary hospital between 2008 to 2020.

Results: We identified 6 patients, 67% of the female gender. All of them presented with symptoms in the neonatal period. 5 of the patients underwent genetic testing with mutations of the COLA17 gene. 1 patient presented with clinical signs and a skin biopsy compatible with EB and did not pursue genetic testing. Regarding complications, 83% of patients had microcytic anaemia with the need for iron supplementation. Gastrointestinal symptoms were present in 67% of patients: three

Figure 1.



had symptoms of epigastric pain, treated with proton pump inhibitors, and 1 patient had esophageal stenosis with the need for gastrostomy. 67% had poor weight gain. Two patients had corneal leucoma, and one patient had bilateral hand sinequia. In terms of iatrogenic complications, one patient had suprarenal insufficiency due to the use of topical corticotherapy. 50% of patients were followed in psychology consultations. We registered one death.

Conclusions: Most patients had poor weight gain, reflecting both increased metabolic needs, gastrointestinal lesions and difficulties eating. Furthermore, anaemia was also frequent. The case of suprarenal insufficiency in the context of prolonged corticosteroid therapy reinforces that the choice of this treatment option should be judicious. These patients should have a multidisciplinary follow up to manage the variety of possible complications.

ID: 355

Oral Presentation

Topics: RARE DISEASES

Keywords: coralliform, staghorn, kidney, children

Management of staghorn calculi: what Pediatricians need to know

Reis, Gabriela[1]; Carvalho, Ana Luisa[2]; Carvalho, Indira[3]; Miranda, João[4]; Vieira, Paula Manuel[3]; Costa, Liane[3]; Teixeira, Ana[3]; Rocha, Liliana[3]; Costa, Teresa[3]; Sameiro-Faria, Maria[3]; Matos, Paula[3]; Mota, Maria Conceição[3]

[1]Ulidade Local de Saúde do Baixo Alentejo, Portugal; [2]Hospital de Braga; [3]Centro Materno-Infantil do Norte, Centro Hospitalar Universitário do Porto; [4]Centro Hospitalar Vila Nova de Gaia-Espinho

Background: Staghorn or coralliform calculi, a rare condition in children, consists of branched kidney stones that usually fill the renal pelvis into the calyces, most commonly associated with genetic, metabolic or anatomic defects. If untreated, kidney injury can occur due to obstruction and infection. Prompt diagnosis and proper follow up is essential to prevent recurrence and to preserve kidney function.

Aim: To describe a 10-year period experience of a Pediatric Nephrology Division of a tertiary Hospital on the management of patients with coralliform calculi

Methods: Retrospective analysis of the clinical records of all patients younger than 18-years, with the diagnosis of coralliform calculi, from January 2010 to December 2020.

Results: Five patients were included, with a median age at the diagnosis of 5,9 years (9 months – 10 years). Most of the patients (N=4) were female. Two had a family history of nephrolithiasis. At the diagnosis, three patients presented with febrile urinary tract infection, one had recurrent episodes of abdominal pain and vomiting, and the last one was referred for metabolic acidosis. The diagnosis was confirmed by ultrasound and/or computerized renal tomography in all patients. The etiological investigation allowed the diagnosis of cystinuria (homozygotic type A) in one patient and hypercalciuria and nephrocalcinosis in another patient. Three had urinary tract dilation.

Chemical analysis was performed in three calculi which identified struvite (n=1), cystine (n=1) and calcium phosphate (n=1) composition. During follow-up, three children had recurrent urinary tract infections and one recurrent episode of renal colic. Three patients underwent percutaneous nephrolithotomy; all needed more than one surgical procedure. Due to the surgical risk, one patient with concurrent myotonic dystrophy is under conservative treatment. One patient is currently waiting for surgery. Three patients maintain recurrent episodes of stone formation. One patient developed kidney scarring and one developed stage II chronic kidney disease.

Conclusion: The management of staghorn calculi in children is a challenge to clinicians and surge ons due to the inherent risks of complication and recurrence. The prompt diagnosis and etiology investigation, along with a close follow-up, warrants a better prognosis. The authors underline the importance of a multidisciplinary approach to achieve optimal treatment, with individualized management strategies since diverse underlying etiologies and clinical evolution might be implicated.

ID: 232
Oral Presentation
Topics: INFECTIOUS DISEASES, COVID-19
Keywords: Child, hospitalization, COVID-19, respiratory tract infections

Pediatric Hospitalizations for Respiratory Infections: before and after SARS-CoV-2

Monteiro, Sara[1]; Salazar, Luís[1]; Oliveira, João[1]; Souto, Mariana[2]; Morais, Lurdes[3]; Ramos, Ana[3]; Ferreira-Magalhães, Manuel[2,3,4]
[1]Paediatric Department, Centro Materno Infantil do Norte, Centro Hospitalar Universitário do Porto; [2]Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto; [3]Paediatric Pneumology Unit, Centro Materno Infantil do Norte, Centro Hospitalar Universitário do Porto; [4]CINTESIS – Centre for Health Technologies and Information Systems Research – Faculty of Medicine, University of Porto

Background: Acute respiratory infections (ARI) are an important source of childhood morbidity, having a major impact on hospital costs. With the emergence of SARS-CoV-2 and the COVID-19 pandemic, several non-pharmacological measures were adopted to mitigate this respiratory disease, changing the transmissibility of respiratory viruses and ARI incidence. This study aimed to compare pediatric hospitalizations for ARI before and after the appearance of SARS-CoV-2.

Methods: A retrospective observational study of admissions for ARI (non-SARS- CoV2 and SARS-CoV2) in the pediatric ward of a tertiary hospital between April/2018 and March/2021.

Hospitalization episodes of pediatric patients (aged 0-17 years inclusive) with length-of-stay > 24 hours, coded with an ICD-10 respiratory infection code, were included. Data collection was performed using electronic clinical records. The first 2 years were considered 'non-COVID-19' years (year[Y]1 and Y2), and between April/2020 and March/2021, the 'COVID-19 year' (Y3).

Results: There were 783 admissions of pediatric patients diagnosed with ARI. There was a significant decrease in the number of admissions in Y3 compared to Y1 and 2 (67% reduction from Y2 to Y3; p<0.001). There was a significant reduction in the proportion of bronchiolitis admitted in Y3 (42% reduction from Y2 to Y3; p<0.001) and an increase in pneumonia (increase of 124% from Y2 to Y3; p<0.001). There was a reduction in the identification of respiratory viruses (76.6% in A2 vs 56.4% in A3; p<0.001), mostly driven by a reduction in the respiratory syncytial virus (RSV) (46.8% in Y2 vs 2.0% in Y3; p<0.001). Conversely, rhinovirus was significantly more identified (15.3% in Y2 vs 22.8% in Y3; p<0.001) and SARS-CoV-2 was identified in 31.7% of patients in Y3. In Y3 more chest CTs were performed (5.6% in Y2 vs. 10.9% in Y3; p<0.001) and more systemic steroids (26.3% in Y2 vs. 40.6% in Y3; p= 0.023) (Figure 1).

Conclusions: Population non-pharmacological measures implemented between April/2020 and March/2021, in the context of COVID- 19, were associated with a reduction in pediatric hospitalizations for ARI. The decrease in ARI by RSV is highlighted in this pandemic context.

ID: 237
Oral Presentation
Topics: INFECTIOUS DISEASES, COVID-19
Keywords: Child, hospitalization, school closure, COVID-19, respiratory tract infections

Incidence and seasonality of respiratory viruses in pediatric admissions: what was the impact of school closure?

Oliveira, João[1]; Monteiro, Sara[1]; Salazar, Luís[1]; Souto, Mariana[2]; Morais, Lurdes[3]; Ramos, Ana[3]; Ferreira-Magalhães, Manuel[2,3,4]
[1]Paediatric Department, Centro Materno Infantil do Norte, Centro Hospitalar Universitário do Porto; [2]Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto; [3]Paediatric Pneumology Unit, Centro Materno Infantil do Norte, Centro Hospitalar Universitário do Porto; [4]CINTESIS – Centre for Health Technologies and Information Systems Research – Faculty of Medicine, University of Porto

Background: The lockdown and social distancing measures implemented to fight the Covid-19 pandemic led to significant changes in viral transmissions. This study aimed to analyze the seasonality of different respiratory viruses in children hospitalized with acute respiratory infections (ARI) and compare them with the lockdown/school closure measures implemented in Portugal.

Methods: Observational study of the hospital admission in a pediatric ward from a tertiary hospital between August of 2020 and July of 2021. Inclusion criteria were: age between 0-17 years old, duration of admission > 24 hours and diagnosis of respiratory infections defined by ICD-10. Data were acquired from the electronic records. Four different periods were defined according to the measures implemented: P1 (holidays: 1st of August until 13th of September), P2 (school opening: 14th of September until 20th of January), P3 (school closing due to emergency state measures: 21st of January until 4th of April), P4 (school reopening and end of emergency state: 5th of April until 31st of July).

Results: There were 144 admissions due to respiratory infections and there were significant changes in the number of admissions in each defined time period: n=8 (5,6%) in P1, n=69 (47,9%) in P2, n=12 (8,3%) in P3 and n=55 (38,2%) in P4. In the virus subgroup analysis, the

following had statistically significant changes between time periods: respiratory syncytial virus (RSV) (n=0 in P1, n=1 in P2, n=0 in P3 and =20 in P4; p<0,001), parainfluenza (n=0 in P1, n=1 in P2, n=0 in P3 and n=13 in P4; p=0,007) and SARS-CoV2 (n=2 in P1, n=23 in P2, n=5 in P3 and n=4 in P4; p<0,001). In turn, the following virus didn't show incidence variations: adenovirus, metapneumovirus, rhinovirus, influenza, enterovirus and bocavirus (Figure 1).

Conclusions: This study confirmed new variations in the seasonal pattern of hospital admissions caused by respiratory infections, as well as changes in the previously known seasonal incidence of RSV in our country (an atypical increase of incidence in the Spring/Summer of 2021), both of which were associated with the emergency state measures implemented and the school closure.

ID: 316

Oral Presentation

Topics: GENERAL PEDIATRICS, PUBLIC HEALTH, EMERGENCY PEDIATRICS

Keywords: Poverty, child poverty, screening.

Recognising and responding to childhood poverty in the Emergency Department: The family well-being project

Benzaken, Tami[1]; Bhansali, Abhinav[1]; Akhtar, Safia[1]; Mahenthran, Thakshayene[1]; Sunderland, Emma[2]

[1]London North West University Healthcare Trust, United Kingdom; [2]Whittington Health NHS Trust

Background: In the United Kingdom, almost 1 in every 3 children lives in poverty (1). Poverty is an important determinant of child health. Those children born and living in poverty are more likely to experience poorer health, including poor nutrition, chronic disease, reduced life expectancy and mental health problems (2). As health care professionals, we can often fail to recognise children living in poverty. We aimed to introduce a screening tool for childhood poverty in the paediatric emergency department in a district general hospital, where the local population experiences above national average levels of poverty.

Methods: A 3 question screening tool was introduced into the paediatric emergency department in a large and busy district general hospital. The screening tool was developed with input from staff, local charities (including food banks) and patients. The screening tool was initially applied in triage by paediatric nurses, but following a 6 month trial and completion of a PDSA cycle, this was subsequently incorporated into the routine medical clerking of paediatric patients. Children and families who responded YES to any of the screening questions were offered written advice about local sources of support, and food parcels were made available within the department.

Results: Fourteen percent of families answering the screening questions answered YES to one or more of the questions. In 100% of the cases where families answered YES to the screening questions, they were given written information on sources of support. We were able to increase staff screening completion rates from 9% to 42% by incorporating the screening questionnaire into the routine medical assessment. Families found the screening questionnaire to be acceptable and beneficial.

Conclusions: Healthcare workers are able to recognise and respond to childhood poverty in the acute setting utilising a timely and efficient screening tool. Thus, identifying children at risk of both poor health and social outcomes and enabling healthcare workers to respond to their needs. The screening tool was found to be both acceptable and favourable to staff, patients and their families.

ID: 155

Oral Presentation

Topics: GENERAL PEDIATRICS, ALLERGY, IMMUNOLOGY & RESPIRATORY, ADOLESCENT MEDICINE

Keywords: rhabdomyolysis, teenager, metabolic

A diagnostic pathway of acute rhabdomyolysis in a teenager: A case report

Rooney, Darragh Eamonn[1]; O'Connor, Margaret[2]; Sebastian, Alwin[2]; Murphy, Anne Marie[1]
[1]Department of Paediatrics, University Hospital Limerick, Ireland; [2]Department of Medicine, University Hospital Limerick, Ireland

Background and Aims: Rhabdomyolysis is characterised by muscle necrosis and the release of intracellular muscle components into the body's circulation. It typically presents with a clinical triad of muscular pain, weakness and dark urine.

Methods: We describe the clinical presentation, examinations findings, diagnostic investigations, treatment and outcome to date in an eighteen-year-old girl.

Results: Patient X is an adolescent teenager who presented to the Emergency Department with extreme muscular pain and fatigue for the past week. She had recently been commenced on a week-long course of doxycycline by her GP for suspected viral parotitis after experiencing bilateral facial swelling, which had resolved at the time of her presentation. Initial investigations showed blood on a urine dipstick, creatinine kinase (CK) of 84835, lactate dehydrogenase (LDH) of 3727 and a transaminitis with elevated alanine transaminase (ALT) of 742. Treatment consisted of aggressive fluid replacement along with strict input and output measurements. Eliciting the cause of her rhabdomyolysis proved difficult and involved the expertise of a multi-disciplinary team including rheumatology, nephrology and metabolic colleagues. There had been no pre-existing trauma or extreme exertion, no medical history of seizure activity, autoimmune or inflammatory disorders and no recent alcohol or drug exposure. An extensive metabolic workup including urine organic acids, acylcarnitine profile and amino acid profile revealed no evidence of a metabolic cause such as fatty acid oxidation defects. Given her clinical and biochemical improvement with regular fluids and strict monitoring, it was felt that it was likely to be doxycycline induced following her presentation with viral parotitis.

Conclusion: Rhabdomyolysis has a number of differentials, and once common causes have been out ruled, it is prudent to investigate chronic conditions such as metabolic disorders. We add our case of rhabdomyolysis in a Paediatric patient to the literature on this intriguing condition.

ID: 149

Oral Presentation

Topics: GENERAL PEDIATRICS, RARE DISEASES

Keywords: Syndromic craniosynostosis, obstructive sleep apnea, polysomnography, ambulatory monitoring, apnea-hypopnea index

Accuracy of detecting obstructive sleep apnea using ambulatory sleep studies in patients with syndromic craniosynostosis

Yang, Sumin; de Goederen, Robbin; Bredero-Boelhouwer, Hansje; Joosten, Koen F.M.; Mathijssen, Irene M.J.
Erasmus Medical Center, The Netherlands

Background: Obstructive sleep apnea (OSA) is seen in up to two-thirds of the patients with syndromic craniosynostosis. The gold standard for diagnosing OSA is hospital-based

polysomnography, although ambulatory home sleep apnea devices are available. This study aimed to assess 1) the accuracy of ambulatory sleep studies, 2) clinical decision making following sleep studies, and 3) the course of OSA during long-term follow-up.

Methods: A retrospective cohort study was performed in children with syndromic craniosynostosis, of whom the polysomnography and home sleep apnea device recordings were collected. Measurements of apnea-hypopnea index, respiratory event index, total sleep/recording time, heart rate, oxygen saturation, and oxygen desaturation index were derived from the sleep studies. Primary clinical care subsequent to the sleep studies was determined using electronic patient files.

Results: In total 123 patients were included, with 149 polysomnographies and 108 ambulatory studies. Performing an ambulatory study was associated with increased age at the time of measurement ($p = 0.01$). No significant difference was found between the two types of sleep studies regarding sleep study parameters. Subsequent to sleep studies, patients with no-mild OSA had expectant care while patients with moderate-severe OSA underwent OSA-related treatment. OSA was most prevalent up to the age of 5 years and noticeable after the age of 10 years in patients with Crouzon syndrome.

Conclusions: Ambulatory sleep studies are reliable for diagnosing OSA in older children and can be used to determine clinical decision-making. Hence, we recommend implementing ambulatory sleep studies in a protocolized management.

ID: 295
Oral Presentation
Topics: GENERAL PEDIATRICS, RARE DISEASES
Keywords: Craniofacial abnormalities

Can the nasion-mandibula ratio predict obstructive sleep apnea in patients with mandibular hypoplasia ?

van der Plas, Pleun P.J.M.; Koudstaal, Maarten J.; Pullens, Bas; Mathijssen, Irene M.J.; Wolvius, Eppo. B.; Joosten, Koen F.M.
Erasmus MC, Netherlands, The

Introduction: Robin Sequence (RS) is a condition classically characterized by mandibular hypoplasia (MH), glossoptosis and upper airway obstruction (UAO). Nonetheless, the exact role of MH in RS remains unclear. Furthermore, there is currently no golden standard to objectify the presence and severity of MH in these patients. This study aimed to evaluate if measuring MH, determined by a non-invasive method on lateral photographs, could be of use next to the polysomnography (PSG) in the diagnosis of RS by differentiating RS and controls. Furthermore, this study endeavoured to evaluate mandibular growth over time in patients with and without RS.

Methods: A retrospective study was performed on RS patients without life-threatening UAO and controls. Mandibular length was assessed using the Nasion-Mandibula Ratio (NMRatio) at the following three time points: 0-3 months, 1 year, and 4 years of age.

Results: A total of 107 patients were included in this study, 38 patients were diagnosed with RS (study group), 32 patients presented with clinical MH but without UAO (control group 1), and 37 patients presented with an isolated cleft palate (CP) without clinical MH and without UAO (control group 2). At 0-3 months, 1 year, and 4 years of age, significant higher NMRatio's were found in patients with RS compared to isolated CP patients, whilst no significant differences were found compared to MH patients. Within RS patients, no significant differences in NMRatio were found at all ages between isolated versus non-isolated RS patients and invasively versus non- invasively

treated RS patients. In all 3 patient groups, a significant decrease of the NMRatio was seen at the age of 4 years compared to 0-3 months and 1 year of age, whereas no significant difference was seen between 0-3 months and 1 year of age.

Conclusions: Although the NMRatio differs between RS patients compared to children with isolated CP, a seemingly small mandible (in a-p direction) does not reflect functional outcomes in RS patients and a PSG should always be performed to confirm the diagnosis. Despite that mandibular length significantly increased after the first year of life in all subgroups, mandibular size of RS patients does not seem to reach values of normal infants. Accordingly, mandibular catch-up growth, which is suggested to be typically present in RS patients, was not found by our study.

ID: 154
Oral Presentation
Topics: GENERAL PEDIATRICS, ADOLESCENT MEDICINE, EMERGENCY PEDIATRICS
Keywords: Teratoma, Adolescent, Airway, Emergency

Cervical cystic teratoma in an adolescent female: A case report

Rooney, Darragh Eamonn; Carey, Ruth; Mullarkey, Sarah; Murphy, Anne Marie; Khan, Ikram
University Hospital Limerick, Ireland

Background and Aims: Cervical cystic teratomas are uncommon neoplasms in our Irish population, and although these lesions are histologically benign, they are usually large and may cause significant airway obstruction.

Methods: We describe the clinical presentation, examinations findings, radiological investigations, treatment and outcome to date in an adolescent female.

Results: A previously well and neurodevelopmently normal 14-year-old Irish Caucasian girl presented to the Paediatric Emergency Department (PED) due to an anterior neck swelling noted during the preceding two days on a background of a one-week history of neck pain. There were no systemic features such as fever or weight loss. The swelling was present in the anterior mediastinum just below the cricoid process. It was firm, warm, irregularly shaped, and larger on the left side of the neck. On examination, there was a wheeze present when she was lying flat, and she reported being short of breath while doing so. Blood results were unremarkable with normal thyroid functions tests (TFT's). Her chest x-ray showed widening of the superior mediastinum with tracheal deviation and mild luminal narrowing. Follow on CT thorax demonstrated a complex solid cystic mass with substantial mass effect causing significant tracheal narrowing, tracheal deviation and superior vena cava obstruction suggestive of a mature cystic teratoma. She was immediately transferred to a tertiary level centre and had a good outcome after undergoing a successful complete resection. Her postoperative course was complicated by the development of an upper limb DVT which was treated with rivaroxaban.

Conclusion: Neck swellings require immediate and urgent investigation to determine the diagnosis and prevent serious complications such as airway compromise and vascular invasion. Swift action and prompt imaging can help to prevent life-threatening complications. We add our case of a cystic teratoma in a Paediatric patient to the literature on this rare entity.

ID: 191
Oral Presentation
Topics: GENERAL PEDIATRICS, EMERGENCY PEDIATRICS
Keywords: head injury, social media, education, paediatrics

High velocity injury following participation in a social media challenge: a case report

Ravenscroft, Liezel; Tormey, Shona
University Hospital Limerick, Ireland

Background: In recent times, social media challenges have resulted in significant medical injuries. We present a case of "Merry-go- round of Death" related injury. The "Merry-go-round of Death" is an internet challenge that debuted on social media platforms in 2009. The challenge involves participants, a merry-go-round and a motorised vehicle such as a motorcycle. During the challenge, participants sit on the merry-go-round while the wheel of the motorcycle is held against the disc of the ride, causing it to spin at excessive speeds. The aim of the challenge is to remain on the merry-go-round for as long as possible. However, extreme centripetal forces cause participants to fall off soon after starting the challenge. Medical sequelae include intracerebral haemorrhage, retinal haemorrhages, aortic aneurysm and cervical spine injury, which are common injuries related to bungee jumping, rollercoaster rides and shaken-baby syndrome.

Case Presentation: In our case, a 9-year-old boy presented to the Emergency Department with severe periorbital oedema, bilateral subconjunctival haemorrhages, bilateral swelling of temporal area, facial ecchymoses and unequal pupils, following participation in the social media challenge, "Merry-go-round of death". The patient spun on the merry-go-round at speeds of up to 30km/hr for 15-20 mins, equating to centripetal acceleration of up to 45 m/s2, or g-force of up to 4.5g. The patient remained conscious throughout, however, had severe facial distortion immediately after, with swelling in the temporal region and sunken cheeks. Subsequent findings on CT brain and MRI brain include mucoperiosteal thickening of the bilateral frontal, ethmoidal and sphenoidal air cells, likely due to haemorrhage. During admission, the patient reported intermittent headaches, dizziness, shooting pains, and pins-and-needles down his arms and legs; however, the neurological exam remained normal. The patient was discharged with ecchymoses and subconjunctival haemorrhages to self-resolve. The patient was reviewed two weeks after discharge. Subconjunctival haemorrhages were still present; however, symptoms had resolved.

Discussion: This case showcases the dangers of common social media challenges. Other mechanisms of injury-producing a significant g-force (such as rollercoaster injuries, shaken baby syndrome or bungee jumping) can lead to intracerebral bleeds, cervical spine injury or death. Fortunately, in this case, the patient received relatively minor injuries. The current paediatric population is in an age of information sharing like no other. Unfortunately, this includes the inherent dangers of social media challenges. When a vulnerable audience has unlimited access to unfiltered information, it can have devastating consequences. At what point does this become a healthcare problem?

ID: 210
Oral Presentation
Topics: GENERAL PEDIATRICS, HAEMATOLOGY / ONCOLOGY
Keywords: mediastinal mass, teratoma, lymphoma, leukemia, rhabdoid tumour

Mediastinal masses in paediatric practice

Moore, Sorcha Lorraine; Carey, Ruth; Murphy, Anne-Marie
University Hospital Limerick, Ireland

Background: The most common site of chest masses in the paediatric population is in the mediastinum. They're most often found on chest x-ray workups in ED. Children can present with symptoms due to direct involvement of nearby structures such as stridor, cough or dysphagia, and neck/chest swelling or B symptoms.

Aims: Study of the presentations, radiological findings and diagnoses of paediatric patients presenting with mediastinal masses.

Methods: A retrospective case series detailing 6 patients who presented with mediastinal masses in the paediatric population in UHL between 2016-2021.

Results: Case 1 - JC presented with increased work of breathing, stridor and cough. Chest X-ray showed a large mediastinal mass, with subsequent CT showing airway compromise. A diagnosis of T cell acute lymphoblastic leukaemia was made. Treatment was with prednisolone to decrease the mediastinal mass size and ease respiratory compromise and Regime B UKCALL 2011 protocol for intermediate risk T cell leukaemia. Case 2 - MR presented with 5day history of left-sided neck swelling, night sweats, weakness and fatigue. He had palpable bilateral supraclavicular nodes with a chest X-ray showing a superior mediastinal mass. Biopsy diagnosed stage II B Hodgkins lymphoma. Treatment was with 2 cycles of both OEPA and COPDAC chemotherapy. Case 3 - AK presented with vomiting, diarrhoea, weight loss and dysphagia. The diagnosis was delayed due to investigation for IBD, but a workup x-ray and subsequent CT showed an upper anterior mediastinal mass extending into the left apex. A diagnosis of Hodgkin's lymphoma was made, and treatment was with chemotherapy and radiation. Case 4 - SL presented with a 1week history of neck swelling, pain and wheeze and SOB on lying flat. Chest X-ray showed a large mediastinal mass with subsequent CT giving a diagnosis of a teratoma. Treatment was by surgical excision. Case 5 - 21-month old presented with a 3-week history of cough, wheeze, decreased appetite and Horners syndrome for 3months. Chest X-ray showed a large mediastinal mass causing tracheal deviation. Diagnosis of a malignant rhabdoid tumour was made. Treatment was with chemotherapy and resection. He sadly passed away 6months later. Case 6–13-years old presented with asthma exacerbation with cough, SOB and wheeze. Chest X-ray showed enlarging hilar outlines with peribronchial thickening and atelectasis bilaterally. Subsequent CT showed a well defined mediastinal mass extending into the aortopulmonary window and left lung and was diagnosed as a teratoma. Treatment was with surgical excision.

Discussion: Childhood mediastinal masses are rare, but 70-75% are malignant in origin. Imaging plays a crucial role in their quick diagnosis and management. 4/5 most common childhood cancers may present with a mediastinal mass. This raises the need for awareness of the potential presenting symptoms of a mediastinal mass to make a swift diagnosis to improve outcomes.

ID: 182
Oral Presentation
Topics: GENERAL PEDIATRICS, RARE DISEASES
Keywords: Oral health, paediatric dentistry, renal disease

Oral manifestations and implications for paediatric patients with renal disease: An overview

Cooper, Jessica; Humphreys, Judi; Lee, Sharon
Alder Hey Children's Hospital, United Kingdom

Background: Chronic renal disease is increasing in prevalence, with the number of patients diagnosed with end-stage renal failure increasing by approximately 5% annually. It is characterised by kidney dysfunction or a glomerular filtration rate of <60mL/min/1.73m2 lasting 3 months or longer. The disease can lead to a progressive decline in excretory function and endocrine regulation, resulting in hypertension, anaemia and retention of nitrogenous waste. Treatment involves dialysis or transplantation in severe cases, with patients often immunocompromised. Chronic kidney disease is associated with oral manifestations, including enamel hypoplasia, erosion, mucosal lesions, uraemic halitosis, periodontal disease and tooth mobility.

Objective: To provide an overview of oral manifestations and implications of renal disease and its treatments, commonly seen within paediatric patients.

Methods: This is a review of current literature.

Learning Points and Discussion: There are many systemic effects of renal disease relevant to the provision of dentistry. Enamel hypoplasia is an early sign of renal failure in children caused by metabolic acidosis. Patients are at increased risk of anaemia and deranged platelet levels, presenting in the form of pale, bleeding gingivae. Furthermore, cardiac failure as a result of hypertension increases the risk of infective endocarditis. Treatment of renal disease can also lead to the development of oral symptoms in children. Enamel erosion is a known consequence of nausea and vomiting caused by increased urea levels. Hyperphosphatemia is associated with altered bone metabolism, which in severe cases can lead to increased tooth mobility. In addition, heparinised patients are at increased risk of bleeding, further complicating the provision of dental treatment. Medications prescribed for children with renal failure, such as antihypertensives and immunosuppressants, are also associated with oral lichenoid reactions and gingival overgrowth. Oral ulceration, candidiasis and other mucosal lesions are commonly seen in immunocompromised post-transplant patients. These children are also at increased risk of sepsis of dental origin. Oral manifestations of renal disease, dialysis and post-transplant therapy are a known cause of discomfort and distress for children and their families. Furthermore, medical complexities deem many of these patients unsuitable for treatment within a primary care setting. Dental and medical care must be closely integrated in order to avoid undesirable treatment sequalae. Therefore, it is recommended that a care pathway be established for children with chronic renal disease, with a recommendation of a dental assessment incorporated into the pre-treatment workup process.

ID: 251
Oral Presentation
Topics: GENERAL PEDIATRICS
Keywords: Respiratory Syncytial Virus Infection, Patient Admission, Pediatrics, COVID-19 Pandemics

Resurgence of respiratory syncytial virus after COVID-19 pandemics – was there a change in seasonality?

Amorim-Figueiredo, Rosa; Neves, Raquel; Simoes, Joao; Simao, Margarida; Domingues, Rui; Rocha, Paula; Ferreira, Sara; Perry, Rosario; Costa, Beatriz; Machado, Rita; Amaral, Diana
General Pediatrics Unit, Hospital Dona Estefânia, Centro Hospitalar Universitário de Lisboa Central, Lisbon, Portugal

Background: Respiratory syncytial virus (RSV) is the main cause of acute bronchiolitis. The peak of the infection is historically described in the autumn/winter season. The 2020 COVID-19 pandemic seems to have modified the seasonality of some respiratory viruses. The first case of SARS-CoV-2 infection diagnosed in Portugal was in March 2020. School closure and the use of masks are some of the pointed reasons for a decreased number of RSV infections observed in the autumn/winter season post the beginning of the pandemic. Interestingly, there are now a few studies from around the globe showing the resurgence of RSV infections in the spring/summer season that followed.

Aim: To characterize the population of RSV infected infants admitted to a tertiary hospital before and after the beginning of the COVID- 19 pandemic.

Methods: A retrospective, descriptive, study was performed. All the RSV infected infants who were admitted to a Portuguese tertiary hospital from January 2017 to August 2021 were evaluated. The diagnosis of RSV infection was made through polymerase chain reaction of nasal secretions. Data such as age, gender, reason for admission, comorbidities, viral coinfection, bacterial superinfection,

oxygen therapy, admission at Intensive Care Unit, ventilatory support and length of hospital stay were analyzed.

Results: The data of a total of 354 patients was analyzed. The median age was 4 months (min 9 days, max 4 years), 50% were male. Before the COVID-19 pandemics (between 2017 and 2019), the peak of RSV infections used to occur in the months of December and January (medium of 25 and 28 cases per month, respectively). However, in December 2020 and January 2021 there was no detection of RSV. Nonetheless, a peak of RSV infection was verified in July and August 2021 (18 and 15 cases per month, respectively). The number of patients admitted for non-respiratory motifs, but in whom RSV was detected during the course of hospital stay, increased in 2021 (39%), comparing to 2017 (0%), 2018 (3%), 2019 (8%) or 2020 (3%), p<0,05. The number of viral coinfections was higher in 2021 (50%) comparing to 2017 (29%), 2019 (19%) or 2020 (18%), p<0,05. The patients admitted in 2021 were older (12 months average) than patients admitted in 2017 (5 months average) or 2018 (6 months average), p<0,05.

Conclusions: RSV seasonality was modified by the COVID-19 pandemic, with an increase of the hospital admissions being registered in the summer of 2021. Our tertiary hospital's numbers reproduce what is being described in other places of the world. Subsequent studies are needed to verify the behavior of RSV infections in the next seasons, to understand if RSV infections are becoming more or less severe and to analyze the impact of SARS-CoV-2 virus on the virulence of RSV.

ID: 221
Oral Presentation
Topics: GENERAL PEDIATRICS, PUBLIC HEALTH
Keywords: social media use, sleep patterns, adolescents

Adolescent use of social media and associations with sleep patterns Across 18 European and North American countries

Boniel-Nissim, Meyran[1]; Tynjälä, Jorma[2]; Furstova, Jana[3]; Villberg, Jari[2]; Gobiņa, Inese[4]; Klavina-Makrecka, Solvita[4]; Lahti, Henri[2]; Villeruša, Anita[4]; Jeriček Klanšček, Helena[5]; van den Eijnden, Regina[6]; Vieno, Alessio[7]; Marino, Claudia[7]; Inchley, Joanna[9]; Wong, Suzy[8]; Gariépy, Geneviève[10]
[1]School of Social Sciences and Humanities, Kinneret Academic College on the Sea of Galilee, Zemach, Israel; [2]University of Jyvaskyla, Faculty of Sport and Health Sciences, Jyvaskyla, Finland; [3]Olomouc University Social Health Institute, Palacký University Olomouc, Olomouc, Czech Republic; [4]Department of Public Health and Epidemiology, Institute of Public Health, Riga Stradins University, Riga, Latvia; [5]National Institute of Public Health, Ljubljana, Slovenia; [6]Interdisciplinary Social Science, Utrecht University, Utrecht, The Netherlands; [7]Department of Developmental and Social Psychology, University of Padova, Padova, Italy; [8]Public Health Agency of Canada, Ottawa, Canada; [9]MRC/CSO Social and Public Health Sciences Unit, University of Glasgow, Glasgow, UK; [10]Montreal Mental Health University Institute, Montreal, Canada

Background: Social media use (SMU) encompasses two concepts – intensive and problematic. Intense SMU indicates how much time adolescents spend on SMU, and problematic SMU refers to a loss of control over one's SMU. Parallel with the increase of SMU has been a shift towards poorer sleep, including shorter sleep duration, later bedtime, and greater social jetlag. SMU can unfavorably affect sleep. We investigated the associations between SMU and sleep patterns across 18 European and North American countries participating in the Health Behavior in School-aged Children (HBSC) study. We examined a range of SMUs, including non(active) use, active use, intense use, and problematic use. These four SMU categories represent a continuum of exposures to social media with the potential for varying harms on sleep. We hypothesized that intense and

problematic users would be associated with poorer sleep patterns compared to non(active) users and active users.

Methods: Data were from the 2017-2018 HBSC study. The final sample size was 86,542 in 18 countries: Belgium (Flemish), Belgium (French), Canada, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Iceland, Latvia, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Scotland, and Ukraine. Measures: (a) Sleep patterns (duration on school days and weekend, social jetlag); (b) Sociodemographic variables (age, gender, FAS); (c) Both scales - problematic SMU and intense SMU - were combined into four categories of SMU: i) non(active) SMU (online contact with others not at all or at most weekly AND non-problematic use); ii) active SMU (online contact with others daily AND non-problematic use); iii) intense SMU (online contact almost all the time throughout the day AND non-problematic use); and iv) problematic SMU.

Results: Non(active) use was associated with longer sleep on school days (+7.8 min) and non-school days (+7.8 min), earlier bedtimes on school days (9.6 min earlier) and non-school days (20.4 min earlier), and less social jetlag (-11.4 min) compared to active use. Intense and problematic SMU was associated with significantly less sleep on school days (-15.0 and -30.6 min, respectively) and non-school days (-10.8 and -21.0 min, respectively), later bedtimes both on school days (15.0 and 30.0 min later, respectively) and non-school days (30.6 and 50.4 min later, respectively), and greater social jetlag (+15.0 and -+19.8 min, respectively) than active SMU.

Conclusions: The findings of the current study highlight the need to identify patterns of use on social media to guide adolescents to a balanced use that may also affect their sleep patterns.

ID: 283
Oral Presentation
Topics: NEONATOLOGY
Keywords: National, screening, Xray, USG, Ireland

The use of x-ray as an effective adjunct to the national hip screening policy for developmental dysplasia of the hip

Khurshid, Sundas[1]; Mahmood, Lubna[2]; Javed, Mehwish[2]; Coleman, John[3]
[1]University hospital Kerry, Ireland; [2]St luke's general hospital Kilkenny; [3]Tallagh University Hospital

Background: Developmental dysplasia of the hip (DDH) is a common cause of morbidity for the at-risk population in Ireland. The national screening tool was last updated in 2017 and is used in all 19 maternity units in Ireland. It includes clinical examination in the first 3 days of life and Ultrasound at 6 weeks corrected for gestational age (CGA). The risk factors for DDH include a first degree relative with DDH, breech pregnancy after 36 weeks' gestation or abnormal hip exam. Babies with normal clinical examination and Ultrasound at 6 weeks are followed up in primary care centre. Ultrasound is the modality of choice at age less than 3 months and Hip x-ray thereafter.

Method: Our unit implemented the national policy but also completes a follow-up x-ray at 6 months, even with a normal ultrasound.

Results: We carried out a retrospective chart analysis across a nine-month period of our at-risk population that included 134 eligible patients. 5 babies (4%) fell outside the national screening criteria. Gestational age ranged from 32 to 42 weeks, 93% of those being greater than 36 weeks' gestation. Risk factors that required follow up included 72 babies(54%) with positive family history, 52(49) babies were born Breech, and 20%(N=27) had abnormal hip examination including either click (16%), dislocation (1%) or tight abduction (3%). 124(95%) patients received initial Ultrasound at 6 weeks CGA. 6% (N=7) of patients required treatment following Ultrasound with Pawlick's

Harness. 111 patients had x-ray performed at 6 months, and 9% lost to follow up or already having treatment. A further 9 patients required treatment with Boston Brace after 6 months x-ray. Of these 9 babies, eight had a normal 6- week ultrasound, and 1 did not attend. Six-week Ultrasound picked up 7 babies with DDH and 9 babies at 6 months with the help of X- rays.

Conclusion: In conclusion, our local hip screening policy effectively picked up additional cases of DDH in the at-risk population. The use of x-ray increased the yield of diagnosis and early treatment of DDH in the at-risk population. We believe this should be a consideration to the national hip screening policy in the future.

ID: 199

Oral Presentation

Topics: EMERGENCY PEDIATRICS

Keywords: Dental, Emergency, Maxillofacial, Trauma

Knocked out a tooth - what to do?

McInnes, Niall Campbell[1]; Barry, Siobhan Maria[2]
[1]Liverpool University Dental Hospital, United Kingdom; [2]University of Manchester, United Kingdom

Background: Avulsion refers to the total displacement of a tooth out of the socket and occurs in 0.5 – 16% of permanent teeth and less than 1% in the primary dentition, most commonly affecting maxillary anterior teeth. However, the management differs dramatically between primary and permanent teeth. Avulsed primary teeth are not reimplanted due to the risk of damage to the permanent successor. Whilst a dental issue, patients may well present initially to their general medical practitioner or paediatrician. Therefore, it is essential that all doctors who treat children are aware of the most appropriate initial management of these injuries to allow for timely management and the best chance of long-term survival of the tooth.

Case: We present a case series that highlights the initial management of avulsion injuries in primary and permanent dentitions. Case 1 focuses on an avulsion injury in the primary dentition. A 2-year-old boy suffered an avulsion injury to the Upper left Primary central incisor (ULA) combined with an intrusion injury to ULB. This case was correctly managed by simply monitoring the situation and allowing the ULB to re-erupt. This contrasts with case 2, where an avulsed ULC was unnecessarily replanted and splinted. This tooth will likely lose vitality and may cause damage to the permanent successor. Cases 3 and 4 involve the management of an avulsion injury in the permanent dentition. In the first case, a 14-year-old boy sustained an avulsion of Upper Right permanent central and lateral incisors (UR1/2), which were replanted within 30 minutes of injury and secured by a splint. This was followed up appropriately, and the teeth have a good long term prognosis. Case 4 describes a patient who sustained avulsion of UL1 with delayed reimplantation. The management of this case was suboptimal, and by the time of presentation to secondary care, the tooth had undergone significant resorptive damage, which necessitated removal.

Learning Points: These cases highlight the importance of appropriate initial management of avulsion injuries. The steps involved are relatively straightforward and, if done well, can prevent tooth loss and the resulting burden of dental care. Primary teeth should never be reimplanted. Replanting permanent teeth within 60 minutes of loss allows for revascularisation and long-term retention.

ID: 340

Oral Presentation

Topics: ADOLESCENT MEDICINE

Keywords: Adolescents, mental health, COVID-19, worry, socioeconomic position

Socioeconomic position, worry and psychosomatic problems among students in Sweden in the wake of the COVID-19 pandemic

Hagquist, Curt; Gustafsson, Jan-Eric
University of Gothenburg, Sweden

Background: The COVID-19 pandemic has profoundly affected the lives of young people and increased the risks for deteriorated health and widening health gaps.

Aim: The aim is to analyse the associations between socioeconomic position and worry triggered by the pandemic and their associations with psychosomatic problems.

Methods: From December 2020 to March 2021, 3068 16-17 years old students in Sweden completed a questionnaire about the impact of the COVID-19 pandemic on their schooling and everyday life. The response rate was 32 %, and the data were therefore weighted based on sociodemographic factors to take account of potential bias caused by the non-responses. During the spring semester of 2020, around two-thirds of the students also responded to questions about their psychosomatic health. Multinomial logistic regression was applied to analyse the associations between socioeconomic position (parental education) and worry about different personal and family issues. Binary logistic regression was used to analyse the association between worry and psychosomatic problems.

Results: The association between socioeconomic position and worry showed a consistent pattern. Across almost all worry themes, the odds of experiencing worry often or always was higher for students with lower educated parents compared to higher educated parents. The odds for having to worry often/always about family finances was four times higher among students in the former group than the latter, controlling for sex. The magnitude of the association was about the same for worry about parental unemployment. In addition, also worry about personal and parental illness caused by COVID-19 showed strong associations with socioeconomic position. Worry was also clearly associated with students' psychosomatic health. Students who often or always experienced worry were more likely to report psychosomatic problems. Worries for personal and parental illness and family finances showed the highest odds ratios, controlling sex and parental education.

Conclusions: The results demonstrate that worry related to COVID-19 about personal and family issues during the pandemic are socially structured. The socioeconomic position is associated with worry in similar ways that are common for health and health-related behaviors. Negative impacts of the pandemic are more common among students from lower socioeconomic backgrounds compared to higher ones. In addition, the significant associations between different worry themes and psychosomatic problems among students are noticeable. While the current study does not allow for conclusions about causality, the results indicate that experiences of worry during the pandemic may increase the risk of deteriorated mental health and inequalities among young people.

ID: 234
Oral Presentation
Topics: ENDOCRINOLOGY, ADOLESCENT MEDICINE
Keywords: type 1 diabetes mellitus; transition to adult care; transition outcomes

Health care transition program for type 1 diabetes patients: the experience of a tertiary centre

Pinto, Filipa[1]; Mendonça, Fernando[2]; Bernardo, Ana[3]; Neves, João Sérgio[2]; Castro-Correia, Cíntia[4]
[1]Department of Pediatrics, Centro Hospitalar Médio Ave, Portugal; [2]Department of Endocrinology, Diabetes and Metabolism, Centro Hospitalar e Universitário São João, Portugal; [3]Department of

Pediatrics and Neonatology, Centro Hospitalar Entre Douro e Vouga, Portugal; [4]Pediatric Endocrinology Unit, Pediatrics Department, Centro Hospitalar e Universitário São João, Portugal

Background: Type 1 diabetes (T1D) is a chronic disease associated with substantial morbidity and mortality. Adolescents and young adults with T1D are at risk for poor metabolic control due to the multiple challenges that they face during this crucial period. Although recommendations for transition care were developed in the last decade, there is evidence that health care outcomes in this age group are poor. In our centre, a transition program was established in August/2016.

Objective: Evaluate the program's impact on health outcomes.

Methods: Retrospective study comprising data from 130 patients with T1D, transitioned from endocrinology paediatric to adult services, between January/2013 and December/2019. The study population was divided into two groups considering the timing of discharge from paediatric care: before (group 1; n=54) and after (group 2; n=76) implementing this program. These groups were compared regarding multiple clinical outcomes and follow-up attendance.

Results: In both groups, age at transition was 18.2 ± 0.46 years (Table 1). The transition period was longer in group 2 (14 vs 4 months). There was no difference between groups in clinical attendance frequency in the year prior and after to transition. After 24 months of the first appointment in adult care, loss of follow-up occurred in 20.4% and 22.4% (group 1 and 2, respectively); p=0.78. HbA1c was <7.5% in 14.3% of patients in group 1 and 20.3% in group 2 at the first adult visit. In the last paediatric appointment, the mean HbA1c was 8.9% in group 1 vs 8.8% in group 2. After the transition, mean HbA1c was 9.4 vs 8.9 in groups 1 and 2, respectively. Hospitalizations due to acute complications of T1D in the first year after transition occurred in 9.4% of patients in group 1 while that happened in 7.9% in the other group (p=0.76). Ophthalmological screening and dietary

Table 1. Demographic, clinical characteristics and outcomes by group

	Group 1 (n= 76)	Group 2 (n=54)	P value
Female	25 (46.3%)	44 (57.9%)	0.19
Age at transition in years Mean (± standard deviation)	18.2 (± 0.5)	18.2 (± 0.4)	0.71
Duration of diabetes in years Mean (±standard deviation)	9.2 (3.9)	10.4 (3.9)	0.87
HbA1c before transition Mean (± standard deviation)	8.9 (± 1.8)	8.8 (± 2)	0.86
HbA1c after transition Mean (± standard deviation)	9.4 (± 2.3)	8.9 (± 1.8)	0.77
Hospitalization due to T1D complication (1st year after transition) n (%)	5 (9.4%)	6 (7.9%)	0.76
Ophthalmological screening in the 3 years after transition n (%)	44 (86.4%)	58 (82.9%)	0.61
Ophthalmological screening in the 3 years before transition n (%)	45 (86.5%)	49 (76.6%)	0.17
Nutritionist appointment in the 3 years after transition n (%)	38 (71.7%)	54 (71.1%)	0.94
Nutritionist appointment in the 3 years before transition n (%)	42 (82.4%)	44 (63.8%)	0.026
Loss of follow-up in 24 months n (%)	11 (20.4%)	17 (22.4%)	0.78

counselling with a nutritionist were similarly performed in both groups before and after the transition.

Conclusions: Our work demonstrated that the instituted transition program did not significantly improve clinical outcomes and patient adherence to follow-up. These findings add to the controversy among the literature regarding efficacy on clinical outcomes of transition programmes in diabetes care. However, patients' satisfaction with the continuity of care in these transition programs needs to be considered. The reduced sample size may be one of the hypotheses to explain the lack of statistical significance. Delineating specific strategies and appealing approaches in this age group is crucial to promote appropriate care throughout and following transfer from paediatric to adult services.

ID: 337

Oral Presentation

Topics: ADOLESCENT MEDICINE

Keywords: Adolescence, immigrants, health, Mediterranean countries, social relationships

Mental, physical and behavioural well-being of immigrants in Mediterranean countries

Moreno-Maldonado, Concepción[1]; Gaspar, Tânia[2]; Moreno, Carmen[1]; Walsh, Sophie[3]; Dalmasso, Paola[4]; Harel-Fisch, Yossi[5]; Salado, Vanesa[6]; Charrier, Lorena[4]; Ercan, Oya[7]; Tesler, Riki[8]; Berchialla, Paola[9]; Maor, Rotem[10]; Gaspar de Matos, Margarida[11]

[1]Department of Developmental and Educational Psychology, Universidad de Sevilla, Spain; [2]Psychology and Education Sciences Institute/CLISSIS/Lusiada University; ISAMB/Lisbon University; [3]Criminology Department, Bar Ilan University, Ramat Gan, Israel; [4]Department of Public Health and Pediatrics, University of Torino, Italy; [5]School of Education, Bar Ilan University, Ramat Gan, Israel; [6]Department of Experimental Psychology, Universidad de Sevilla, Spain; [7]Department of Pediatrics, Istanbul University-Cerrahpasa, Turkey; [8]International Research Program on Adolescent Well-Being and Health, Faculty of Education, Bar Ilan University, Israel; [9]Deptartment of Clinical and Biological Sciences, University of Torino, Italy; [10]Israel HBSC research team; [11]Aventura Social Project, Faculty of Human Motricity, University of Lisbon, /Department of Education, Social Sciences and Humanities, Faculty of Human Kinetics, University of Lisbon/ISAMB Research Center, Faculty of Medicine, University of Lisbon, Lisbon, Portugal

Background: Immigration is a global phenomenon and an increasing reality with special expression in many Mediterranean countries. Adolescent immigrants face the challenges of adolescence together with the social and cultural challenges associated with their migrant status. It is important to characterize the physical, psychological, and social factors associated with the wellbeing and life satisfaction of first- and second-generation immigrant adolescents. We compared three groups of adolescents (native, first-generation immigrant, and second-generation immigrant) in relation to health, health behaviours, social contexts, and socio-economic status (SES). We examined factors predicting life satisfaction regarding adolescents immigrant status.

Methods: Population data was collected from the 2018 Health Behaviour School-Aged Children survey. The present study included 39,247 adolescents from eight Mediterranean countries (Greece, Israel, Italy, Malta, Portugal, Spain, Turkey, and Macedonia); 18792 (47.9%) were female, 27077 (80.1%) were natives, 1355 (4%) were first-generation migrants, and 5352 (15.8%) were second- generation migrants. Age ranged from 10.5 years to 16.5 years (mean age 13.5). Multivariable models were used to examine the association between perceived adolescents' health and life satisfaction, as wellbeing outcomes, with migrant status controlling for SES, social support, and health behaviours.

Results: Statistically significant differences were found between the three groups for most of the variables under study. First- generation immigrant adolescents showed the highest risk, presenting lower levels of life satisfaction, worse health, less healthy behaviours (in eating, drinking, sexuality, and involvement in bullying and cyberbullying), less positive relationships with parents, teachers and peers, and lower SES. First-generation immigrant adolescents engaged in physical activity more often (seven days a week) than their counterparts (natives and second-generation immigrants). In addition, factors predicting adolescents' life satisfaction differed among the different groups. Life satisfaction for first-generation immigrant adolescents was best explained by health perception, eating behaviour, body image, communication with the father and relationship with peers. Life satisfaction among second- generation immigrant adolescents was better explained by age, SES, perceived health, body image, smoking, physical activity, communication with the mother and father, and relationships with teachers and peers.

Conclusions: Migrant adolescents, especially first-generation migrants, are at higher risk in terms of health, life satisfaction, and social relationships. Moreover, this research allowed us to identify specificities related to life satisfaction among adolescents with different migrant statuses, which alerts the need for intervention at the level of health promotion, wellbeing, and social integration with specific needs for each group.

ID: 188
Oral Presentation
Topics: ADOLESCENT MEDICINE, PUBLIC HEALTH
Keywords: Nicotine pouches, tobacco-free nicotine, smoking, social media, smoking prevention

Novel nicotine pouches: An investigation into staff awareness

Crummey, Aoife; Keogh, Aoife; Ulhaq, Aman; Besi, Eleni
Edinburgh Dental Institute, NHS Lothian, Edinburgh, United Kingdom

Background: Nicotine pouches, or tobacco-free snus, are small receptacles of nicotine powder placed under the user's lip. Currently unregulated in the European Union, they are a group of nicotine products that tobacco companies heavily invest in, marketing them as a 'reduced risk' method of gaining nicotine hit. Nicotine pouches are available in a range of flavours with fashionable packaging which contains no health warnings. Advertisement is targeted at younger generations with a heavy focus on social media, sporting events, festivals, and influencers to promote products via video sharing platform 'Tik-Tok'. There is a paucity of literature on the health effects of nicotine pouches; however, it's reported that nicotine can facilitate tumour supporting environments and can be toxic to the developing adolescent brain. Vaping has caused an increase in new-generation smokers. With the sector's focused marketing, there is a significant risk that nicotine pouches will become another means of adolescents and young adults developing a nicotine addiction. Healthcare professionals are ideally placed to provide patient advice. However, sufficient staff awareness and understanding of these products is required to enable this.

Methods: An anonymous voluntary survey was emailed to The Edinburgh Dental Institute staff members to determine awareness of nicotine pouches. The survey was open for 3 weeks and received 80 responses. The survey contained single-best, multiple-choice and short answer questions to establish respondents' awareness of tobacco-free nicotine products, understanding of nicotine pouches and determine if clinicians felt comfortable providing advice regarding nicotine pouches.

Results: The survey revealed that 80% of respondents were unaware of nicotine pouches. Of those aware, 18% were non-smokers, 20% had engaged in social smoking and awareness was most frequently through a discussion with the user (11%), advertising (11%) and social media (10%).

There was increased awareness of other nicotine products, with 92.5% aware of nicotine patches and 86% aware of vaping systems and nicotine gum. 74% of respondents were not aware of specific nicotine pouch brand names. Of clinical staff surveyed, 70% were uncomfortable advising patients on nicotine pouches, and 97% wished for further training.

Conclusions: This survey highlights the lack of awareness of nicotine pouches amongst clinical and non-clinical staff compared to other tobacco-free nicotine products. With the rising popularity and targeted marketing, this survey highlights the need to increase staff awareness and provide resources to enable informed patient discussions about the potential harmful effect of these products.

ID: 158
Oral Presentation
Topics: GENERAL PEDIATRICS, NUTRITION & DIETS, GASTROENTEROLOGY
Keywords: vomiting, social, environmental, biopsychosocial

The diagnostic odyssey of recurrent vomiting in a toddler: A case report

Rooney, Darragh Eamonn; Tsang, Valerie; Murphy, Anne Marie
University Hospital Limerick, Ireland

Background and Aims: Vomiting is a frequent reason for which parents seek medical advice. Our aim is to report a case of persistent vomiting in early childhood with a view to highlighting the importance of examining the child within family, community and culture when no apparent organic cause for this common symptom is identified.

Methods: We describe the clinical presentation, examination, and results of investigations in our patient. In addition, we explore the importance of navigating the biopsychosocial model in health and disease to achieve optimal outcomes for our child patients.

Results: A 15month old boy has been seen repeatedly for chronic persistent vomiting since the age of 4months. He vomits 2-4 times per day, often soon after food or milk. Vomits are non-projectile, non-bilious and non-bloody. His physical and developmental examinations are normal, apart from slow but adequate weight gain. He has no mechanical swallowing issues. The dietetics team prescribed supplements with little improvement. Upper GI studies and brain imaging were normal, along with extensive blood workup, including a metabolic screen. Comprehensive social and family history delivers the answer. His parents are economic migrants from Bangladesh living in Ireland for 10years. They live in shared co-owned accommodation, a house which they purchased in conjunction with another Bangladeshi family. All five of our patient's family share one bedroom with access to a communal kitchen and bathroom. The other family, who paid a larger sum of money towards purchasing the property, "own" the other rooms in the house. Our patient's older and younger sisters were previously hospitalised due to feeding issues without organic cause, eventually labelled as behavioural feeding problems triggered by psychosocial stressors.

Conclusion: Social and environmental factors should always be considered where medical investigations fail to unearth a diagnosis for common clinical problems in paediatrics.

ID: 202
Oral Presentation
Topics: EMERGENCY PEDIATRICS
Keywords: Lower limb, free flap, reconstruction, trauma, surgical outcome

A meta-analysis and metaregression for paediatric free tissue transfer for lower limb reconstructive surgery following trauma

Rojoa, Djamila[1]; Raheman, Firas[2]; Patel, Nakul[2]
[1]Imperial College Healthcare NHS Trust, United Kingdom; [2]Leicester Royal Infirmary, UK

Aims: Traumatic lower limb defects in children involving open fractures, structural damage and extensive tissue loss can be challenging. We aim to evaluate paediatric free flap outcomes in lower limb trauma, where restoration of function is important whilst preserving the cosmetic aspect.

Objective and Methods: Healthcare databases were searched to identify eligible studies. Meta-analysis of proportion was performed to obtain pooled values of prevalence, perioperative flap outcomes, alongside flap morbidity and mortality.

Results: 17 studies were identified, reporting 454paediatric lower limb trauma cases, of which 79% were open fractures. The mean age was 10years old, and 80% of patients were males. Road traffic accidents accounted for 69% of cases. A total of 457free flaps were analysed, with a 12%return to theatre rate due to vascular insufficiency, haematoma, or infection. Anterolateral thigh flaps were most common(33.8%), followed by latissimus dorsi flaps(26.2%). A complete flap failure rate of 3% (95%CI 1-5) was observed, whilst the partial flap failure rate was 9%(95%CI 5-12). The mean time-to-surgery was 11.8 days, with an average duration of 376 minutes and length of hospital stay of 9.2days. The mean follow-up was 11.9months, at which time most patients were ambulatory.

Conclusions: Our analysis supports the use of paediatric free flap transfer in lower limb trauma as a viable reconstructive option with comparable success rates to adults. This may be attributed to the low rate of vascular diseases in children and the relatively larger pedicle vessel sizes. Moreover, they have a better functional outcome due to the ability to overcome postoperative challenges.

ID: 201
Oral Presentation
Topics: EMERGENCY PEDIATRICS
Keywords: Trauma, lower limb, reconstructive surgery, free flap

Association of hospital case volume with paediatric free flap transfer outcomes for lower limb reconstructive surgery following trauma – A systematic review and meta-analysis

Rojoa, Djamila[1]; Raheman, Firas[2]; Patel, Nakul[2]
[1]Imperial College Healthcare NHS Trust, United Kingdom; [2]Leicester Royal Infirmary, Leicester, UK

Aims: Traumatic lower limb defects in children involving open fractures, structural damage and extensive tissue loss can be challenging. We aim to evaluate paediatric free flap outcomes in lower limb trauma, where restoration of function is important whilst preserving the cosmetic aspect.

Methods: Healthcare databases were searched to identify eligible studies. Meta-analysis of proportion was performed to obtain pooled values of prevalence, perioperative flap outcomes, alongside flap morbidity and mortality.

Results: 17 studies were identified, reporting 454 paediatric lower limb trauma cases, of which 79% were open fractures. The mean age was 10 years old, and 80% of patients were males. Anterolateral thigh flaps were most common (33.8%), followed by latissimus dorsi flaps (26.2%). A complete flap failure rate of 3% (95%CI 1-5) was observed, whilst the partial flap failure rate was 9% (95%CI 5- 12). Our analysis has shown that units performing a high caseload of trauma-free flaps annually have a lower rate of return to theatre (B=-0.102). Moreover, as expected, we

observed a positive association between increasing caseloads and flap failures (B=0.099) but a reduced total flap loss (B=-0.756) within these units.

Conclusion: Successful reconstructive surgery is attributable to both surgeon experience and the annual volume of free flaps performed within a department. Our analysis showed a higher rate of emergent exploration and higher rates of successful flap salvage, carried out by experienced teams in these high case volume hospitals.

ID: 136
Oral Presentation
Topics: EMERGENCY PEDIATRICS
Keywords: Abdominal pain, Children, Pneumoperitoneum

Pneumoperitoneum in a school boy: a case report.

Tsitsani, Pelagia[1]; Moschou, Vasiliki[2]
[1]Pediatric Clinic, General Hospital of Pella, Hospital Unit of Edessa, Greece; [2]NICU Gaia, Medical Centre of Athens, Greece

Background: Pneumoperitoneum (aeroperitoneum) describes gas within the peritoneal cavity, often due to perforation of gastrointestinal ulcers, intestinal perforation secondary to inflammatory bowel disease, diverticular rupture and cancer. Apart from the above pathology, in children, cases of non-surgical pneumoperitoneum are published and categorized as thoracic, abdominal, gynaecological, idiopathic and iatrogenic (following resuscitation, mechanical ventilation and endoscopic procedures).

Case Presentation Summary: We report a case of pneumoperitoneum documented by abdominal imaging in a 10-year-old boy. He was brought to the emergency department complaining of a two-hour sharp epigastric pain, nausea, and vomit. He mentioned midline dysphoria and anorexia during the last fifteen days. The patient had a low-grade fever, his abdomen was mildly distended with good bowel sounds, tender to palpation in the right and left quadrant, and the Rovsing sign was positive. He underwent complete blood work, which revealed a white blood cell (WBC) count of 9.3 k/μL and inflammation proteins within the normal range. Chest X-ray and abdominal ultrasound were normal. The patient was admitted to the pediatric ward and was observed overnight in consultation with the attending surgeon. He was put on a fast and received 24-hour fluid requirements intravenously. The following day and while the pain had significantly decreased, the patient was febrile with leucocytosis (WBC of 20.8 k/μL), and inflammation proteins were elevated (CRP of 5 mg/L and PCT of 0.2 ng/mL). Abdominal CT showed triangles of gas among bowel loops, and emergency surgery was conducted, during which the patient was diagnosed with a perforated stomach ulcer.

Discussion: Abdominal pain in children, although common and often not due to a critical illness, should always be taken seriously and usually requires patient re-evaluation and/or basic investigation. The point is not to underestimate/miss an acute surgical emergency, which can result in septic shock and organ dysfunction. Patients with pneumoperitoneum from gastrointestinal perforation can present with a range of symptoms: from mild localized abdominal discomfort to severe abdominal pain with rebound and guarding. Multiscientific cooperation between pediatricians, surgeons, and radiologists may prove of the utmost value for the young patient and be potentially lifesaving.

ID: 241
Oral Presentation
Topics: PUBLIC HEALTH

Keywords: Health promotion, Medical education, Health promoting schools, French health students service

The benefits of the French health students service in school settings for the training of medical students

Hurel, Cynthia[1,2]; Godeau, Emmanuelle[2,3]; Chapron, Anthony[4,5]
[1]EHESP, France; [2]Univiversité de Rennes, Département de Santé Publique, F-35000 Rennes, France; [3]CERPOP – Équipe SPHERE– UMR1295 INSERM – Université Toulouse III Paul Sabatier; [4]Department of General Medicine, University of Rennes 1, Rennes, France; [5]Univ Rennes, CHU Rennes, Inserm, CIC 1414 (Centre d'Investigation Clinique de Rennes), F-35000 Rennes, France

Background: Health students service is a new French national measure to train future health professionals for health promotion. It consists of preparing, implementing and evaluating primary prevention actions in different settings by health students. Most of the actions target children and adolescents in school environments. Our study aims to analyse the potential benefits of the French health students service in school settings on the training of medical students as implemented by the Faculty of Medicine in Rennes, France.

Methods: Our study uses a qualitative research methodology. We performed a thematic analysis of transcripts from 16 semi-directed interviews with 19 school professionals (e.g. teachers, nurses or headmasters) who helped health students with their health service and of open responses of 76 students responses to the evaluation of the health service program conducted by the Faculty of Medicine in Rennes.

Results: The health service was described by some school professionals as an opportunity for them to make health students discover their pupils. Young children (3-10 year-olds) were described as less known by health students and other specific populations such as children living in disadvantaged neighbourhoods. Teachers believed they increased the pedagogic competencies of health students as well as their knowledge of specific education professionals. Many underlined the innovative intersectionality of the French health student service. For the health students, the main finding is that the health service allowed them to learn how to communicate with children and adolescents. One interesting finding of our study is the tension in the perception of health students as peers to the pupils (and the health service as a peer-to-peer intervention) or peers to the education professionals (and the health service as an opportunity for professionals to update their health promotion expertise).

Conclusions: The French health student service represents an opportunity to develop health promotion as well as to train future health professionals to health promotion and specific populations such as children and adolescents. Further research is needed to evaluate the effective acquisition of these competencies by health students. The extent of this national policy materialises an important shift towards health promotion in France.

ID: 332
Oral Presentation
Topics: GENERAL PEDIATRICS, EMERGENCY PEDIATRICS
Keywords: Seizures, Investigations, Paediatrics, Emergency

Analysis of the value of serum biochemistry performed in the paediatric population presenting with seizure to a regional Emergency Department

Johnston, Lucy; Preddy, John
Paediatric Department, Wagga Wagga Base Hospital, NSW, Australia

Introduction: One in twenty children (5%) will experience a seizure of some form during childhood. Evaluating children who present to the Emergency Department (ED) with seizures can be a challenge. The emergency clinician has to decide if serum investigations are necessary to help determine the cause of the seizure, particularly if it is unprovoked. Current Australian and international practice guidelines do not recommend testing electrolytes, urea, creatinine, calcium, magnesium and phosphate for children presenting with a seizure to the ED unless there is an additional clinical concern.

Method: In this retrospective study, we reviewed serum biochemistry results for 170 children aged 6 months to 16 years presenting with a seizure to a regional ED over a two-year period. The frequency of serum biochemistry sampling and associated abnormalities were correlated to outcomes, including seizure duration, length of hospital stay and re-presentation. The usefulness of investigations for different seizure types was evaluated. Data were recorded on an Excel spreadsheet, and statistical analysis was used to determine the significance (P-value).

Results: We found that of 170 children presenting with seizures to the ED, 60% of them had serum biochemistry performed. Amongst those tested, 28% of patients had serum biochemistry abnormalities, all of which were only mildly deranged from standard reference ranges. None of these abnormalities was considered significant enough to have caused the seizure. Children were more likely to have biochemistry performed if the seizure was prolonged (F1,168 = 10.7, P = 0.0013) (Figures 1 and 2).

Conclusion: Biochemistry results did not lead to an underlying diagnosis that caused the seizure, even where the ictal and postictal period was prolonged, or there were clinical concerns about an additional diagnosis. We would recommend blood glucose be performed for all patients presenting with a motor seizure. Additional tests should only be performed to investigate co-morbidities at the time of presentation or for patients with a known risk of significant electrolyte disturbance. We would continue to recommend electrolyte measurement for patients with status epilepticus. This recommendation will allow for a reduced number of investigations performed on patients with seizures, which will, in turn, reduce trauma to the child and cost to the healthcare system. Reducing investigations will allow more time for clinicians in the ED to prioritise patient care with positive outcomes, which increases patient safety.

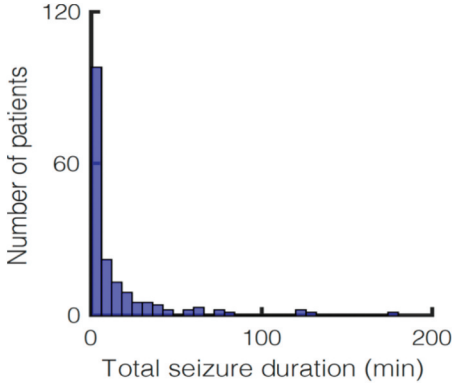


Figure 1. Number of patients vs. total seizure duration per patient in minutes.

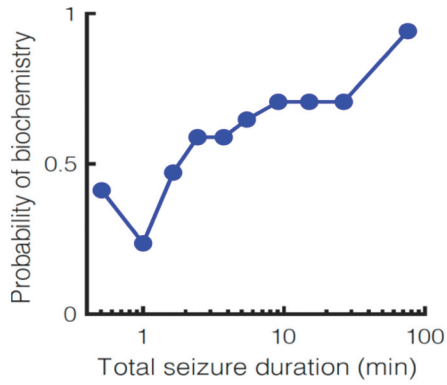


Figure 2. The relationship between the total seizure duration per presentation and the probability of biochemistry performed.

ID: 235
Oral Presentation
Topics: GENERAL PEDIATRICS, ALLERGY, IMMUNOLOGY & RESPIRATORY
Keywords: Sleep, asthma, rhinitis, children

Impact of allergic disease on children's sleep quality

Soares, Joana[1]; Ferreira, Adriana[1]; Stella, Lorena[2]; Silva, Joana Brandão[2]; Reis, Joana[2]; Ferreira, Sofia Simões[2]; Pedrosa, Cláudia[2]; Carvalho, Isabel[2]
[1]Centro Hospitalar do Tâmega e Sousa, Portugal; [2]Centro Hospitalar Vila Nova de Gaia/Espinho

Background: Sleep is fundamental in child development. Children with rhinitis and asthma have more frequent sleep disorders; however, these are not valued by physicians or parents compared to other asthma and allergic rhinitis symptoms. This study seeks to determine the impact of asthma/rhinitis and its control on sleep disorders.

Methods: During the study period (nine months), three questionnaires were applied to parents of children with asthma/rhinitis and children without allergic disease (control). The Children Sleep Habits Questionnaire (CSHQ) was used to assess sleep habits and identify specific sleep problems. The total nasal symptom score questionnaire (TNSS) was also used to evaluate the control of rhinitis symptoms, as well as the questionnaire to evaluate the control of asthma, adapted from the Global Strategy for Asthma Management and Prevention (GINA).

Results: We obtained 147 questionnaires from children between 2 and 10 years old, 14 children with asthma, 14 with rhinitis, 68 with both pathologies, and 51 controls. As for the comparative analysis of the total score, we found significantly higher total score values in the group with pathology. A statistically significant difference was observed in the subscores for parasomnia, sleep breathing disorders, and daytime sleepiness. Children with uncontrolled rhinitis had a statistically significant difference in the sleep duration and respiratory sleep disturbance subscores. For children with uncontrolled asthma, there was a statistically significant difference in the subscores for parasomnia and sleep-disordered breathing. We found that children with uncontrolled asthma and rhinitis showed a higher incidence of sleep disturbances. In this study, respiratory sleep disturbance (p=0,048) and sleep duration subscores (p=0,005) were significantly higher in patients with decompensated rhinitis. The presence of higher total CSHQ scores and higher parasomnias, sleep-disordered breathing, and daytime sleepiness subscores was demonstrated in children with uncontrolled asthma, suggesting that nocturnal symptoms impair sleep quality.

Conclusion: In the interpretation of analysis performed from our sample and considering that many children with asthma/rhinitis have sleep disorders undiagnosed, it is suggested to systematically screen for sleep disorders. With this study, the authors also intend to emphasize the need for a multidisciplinary approach to integrate behavioural and educational strategies in the control of asthma/rhinitis.

ID: 270
Oral Presentation
Topics: RARE DISEASES
Keywords: Developmental, Delay, Smith-Magenis, Disability, Sleep

Smith-Magenis: a rare disorder with sleep and developmental impact

Almeida, Andre Coelho[1,2]; Correia, Claudia[1]; Queiros, Joana[1]; Soares, Sara[1]; Gonzaga, Diana[1]; Mota, Céu[1]; Soares, Ana Rita[3]; Soares, Gabriela[2]; Pinho, Marta Rios[1]; Matos, Ines Vaz[1]; Prior, Catarina[1]
[1]Centro Materno-Infantil do Norte - CHPorto, Portugal; [2]Centro Hospitalar de Trás-Os-Montes e Alto Douro, Portugal; [3]Centro de Genética Médica Dr. Jacinto Magalhães - CHUPorto, Portugal

Background: Global developmental delay (GDD) and intellectual disability (ID) are conditions that should always be followed in neurodevelopmental consultations. The etiological diagnosis is a clinical challenge and is not always attained. Sometimes GDD or ID are part of a recognizable

genetic syndrome, which nevertheless may present a high phenotypic variability. We report three illustrative cases of the rare Smith-Magenis disorder.

Cases: We describe 1 male and 2 females, aged between 3 and 18 years old. All children presented GDD and facial dysmorphisms and were diagnosed in the first years of life. The youngest hypotonia was the referral cause, and language and sleep disturbances were major concerns in the three patients. All have hyperactivity and impulsive behaviour, and the older fulfil attention deficit hyperactivity disorder (ADHD) criteria. One patient has structural heart disease, another precocious puberty and constipation, and the oldest short stature, hypertriglyceridemia and obesity. All patients benefit from pharmacological and non-pharmacological therapies.

Discussion: Smith-Magenis syndrome is a rare genetic disorder (1/25 000 births) with autosomal dominant inheritance, mostly caused by a deletion in chromosome 17p11.2. Craniofacial dysmorphisms, skeletal anomalies, overweight, congenital cardiac and genitourinary defects, hoarse voice and deafness are common. None of our patients presented hearing impairment. From a neurodevelopmental perspective, the phenotype is variable concerning cognitive-behavioural disturbances. Sleep disorders with an altered circadian rhythm are paramount and should always be addressed. Follow-up and continuous multidisciplinary intervention according to the neurodevelopmental and behavioural individual profile are mandatory. Treatment of comorbidities is essential, as well as family psychosocial support.

ID: 346
Oral Presentation
Topics: ENDOCRINOLOGY
Keywords: Acidosis, Carbohydrates, Counting, Education, Diabetes

Hospital admissions in patients with type 1 diabetes mellitus, before and after 2011

Almeida, Andre Coelho[1]; Barros, Marta[2]; Batista, Rita[1]; Correia, Filipa[1]; Cândido, Cristina[1]; Martins, Vânia[1]
[1]Centro Hospitalar de Trás-Os-Montes e Alto Douro, Portugal; [2]Centro Hospitalar Vila Nova de Gaia-Espinho, Portugal

Background: Type 1 diabetes mellitus (DM1) is a chronic disease that can lead to multiple visits to health services and hospitalizations. Besides the revolution in treatment, with the development of insulin and infusion pumps, caregivers and patients have the main role in controlling the disease. One of the ways is through carbohydrate counting (CC).

Methods: Observational retrospective study with a descriptive and inferential analysis comparing admissions due to DM1 poor control or decompensation between 2001 and 2020. Children were distributed in two groups (G) according to the start date of the CC training at our institution – January 2011: G1 (10-year before), G2 (10-year after). We collected gender and age; duration, cause and provenience of hospitalization; symptoms and pH at admission; glucose control (HbA1C) at hospitalization and 6-month after discharge. Categorical variables were compared according to the chi-square test and continuous variables with the Mann-Whitney test. A p-value <0.05 was considered statistically significant.

Results: We included 60 patients, 17 in G1 and 43 in G2; 51.7% were male. In G1, 41.2% were male; 82.4% were older than 10 years. In the G2, 55.8% were male; 88.4% older than 10 years. A total of 118 admissions (39 in G1 and 79 in G2) were registered (median number per patient of 2), 60,2% came from the emergency department, and 39.8% from pediatric consultation (PC). There is a statistically significant difference between groups (p=0.003) in admissions from the PC (8 in G1, 39 in G2). Causes of admission were patient/family education (47.5%), acidosis (25.4%),

hyperglycemia (13.6%) and hypoglycemia (13.6%). A statistically significant difference was found, with an increase in admissions for disease education in G2 ($p<0.001$); a decrease in hypoglycemia ($p=0.008$) and acidosis ($p=0.022$). The most common symptom was vomiting. The mean hospital length of stay in both groups was 2 days. We found a statistically significant difference in length of stay in admissions to disease education. No relationship was found between HbA1C values and the number of admissions.

Conclusion: Although no decrease was found in the number of admissions after the introduction of CC, largely due to admissions for disease education, we observed a decrease in admissions related to poor glycemic control, namely due to hypoglycemia and acidosis. CC has a positive impact on metabolic control and quality of life.

ID: 220
Oral Presentation
Topics: GENERAL PEDIATRICS, INFECTIOUS DISEASES, DERMATOLOGY
Keywords: wetsuit, infection, dermatology, skin, folliculitis

A case report: Dermatological infection associated with communal wetsuit hire

McDonnell, Gemma; Murphy, Anne-Marie; Twomeny, John
University Hospital Limerick, Ireland

Background: The purpose of this paediatric case report is to investigate the association between dermatological infections and shared, hired wetsuits for water sport activities. A 13-year-old boy attended the emergency department with a 3/52 history of a bilateral, non- healing soft tissue infection on the extensor surfaces of his elbows.

Case Presentation: The patient had spent the previous weeks surfing in the west coast of Ireland using a communal wetsuit. The initial symptoms included intense pruritus affecting both elbows with a progressively worsening papular rash. Upon presentation, the lesions were pustular, centrally ulcerated, and erythematous with surrounding eschar. A papular rash spread proximally to the triceps regions, with additional lesions on his lower back. The patient was vitally stable, afebrile, and systemically well. There was no recent history of viral infection or any associated illness. No history of trauma, animal or insect bite and no sick contacts.

The infection worsened despite 2/52 treatment with antibiotics in primary care (1/52 PO Augmentin followed by 1/52 of PO Flucloxacillin). The patient was admitted, the lesions swabbed, and treatment began with IV Tazocin and IV Flucloxacillin, following a dermatological diagnosis of an impetiginized pseudomonas folliculitis.

Conclusion: This case looked at the possible association between communal-use wetsuits and dermatological infection; however, further data is needed to confirm the overall, long-term risk. Additionally, aiming to improve working practices in the water sports industry regarding sanitizing hired equipment may help to reduce any infection risk.

ID: 360
Oral Presentation
Topics: INFECTIOUS DISEASES, NEUROLOGY
Keywords: adenovirus, myelitis

A grey matter myelitis case report associated with adenovirus in an otherwise healthy child – An usual complication from a common virus

Almendra, Margarida[1]; Vieira, José Pedro[2]; Conceição, Carla[3]; Brito, Maria João[1]
[1]Infectious Diseases Department, Hospital Dona Estefânia, Centro Hospitalar Universitário Lisboa Central, EPE, Portugal; [2]Neurology Department, Hospital Dona Estefânia, Centro Hospitalar Universitário Lisboa Central, EPE, Portugal; [3]Radiology Department, Hospital Dona Estefânia, Centro Hospitalar Universitário Lisboa Central, Portugal

Background: Predominantly grey matter involvement in longitudinal extensive spinal cord lesion is an acute predictor of either progressive presentation of common autoimmune disorders or insufficiently acknowledged entities such as paraneoplastic syndromes and peri-infectious acute flaccid myelitis. Environmental toxins and genetic disorders may be involved in the manifestation of this disease.

Case Presentation: A previously healthy, 11-month-year-old girl was admitted with rapidly progressive arreflexic tetraparesis and worsening respiratory distress. Two days earlier, she had symptoms of upper respiratory illness and high fever, and on the previous day before admission, she refused to walk and showed upper right arm paresis. Cerebrospinal fluid examination showed a normal cell count with elevated protein (75mg/dL). Neurotropic virus by multiplex-PCR was negative, and immunoelectrophoresis revealed moderated blood-brain barrier disruption without intrathecal IgG production. Magnetic resonance imaging (MRI) showed longitudinally extensive homogeneous medullar lesion from D8 level to the medulla oblongata with signal alteration mainly localized in the central grey matter. Adenovirus was identified in respiratory secretions by quantitative multiplex-PCR testing. Anti-aquaporin 4 (AQP-4) antibodies, anti-myelin oligodendrocyte glycoprotein (MOG) antibodies, and anti-N-methyl D-aspartate (NMDA) receptor (anti- NMDAR) antibodies were all negative. She was treated with ceftriaxone, ciprofloxacin, acyclovir, cidofovir and fluoxetine. Two weeks later, MRI showed new lesions in the frontal and parietal left cortex consistent with encephalitis. Due to this clinical severity, intravenous immunoglobulin, pulses of methylprednisolone and plasmapheresis were administered. She was on mechanical ventilation for 20 days and required parenteral nutrition due to malnutrition. She started on intense rehabilitation with physical and occupational therapy with some improvement, and her condition evolved to asymmetric spastic tetraparesis with a mainly upper right arm and lower limbs involvement. HIV and primary immunodeficiency diseases were excluded.

Learning Points Discussion: Grey matter spinal cord lesion is a rare phenomenon and presents a diagnostic challenge in paediatrics where infectious aetiologies should be considered. Adenovirus can directly invade the anterior horn cells of the spinal cord, it has been reported neurological complications including aseptic meningitis, encephalopathy, encephalitis and myelitis. Regarding this potentially devastating condition with variable outcomes, aggressive immunomodulatory treatment should be maximized early in the disease course, where time is of the essence.

ID: 323
Oral Presentation
Topics: INFECTIOUS DISEASES
Keywords: back pain, limp, pyomyositis, children, MRI

Acute pyomyositis of the pelvis: the spectrum of clinical presentation and MRI findings in an Italian paediatric cohort

Trapani, Sandra[1]; Abbati, Giulia[1]; Rumeileh, Sarah[1]; Indolfi, Giuseppe[2]; Perrone, Anna[3]; Galli, Luisa[1]
[1]Department of Sciences of Health, Meyer Children's Hospital, Italy; [2]Department of NEUROFARBA, Meyer Children's Hospital, Italy; [3]Radiology Unit, Meyer Children's Hospital, Italy

Background: Pyomyositis is an infrequent bacterial infection of skeletal muscle, characterized by muscular abscesses and possible complications leading to a severe and even life-threatening

outcome. Muscles of the pelvis and thigh are more frequently involved. The diagnosis is often challenging, especially when a deep muscle is affected, because of unspecific clinical and laboratory findings and low suspicion by clinicians. Radiological investigations are fundamental, being MRI is the technique of choice.

Methods: We conducted a retrospective cohort study of children discharged with the diagnosis of pelvic pyomyositis from Meyer Children's University Hospital between January 2005 and December 2020. Demographic, anamnestic, clinical, laboratory, radiological data, treatment, and outcome were collected; a pediatric radiologist revised MRI images.

Results: Forty-six patients were selected, male to female ratio 2:1, mean age 7.31 years (range one week-16 years). The most common presenting signs/symptoms were severe pain (63%), inability to weight bear and/or limitation (39%), and fever (37%). Five patients (10.9%) developed sepsis. The mean duration from admission to the diagnosis was 4 days (IQR: 2-8). A causative bacterial source was identified in 19 cases (41.3%): by positive cultures from blood (n=13) or purulent material (n=4), whereas PCR on drainage tissue was diagnostic in 5 children and on blood in 4. The most common (63%) isolated organism was Staphylococcus aureus, with only one MRSA. The musculoskeletal US, performed in 15 patients (32%), showed structural alterations of muscle bundles or anechoic/hypoechoic formations in 11 cases. A pelvic MRI, performed in 44 children, revealed abnormalities in all the cases: the affected muscles mostly appeared hyperintense (n=34) on T2-weighted images, and isointense (n=23) or hyperintense (n=15) on T1-weighted images, with post-contrast enhancement. Nine patients (19.6%) presented isolated pyomyositis; in contrast, 37 patients (80.4%) had concomitant osteomyelitis (n=8), arthritis (n=6) or both (n=23). Obturator externus was the most affected muscle (63%), and 40 children (87%) had a multifocal infection. Muscular abscesses were identified in 20 patients (43.5%), and 8 of them had multiple abscesses. All patients received antibiotics, and eight patients (17.4%) even underwent abscess drainage. The median duration of hospital stay was 9 days (IQR 16-26.5). In one patient following surgery with severe tissue necrosis, a skin graft was required. Nineteen patients (41.3%) still complained of symptoms at the time of discharge, but no patient presented symptoms/signs at the outcome follow-up, performed one month later. In our cohort, no cases developed infectious or musculoskeletal sequelae.

Conclusions: Paediatricians should suspect pyomyositis in a febrile child with severe low back pain, inability to weight bear and/or hip limitation. MR is the preferred imaging modality for evaluating foci of pyomyositis, muscle abscesses, and additional foci of infection within the pelvis.

ID: 180

Oral Presentation

Topics: INFECTIOUS DISEASES, NEONATOLOGY

Keywords: antenatal inflammation, infection, ureaplasma, detection, duration, volatile organic compounds

Detection of volatile organic compounds as potential novel biomarkers for chorioamnionitis – Proof of experimental model

Goedicke-Fritz, Sybelle[1,2]; Werner, Thomas[2]; Niemarkt, Hendrik J.[3]; Wolfs, Tim G. A. M.[4]; Baumbach, Jörg Ingo[5]; Kemp, Matthew W.[6]; Jobe, Alan H.[4]; Rogosch, Tobias[2]; Bous, Michelle[1]; Kaiser, Elisabeth[1]; Stutz, Regine[1]; Meyer, Sascha[1]; Maier, Rolf Felix[2]; Koczulla, Andreas Rembert[7]; Spiller, Owen B.[6,8]; Kramer, Boris W.[4,6]; Zemlin, Michael[1]

[1]Department of General Paediatrics and Neonatology, Saarland University Medical School, Homburg, Germany; [2]Children's Hospital, Philipps University, Marburg, Germany; [3]Department of Neonatology, Máxima Medical Centre, Veldhoven, Netherlands; [4]Department of Pediatrics, School of Oncology and Developmental Biology, Maastricht University, Maastricht, Netherlands; [5]Center of

Competence Breath Analysis, Branch Dortmund, B. Braun Melsungen AG, Melsungen, Germany; [6]Division of Obstetrics and Gynecology, School of Women's and Infants' Health, University of Western Australia, Crawley, WA, Australia; [7]Department of Pulmonology, German Center of Lung Research DZL, Institute for Internal Medicine, Philipps-University of Marburg, Marburg, Germany; [8]Department of Microbiology, School of Medicine, Cardiff University, Cardiff, United Kingdom

Background: Chorioamnionitis is one of the leading causes of preterm delivery associated with high mortality and morbidity. Unfortunately, it can only be reliably confirmed postnatally by histopathology. To push up the diagnostic process, we wanted to investigate whether volatile organic compounds (VOCs) can be helpful and suitable as biomarkers for chorioamnionitis.

Methods: Ewes received intraamniotic injections of media or saline (controls) or living Ureaplasma parvum 14, 7 and 3 days prior to delivery. Recombinant interleukin-1α (IL-1α) was administered at 7, 3 and 1 day prior to delivery. Using ion mobility spectrometry coupled to multicapillary columns, we conducted headspace measurements of amniotic fluid at birth.

Results: We identified 127 VOCs peaks; 27 peaks differed between controls and induced chorioamnionitis. We found 2-methylpentane as the most promising volatile biomarker for detecting Ureaplasma parvum compared to IL-1α induced amnionitis. The peak progression reaching a sensitivity/ specificity of 96% / 95% and a positive predictive value/ negative predictive value of 96% / 95%.

Conclusions: We established a novel method to analyze VOCs profiles in amniotic fluid. Using ion mobility spectrometry coupled to multicapillary columns (MCC/IMS), we demonstrated that VOCs profiles could be a useful tool to distinguish between amnionitis of different origins (Ureaplasma parvum versus IL-1α induced amnionitis) and its progression. 2-methylpentane in exhaled air was associated with pre-eclampsia in previous studies; it might also represent a novel biomarker for inflammatory processes during pregnancy. The results represent an innovative and promising approach to non-invasive diagnostic in perinatology and could enable a quick and precise diagnosis of chorioamnionitis in the future.

ID: 354
Oral Presentation
Topics: INFECTIOUS DISEASES
Keywords: Osteomyelitis; Staphyloccocus aureus; Portugal

Osteomyelitis in the Pediatric Population – A glimpse of the Portuguese reality

Ribeiro, Marta[1]; Rodrigues, Ana Barbosa[1]; Zarcos, Maria Manuel[3]; Araújo, Ana Daniela[4]; Pedro, Mariana[5]; Romana, Andreia[6]; Melo, Joana Vieira[7]; Grilo, Ricardo Domingos[8]; Costa, Adriana[9]; Braz, Monica[10]; Vieira, Clara[11]; Almeida, Sara Isabel[12]; Lopes, Graça[2]; Marques, José Gonçalo[1]
[1]Departamento de Pediatria, Hospital de Santa Maria - Centro Hospitalar Universitário Lisboa Norte, Portugal; [2]Serviço de Ortopedia, Hospital de Santa Maria - Centro Hospitalar Universitário Lisboa Norte, Portugal; [3]Serviço de Pediatria, Centro Hospitalar de Leiria; [4]Serviço de Pediatria, Hospital de Braga; [5]Serviço de Pediatria, Centro Hospitalar do Oeste; [6]Serviço de Pediatria, Hospital Garcia de Orta; [7]ULSBA; [8]Serviço de Pediatria, Hospital do Espírito Santo de Évora; [9]Serviço de Pediatria, Hospital Fernando Fonseca; [10]Serviço de Pediatria, Hospital CUF Descobertas; [11]Serviço de Pediatria, Centro Hospitalar do Médio Ave; [12]Serviço de Pediatria, Hospital Beatriz Ângelo

Background: Osteomyelitis in children remains a relatively common condition and presents unique challenges in diagnosis and management. A better understanding of past approaches may help identify areas of potential improvement.

Methods: Observational retrospective study on the therapeutic approach and outcome of children treated for osteomyelitis in Portugal. The clinical files from 149 children diagnosed between 2010 and 2019 across Portugal (11 hospitals were included) were analyzed and data collected. Statistical analysis was performed using IBM SPSS StatisticsTM.

Results: Sample: 64,4% males; 43%> 10 years of age, 29% 3-10 years and 28% < 3 years (neonates not included); 14% of patients were foreigner (Africa, Brazil, Eastern Europe and Germany). Ninety-two per cent were previously healthy, 7% had sickle cell disease, and <2% were immunocompromised. The most frequent agent in all age groups was Staphyloccocus aureus. In children > 3 years, it was responsible for more than 60% of the cases of osteomyelitis; in the age group < 3 years, it only represented one-third of the cases. Other frequent agents in children with 3-36 months were: Streptococcus pneumonia (19%), Streptococcus pyogenes (16%), Kingella kingae (13%). Streptococcus agalactiae caused 29% of the cases in babies between 1-2 months. Septic arthritis was a comorbidity in 41%, septicemia in 7% and thrombosis in 2,7%. Hematogenous dissemination was documented in 67,7%, and 32,7% of these underwent surgery. Over 97% of children were started on appropriate first-line antibiotics. There was no correlation between surgery and outcome in this group (Pearson Chi-Square, p0,364). Recovery without sequelae was observed in 70% of Portuguese children and 38% of foreign children (Pearson Chi-Square, p<0,01). Age also seemed to correlate with prognosis: children with 3-10 years had more sequels than their younger or older peers (Pearson Chi-Square, p<0,01, adjusted residue analysis).

Conclusions: Our analysis showed that the pediatric population with osteomyelitis in Portugal presents similar epidemiologic characteristics to those described in the literature: males are more affected than females, S.aureus is the main etiologic agent, with a predominant role after 3 years of age. Though currently Pediatric Infectious Diseases Society recommends collecting aspirates or biopsy specimens to improve microbiological diagnosis when hematogenic osteomyelitis is suspected, our study did not show any statistically significant difference between invasive and non-invasive diagnostic approaches and the outcome. The worse outcome in children with 3-10 years, in our study, could have various possible explanations such as delay in the diagnosis or the referral for specialized care. Further studies are required to understand this association better.

Limitations: This study has several limitations, namely those associated with it being a retrospective observational study that focused on patient records from the past decade. Patients with osteomyelitis with no etiological agent identified were not included.

ID: 171
Oral Presentation
Topics: INFECTIOUS DISEASES, ALLERGY, IMMUNOLOGY & RESPIRATORY, COVID-19
Keywords: Respiratory, COVID-19, RSV, Virology, Admissions

Respiratory admissions during COVID-19 pandemic restrictions – a single centre experience

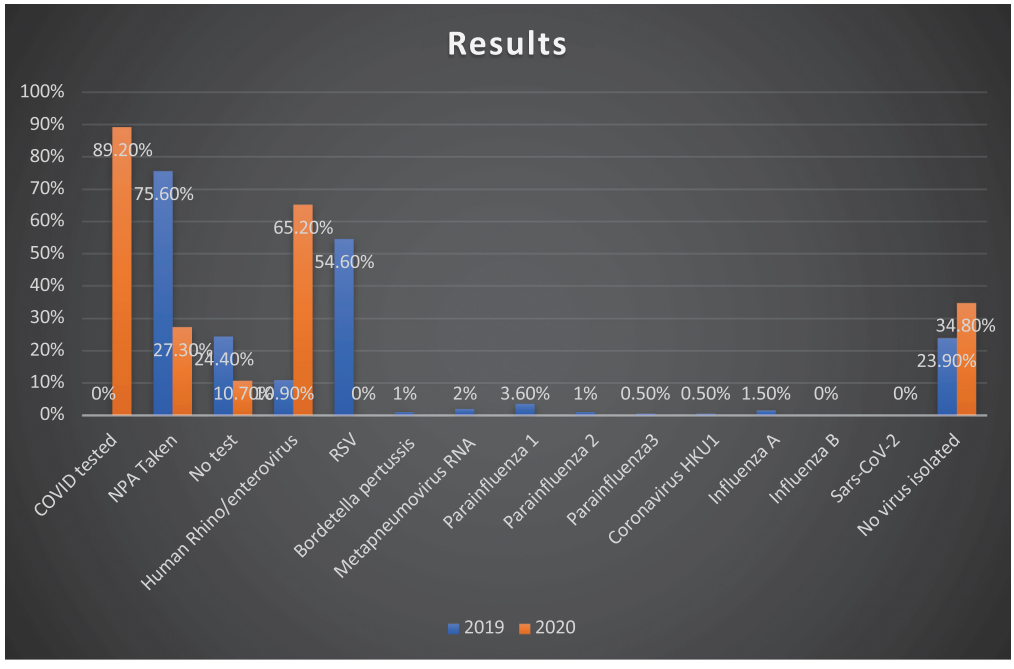
Coyle, Natalie; Guinness, Freya; Fitzsimons, John
CHI at Temple Street Ireland, Ireland

Introduction: Respiratory tract diseases are a major cause of morbidity and mortality in children. This study aimed to compare respiratory illness rates and aetiology requiring hospitalization in 2019 (pre-COVID lockdown in Ireland) and 2020 (during COVID lockdown in Ireland).

Methodology: Data from medical admissions were retrospectively collected from the emergency department admissions record of a Tertiary Paediatric Hospital in Dublin, Ireland. This study focused on September, October and November in 2019 and 2020. The documented reason for admission in each case was noted; these were transcribed and grouped into categories. Reasons

for admission under the category of respiratory included: bronchiolitis, lower respiratory tract infection, upper respiratory tract infection, wheeze, stridor and exacerbation of asthma. Rates of admission in this category were compared from 2019 versus 2020. Rates of investigative naso-pharyngeal swabs for these admissions were documented, as well as the resultant viruses isolated. The results were compared across 2019 and 2020.

Results: 1040 admission were included in the study. Of these, 620 were in 2019 and 420 in 2020. This alone shows a decrease of 32% in the admissions rate to Temple Street Children's hospital during COVID-19 restrictions. Of the 620 admissions across September, October and November 2019, 265 were attributed to respiratory illnesses (42.77%). In the same time period of 2020, only 67 admissions were attributed to respiratory causes (15.95%). This shows a dramatic decrease in the number of paediatric respiratory illnesses requiring hospital admission. There was a decrease in the number of respiratory panel nasopharyngeal swabs taken in 2020 compared to 2019, although 89% of respiratory admissions were swabbed for Sars-CoV-2 in 2020. Respiratory syncytial virus accounted for 54.60% of respiratory admissions swabbed in 2019 versus a 0% isolation rate in 2020. The table below further outlines virology differences between 2019 and 2020. (table)



Conclusion: SARS-CoV-2 pandemic related social restrictions dramatically interfered with the seasonality of childhood respiratory illnesses. This was reflected in the unexpected reduction in the number of hospitalizations in the paediatric population during this period. There is also an obvious stark contrast in the viruses isolated in children presenting with respiratory illnesses in 2019 and 2020. This study raises serious questions and concerns regarding paediatric immunity to respiratory illnesses and begs the question: will we experience a more severe respiratory season in 2021?

ID: 215
Oral Presentation
Topics: GENERAL PEDIATRICS, PUBLIC HEALTH, COVID-19
Keywords: COVID-19, health, pupils, students

Child and adolescent health under the COVID-19-related regulations and restrictions (preliminary data)

Pagava, Karaman; Korinteli, Irma; Phagava, Helen
Tbilisi State Medical University, Georgia

Background: New coronavirus infection is the biggest challenge for the entire world. Maintaining social distance, online education and other safety measures are important to stop the spread of the virus. Therefore, different regulations and restrictions were imposed in the countries. Our study aimed to assess child and adolescent health under the COVID-19-related regulations and restrictions.

Methods: The cross-sectional study design was used. The sample consisted of 67 students and 104 public school pupils' parents selected by snowball sampling. An anonymous questionnaire was used, which contained 14 questions.

Results: 45.6% of students and 57.5% of pupils' parents believe that imposed administrative and educational restrictions significantly impact children and adolescents' health. Both positive and negative effects were noted by 45.1% and only negative effects by 22.4% of the parents. The same tendency was detected in the students. According to the survey, during the pandemic, the pupils had a decrease of the skin and soft tissue (22.1%), cardiovascular (17.3%), respiratory (16.3%) and digestive system (10.5%) disease symptoms. At the same time, there was an increase of the psychosomatic (22.7%), bone and joint (20.1%), endocrine (18.2%) system disease symptoms. In contrast with the pupils, the students noted a decrease in the digestive (24.3%), respiratory (19.4%) and endocrine (10.2%) system symptoms and an increase of the sight organs (16.4%) symptoms. Manifested disease in 37.8% of pupils was moderate and required the intervention of the doctor. In 41.4% of the students, the symptoms were mild. There were noted significant negative effects on the psycho-emotional system (53.6% pupils and 63.5% students). 42.6% of the pupils' parents believe that their children became more aggressive, pretentious, overly emotional and quarrelsome. The same tendency was detected in the students. 44.2% of the pupils and 37.5% of the students decreased daily physical activity. 77.2% of the pupils and 73.8% of the students stated increased screen time. 11.6% of the pupils and 8.4% of the students admitted the existence of chronic diseases. Throughout the pandemic regulations, 37.3% of the pupils and 47.1% of the students have noted some deterioration of the course of these diseases.

Conclusions: COVID-19 related regulations and restrictions have both positive and negative effects on child and adolescent health. Decreased cardiovascular, respiratory, digestive and skin disorders, but increased symptoms of psychosomatic, endocrine, bone, joints, and sight organs. Sometimes these negative effects necessitate doctors' intervention and present increased workload on the healthcare system. Therefore, it is necessary to develop complex measures to avoid negative impacts on health.

ID: 159
Oral Presentation
Topics: GENERAL PEDIATRICS, COVID-19
Keywords: e-learning, education, online, paediatrics, systematic review

E-learning in paediatrics: lessons learned – COVID-19 and beyond

Power, Edmond Michael[1]; Finn, Bryan[1]; Delaunois, Isabelle[2]; Neville, Siobhán[1,3]; Murphy, Anne-Marie[1,3]; O'Gorman, Clodagh[1,3]
[1]Dept of Paediatrics, The Children's Ark, University Hospital Limerick, Ireland; [2]Regional Medical Library, University Hospital Limerick, Ireland; [3]Dept of Paediatrics, School of Medicine, University of Limerick, Ireland

Background and Objective: Paediatric education at the undergraduate and postgraduate levels has been transformed during the COVID-19 epidemic. As a new generation of paediatric trainees found themselves unable to experience common conditions, e.g., bronchiolitis, on the ward, a meaningful shift took place from in-person learning to an online curriculum. Online learning tools ranging from the well-known 'Don't Forget the Bubbles' to recognised qualifications online saw a surge in popularity. Despite a plethora of research from our adult medicine colleagues exploring the barriers and enablers to online education, there is a relative paucity of specific literature exploring the paediatric situation.

Aim: We aimed to conduct a systematic review of e-learning in paediatrics and subsequently identify what makes the paediatric online learning experience unique. Our objectives were to identify the key themes relevant to paediatric online learning, to identify any studies exploring the transformed landscape during COVID-19, including the use of applications such as Zoom, podcasts, etc., and ultimately, ascertain key learning points to facilitate further improvements in online learning.

Methods: A systematic literature review was conducted on "e-learning in paediatrics" and its relevant nomenclature searching within the following databases: Embase (Ovid), Medline (EBSCO), Cochrane (Central database), Eric (Ebsco), Thesis Proquest, Trial registers and Web of Science (KJD, RCSI, SCIELO, WOS). A total of 886 studies were found after deduplication was completed. To identify the full papers that were included in the review, two reviewers in isolation screened the initial results using the Rayyan systematic review tool and applied inclusion and exclusion criteria to each abstract. Any disagreements between reviewers were resolved with a third reviewer and the final papers chosen. Themes were identified, and a narrative description of the results explores the key findings.

Learning points: E-learning is now accepted as an integral part of medical education due to the disruption caused to in-person learning by the COVID-19 pandemic. While an abundance of online resources is available to paediatric trainees, more content and resource creation are needed to ensure that e-learning can more closely mimic in-person teaching. Conferences and Journal Clubs moving to an online format was one of the major benefits of COVID-19, allowing an unprecedented amount of international collaboration and learning. While education slowly returns to a face-to-face format, it is imperative that we continue to expand our e-learning curriculum.

ID: 309
Oral Presentation
Topics: NUTRITION & DIETS, RHEUMATOLOGY
Keywords: limp, hemorrhage, irritability, autism, scurvy, MRI

Pediatric scurvy - an old disease becomes a new problem: a retrospective case series in a tertiary Italian Children's Hospital

Trapani, Sandra; Rubino, Chiara; Brizzi, Ilaria; Indolfi, Giuseppe
Meyer Children's Hospital, Florence, Italy

Background: Vitamin C functions as a cofactor and antioxidant that enables tissue growth and repair within the human body, but humans cannot synthesize it. Scurvy is a clinical syndrome

caused by vitamin C deficiency. It has been increasingly reported in children in recent years, especially in those with mental illnesses or physical disabilities.

Methods: We retrospectively reviewed the medical records of children discharged with the diagnosis of scurvy from the Pediatrics Department of Meyer Children's University Hospital in Florence over 6 years (2016- 2021).

Results: Seven children were selected; 7 males and one female, aged between 18 months to 12 years (mean age 5.2). Four had comorbidities (two autism spectrum disorders, one with severe neurodevelopmental delay, and one with cerebral palsy). They were all admitted for lower limb pain, limping, or refusal to walk or stand up; 3 of them also had gingival hypertrophy. During hospitalization, 7 presented mucocutaneous bleedings, in particular gingival haemorrhages in 6 cases, ecchymoses and petechiae in one. Moreover, marked irritability was referred in half of this cohort. All the children had a selective diet, mainly based on carbohydrates, but only three had a poor nutritional status. Laboratory exams showed elevated ESR in 7 cases, CRP in 3 cases and anaemia in all the children out of one. Other vitamins deficiencies were recorded in 7 cases; in particular, Vitamin D was insufficient in 5 cases, and folic acid was low in 2. Differential diagnosis was challenging, and the children underwent several investigations before the final diagnosis. The initial diagnosis was of infectious disease (osteomyelitis in 3 cases, septic arthritis in one) and neoplasia in the other 2 cases; only in 2 children, scurvy was the first suspected disease. Imaging studies (X-ray, MRI) showed typical alterations (focal or diffuse marrow signal abnormalities and enhancement), sometimes upon the second review. Deficient levels of serum vitamin C and resolution of symptoms after ascorbic acid treatment confirmed the diagnosis of scurvy. The mean interval between clinical onset and diagnosis was 48 days (range 10-244 days). Of note, the interval time reduced after we diagnosed the first case.

Conclusions: Scurvy should be considered in all children with musculoskeletal complaints and hemorrhagic lesions. Healthy children with oral aversion and those with neurodevelopmental disease represent groups at higher risk for developing scurvy. Since it can mimic various severe conditions, a high index of suspicion is required when a paediatrician evaluate a child with limp and mucocutaneous bleedings. Imaging studies of bone can reveal the typical skeletal features if done by expert radiologists.

ID: 306
Oral Presentation
Topics: PUBLIC HEALTH
Keywords: Recurrent pain, psychosomatic symptoms, adolescents, bullying, SES, OSC

Recurrent headache, abdominal pain, and spinal pain among adolescents by exposure to bullying and socioeconomic status

Madsen, Klara Merrild; Holstein, Bjørn E.; Madsen, Katrine Rich
National Institute of Public Health, Denmark

Background: Recurrent psychosomatic symptoms are a severe public health problem among 11–15-year-olds, and it is associated with a range of additional negative health outcomes. Exposure to bullying and low socioeconomic background are important risk factors for recurrent pain. This study aimed to 1) examine how exposure to bullying and occupational social class (OSC) is associated with recurrent headache, abdominal pain, and spinal pain among adolescents and 2) whether adolescents' OSC modifies the association between bullying and pain.

Methods: Data derived from the Danish contribution to the WHO international collaborative study Health Behaviour in School-aged Children (HBSC). Data were accumulated from a standardized

questionnaire developed for 11-, 13- and 15-year-olds. The study population was selected from national random samples of schools in 2010, 2014 and 2018, n=10,738. We used logistic regression analyses to examine 1) the association between bullying, OSC and pain and 2) if OSC modified the association between exposure to bullying and recurrent pain, defined as pain several days per week.

Results: The prevalence of pain was high: 11.7% of the participants reported recurrent headache, 6.1% recurrent abdominal pain, 12.1% recurrent spinal pain, and 9.8% of the students reported at least one of these kinds of recurrent pain almost every day. Exposure to bullying and low OSC were significant risk factors for recurrent pain. Bullied students from low OSC suffered the gravest consequences, adjusted OR (AOR, 95% CI) for headache was 2.69 (1.75-4.10), abdominal pain AOR=5.80 (3.69-9.12), recurrent back pain AOR=3.79 (2.58-5.55), and any recurrent pain AOR=4.81 (3.25-7.11). Analyses were adjusted for sex, age group and survey year.

Conclusion: Across three stratified occupational social classes, the extent of recurrent pain increased with amplified exposure to bullying. Students with high exposure to bullying and low OSC had the highest OR for the four indicators of recurrent pain. Double exposure has a severe impact on the prevalence of adolescents experiencing recurrent psychosomatic symptoms. However, OSC did not appear to modify bullying's effect on recurrent psychosomatic symptoms.

ID: 200

Oral Presentation

Topics: RARE DISEASES

Keywords: #Glycogen storage disease #Recurrent hypoglycemia #Neutropenia #Hepatomegaly

"More than a Doll Face"

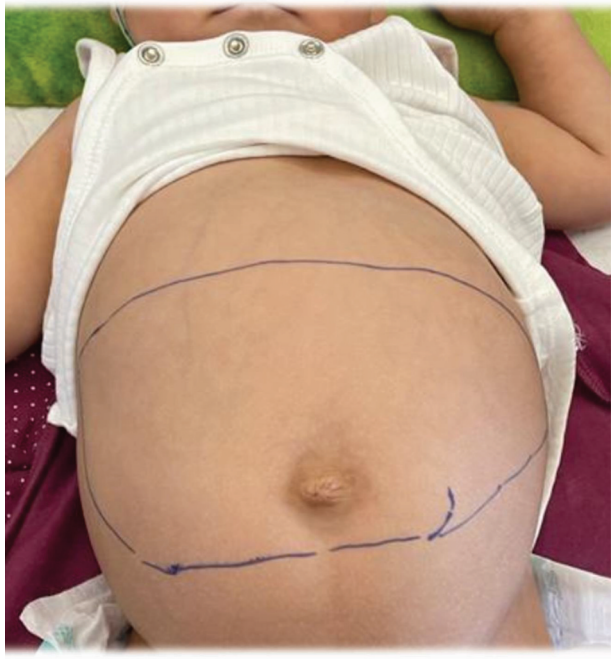
Ribeiro, Marta[1]; Estevens, Maria[2]; Pinto, Patrícia[1]; Janeiro, Patrícia[1]; Guerreiro, Nancy[3]; Vilarinho, Laura[4]; Rocha, Hugo[4]; Gaspar, Ana[1]

[1]Hospital de Santa Maria - Centro Hospitalar Universitário Lisboa Norte, Portugal; [2]Hospital de Santa Cruz - Centro Hospitalar Lisboa Ocidental; [3]Hospital do Barlavento Algarvio - Centro Hospitalar do Algarve; [4]Unidade de Rastreio Neonatal, Metabolismo e Genética Humana - INSA, Porto

Background: Glycogen storage disease type IB (GSD IB) is a metabolic disorder due to a deficiency in the microsomal transport proteins for glucose-6-phosphate, leading to the excessive accumulation of glycogen and fat in organs and neutrophil dysfunction. It is important that physicians consider this diagnosis since implementing a treatment regimen can change its prognosis.

Case Presentation: A 15-month-old girl was taken to her local hospital with increased abdominal perimeter and self-limited episodes of sweating and pallor, predominantly at night. From her background, poor growth progression and feeding difficulties stood out, with the maintenance of exclusive breastfeeding up to 12 months of age (frequent feeds). Psychomotor development was adequate. On physical examination, she presented a round face with fat cheeks (doll-like), significant abdominal distension conditioned by hepatomegaly, and atrophy of peripheral muscle masses. She was admitted for investigation. The hospitalization was uneventful; she kept her usual feeding habits. Laboratory tests revealed neutropenia (700/µL) in the presence of stimulated lymphocytes; hypertriglyceridemia 8.6mmol/L; hyperuricemia 476 µmol/L; metabolic acidemia; hyperlactatemia; elevated aminotransferases, alkaline phosphatase and GGT, with preserved biosynthetic liver capacity. Abdominal ultrasound confirmed hepatomegaly (left lobe: 82 mm, right lobe: 138 mm) and found nephromegaly (right kidney: 83mm/54ml, left kidney: 82mm/57ml); spleen was normodimensional. Due to a suspected metabolic disease, she was transferred to a tertiary hospital. She started regular blood glucose monitoring, and multiple episodes of severe

hypoglycemia (<1 mmol/L) were identified. Clinical and laboratory findings were suggestive of a GSD. She was started on a dietary regimen with restriction of simple sugars and fat, supplementation with glucose polymer and continuous nocturnal intragastric feeding, with a progressive decrease in hepatomegaly and improvement of laboratory abnormalities, except for the neutropenia. A genetic study was performed, which showed two compound heterozygous mutations p.val236del (c.706_708delGTG) and p.Arg300His (c.899G>A) in the SLC37A4 gene, associated with type Ib/Ic glycogenosis, with autosomal recessive inheritance (Figure).



Discussion: This case highlights the importance of an adequate anamnesis and interpretation of the symptoms reported by the parents. Recurrent hypoglycemia with adequate ketogenesis can be well-tolerated, manifesting itself only by adrenergic symptoms (sweating and pallor). Even though the differential diagnosis of hepatomegaly is extensive, the combination of hepatomegaly and recurrent hypoglycemia should always be a warning sign for metabolic disorders. It is especially important to consider metabolic disorders, such as GSD type Ib. An appropriate treatment regimen and multidisciplinary follow-up can significantly improve life expectancy and/or morbidity by preventing and treating infections in these neutropenic patients.

ID: 361

Oral Presentation

Topics: INFECTIOUS DISEASES, RHEUMATOLOGY, COVID-19

Keywords: COVID-19, JIA, SARS-CoV-2

The impact of asymptomatic SARS-CoV-2 infection in children with pediatric inflammatory diseases on selected clinical and laboratory parameters.

Morawska, Izabela[1]; Grywalska, Ewelina[2]; Roliński, Jacek[2]; Korona-Głowniak, Izabela[3]; Opoka-Winiarska, Violetta[4]

[1]Student Research Group at the Department of Paediatric Pulmonology and Rheumatology, Medical University of Lublin, Poland; [2]Department of Clinical Immunology, Medical University of Lublin, Poland; [3]Department of Pharmaceutical Microbiology, Medical University of Lublin, Poland; [4]Department of Paediatric Pulmonology and Rheumatology, Medical University of Lublin, Poland

Background: Juvenile idiopathic arthritis (JIA) is a rheumatic disease with an undetermined etiology, diagnosed in children before 16 years of age. Viral infections likely influence the development of the disease and its activity. The SARS-CoV-2 virus pandemic led scientists to ask whether children with JIA are at risk of developing COVID-19 and whether this infection may affect the course of the underlying disease? The study aimed to assess the serological status of patients with JIA and to correlate these results with disease activity, treatment method, and PD-1 serum concentration.

Methods: The study involved 65 children diagnosed with JIA and 31 healthy controls (HC) with a similar age distribution. The study was conducted during the peak of incidence of COVID-19 in Poland (01/10 - 05/30/2021). None of the children tested had symptoms of COVID-19 previously to the study. The examination was performed during the routine visits to the University Children's Hospital in Lublin, blood samples were collected for further procedures, and disease activity was determined according to the JADAS-71 scale. The level of anti-SARS-CoV-2 antibodies in IgA and IgG classes and the PD-1 serum concentration was determined using the ELISA method. Statistical analysis was performed using the Statistica 12 program.

Results: The prevalence of anti-SARS-CoV-2 antibodies in the IgA class was significantly ($p = 0.016$) higher in the group of children diagnosed with JIA (29.2%) compared to the healthy control (6.5%). There were no statistical differences in the JADAS-71 scale between the seropositive and seronegative groups of patients; however, the active joint number was significantly higher in the group of children anti-SARS-CoV-2 IgG positive compared to the IgG negative ones (4.5 vs 1.0; $p=0.049$). No differences in ESR or CRP levels were observed. Statistically, most IgA-positive patients were treated with sulfasalazine, and the IgG-positive children were mostly treated with chloroquine, compared to the SARS-CoV-2 seronegative JIA patients. In the group of children with JIA as well as in HC, statistically higher concentrations of serum PD-1 were observed in the SARS-CoV-2 IgA and IgG positive patients compared to the seronegative ones.

Conclusions: Obtained results indicate that children with JIA more often than healthy children may develop asymptomatic SARS-CoV- 2 infection (defined as IgA positivity without symptoms and signs of COVID-19). Additionally, the impact of COVID-19 on the immune balance manifests as the disturbances in PD-1 serum concentration level. The data on the impact of COVID-19 on disease activity is inconclusive. Further research is necessary.

ID: 174
Oral Presentation
Topics: NEONATOLOGY
Keywords: Neonatal neutropenia, Infectious risk, Neonatal intensive care unit

(Very) Severe neonatal neutropenia - a case report

Pereira-Nunes, Joana[1]; Fontoura-Matias, José[1]; Soares, Paulo[2]; Pissarra, Susana[2]; Soares, Henrique[2,3]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal; [2]Department of Neonatology, Centro Hospitalar Universitário de São João, Porto, Portugal; [3]Department of Gynecology-Obstetrics and Pediatrics, Faculty of Medicine of Porto University, Porto, Portugal

Background: The neutropenia constitutes a common entity during the neonatal period, being its assessment a true clinical challenge. Despite its multiple etiologies, most cases are often benign and transient. Monitoring its evolution is essential for the establishment of its final diagnosis.

Case Presentation Summary: Preterm male neonate (35 weeks and 2 days of gestation) who, due to infectious risk (spontaneous preterm and prolonged rupture of the membranes and unknown Group B Streptococcus status with complete intrapartum prophylaxis - 7 doses of antepartum ampicillin), underwent a complete blood count at 8 hours of life, which revealed an absolute neutrophilic count of 0/uL. The value was confirmed in a peripheral blood smear. Mild thrombocytopenia of 111 000/uL was also associated. The C- reactive protein (CRP) was negative. The pregnancy was adequately monitored, and there was a maternal history of Type I Diabetes Mellitus and hypothyroidism. The mother had no personal history of hypertensive disease. The patient was delivered by a vacuum delivery, his Apgar score was 8/9/10 at 1st, 5th and 10th minutes, respectively, and his birth weight was 3315g. His physical examination was unremarkable. A second complete blood count was performed, confirming the absolute neutrophilic count. The patient was placed in isolation, and intravenous ampicillin and gentamicin were empirically initiated. He remained asymptomatic, with prolonged maintenance of isolated severe neutropenia (maximum absolute count of 110/uL). The immature/mature neutrophil ratio was not calculated for technical reasons. Serial CRPs and blood cultures were all negative. The urinary cytomegalovirus PCR was negative. The maternal blood count excluded the presence of neutropenia, and anti-neutrophil antibodies were negative. A bone marrow failure syndrome panel was also performed and was normal. On his 19th day of life, the patient presented a spontaneous recovery of the neutrophilic count to 4920/uL, which was confirmed by a second complete blood count and peripheral blood smear. Due to the benign evolution, he was discharged with a probable diagnosis of benign neonatal neutropenia, possibly associated with exposure to beta-lactam antibiotics in the peripartum period.

Learning Points Discussion: This neutropenia clinical case stands out for the complexity of its etiological diagnosis. Despite the precocious and alarming presentation, in the form of an unusually low neutrophilic count, it was likely associated with a combination of benign and transient etiologies, often present in neonatal intensive care units (NICUs).

ID: 137
Oral Presentation
Topics: RARE DISEASES
Keywords: Paediatric Genetics, Rare diseases, Coffin Lowry syndrome

A case report of Coffin-Lowry syndrome - Rare Genetic Syndromes

Wanyang, Siu; Kannan, Kanmani; Shing, Helen; Sadia, Rao
Colchester General Hospital, United Kingdom

Introduction: Coffin-Lowry syndrome (CLS) is a rare genetic disorder with X-linked dominant inheritance characterized by mental retardation, short stature, head and facial abnormalities, skeletal anomalies, hypotonia, intellectual and developmental delays.

Case description: In this case report, we describe a male infant with CLS. In the first year of life, he repeatedly presented to the hospital with episodes of bronchiolitis and later on wheezy episodes as a toddler. There were signs of global developmental delay notable from around 4 to 6 months of age. On review by the community paediatrician, he was noted to have tapering fingers, widely spaced teeth, short and slightly upturned nose, long philtrum, full eyebrows, prominent lower lip and significant hypotonia; hence genetic testing was performed. There was no family history of learning difficulties or developmental delay. In view of his recurrent chest infections, he had videofluoroscopy, which confirmed unsafe swallow for which he is now fed via gastrostomy. He had a normal EEG and is currently awaiting MRI brain investigation. Initial genetic testing showed 2p16.3 deletion, including the neurexin gene (NRXN1). NRXN1 deletion increases the susceptibility to developmental disorders, typically presenting as a delay in reaching milestones, educational

difficulties and behavioural issues such as autism. However, this male infant's significant developmental difficulties and dysmorphic facial features are not typical features of NRXN1 deletion; hence, further genetic testing was performed. Array CGH revealed that in addition to the NRXN1 deletion, there is a de novo mutation in ribosomal protein S6 kinase alpha-3 (RPS6KA3)gene (hemizygous mutation c.352G> A p.(Glu118ln) mutation). This finding is consistent with the diagnosis of the coffin – Lowry syndrome.

Discussion: Coffin-Lowry syndrome is typically characterized by severe-to-profound intellectual disability in males and other concerns including behavioural problems, loss of strength, progressive spasticity or paraplegia, sleep apnoea, stroke and drop attacks in 20%. It is important that children affected by this disorder are supported by multi-disciplinary health professionals, including community paediatricians, hospital paediatricians, neurologists, dieticians, physiotherapists, geneticists and gastroenterologists to help support their healthy growth and development.

This contribution will be presented as Oral Presentation
ID: 223 / OP-V-4: 3
Oral Presentation
Topics: RARE DISEASES, NEONATOLOGY, NEUROLOGY
Keywords: Chromosome deletion seizure epilepsy 6q

A case report: Neonatal phenotype of chromosome 6q terminal deletion

McDonnell, Gemma; Murphy, Anne-Marie; O'Mahony, Elizabeth
University Hospital Limerick, Ireland

Background: There is a frequent correlation between the development of seizures and chromosomal abnormalities. Rare terminal deletions of Chromosome 6q are associated with phenotypical features such as craniofacial abnormalities, hypotonia, neurologic abnormalities and seizures. This report describes a 3-week old girl with a 6q deletion and her clinical neonatal presentation.

Case Presentation: A neonate born at 41+2 weeks gestation, is the first child of non-consanguineous parents, experienced seizures day 8 postdelivery. Banding cytogenetic studies revealed a karyotype of chromosome 6q25.3→q27 deletion. Foetal MRI brain scan showed lateral ventriculomegaly, and neonatal MRI showed dysgenesis of the corpus callosum, associated colpocephaly, pontocerebellar hypoplasia, bilateral perisylvian polymicrogyria. EEG showed encephalopathic changes, with the patient experiencing daily multiple myoclonic seizures. The patient was initially treated with phenobarbital, subsequently adding clonazepam and levetiracetam. Additionally, the patient required the establishment of feeds using both oral and nasogastric routes.

Conclusion: Specific chromosomal deletions present with unique phenotypical features, including seizures. Our patient developed myoclonic seizures on day 8 post-delivery. Additional data from patients with chromosome 6q deletions will help to describe the phenotypic presentation at birth. Considerations for patients with abnormal foetal brain MRI scan associated with ventriculomegaly and neonatal dysmorphic features may be candidates for early EEG, MRI and chromosome deletion testing. This may aid in the early diagnosis and management of the condition.

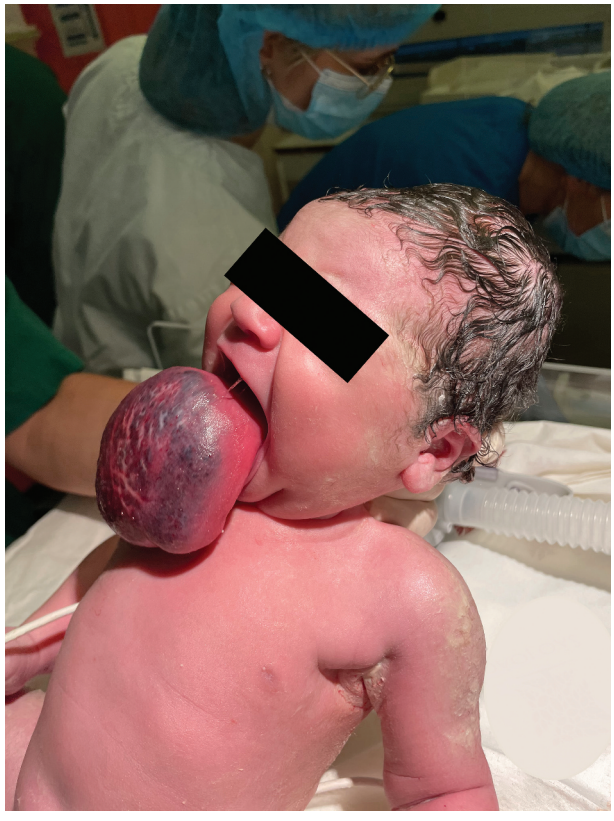
ID: 291
Oral Presentation
Topics: NEONATOLOGY
Keywords: venous malformation, vascular anomalie, prenatal diagnosis

A large fetal venous malformation: the Importance of a careful prenatal diagnosis

Pereira-Nunes, Joana[1]; Fontoura-Matias, José[1]; Carmo, Leonor[2]; Estevinho, Norberto[2]; Silva, Manuela[3]; Vilan, Ana[4,5]; Ramalho, Carla[3,5]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal; [2]Department of Pediatric Surgery, Centro Hospitalar Universitário de São João, Porto, Portugal; [3]Department of Gynecology-Obstetrics, Centro Hospitalar Universitário de São João, Porto, Portugal; [4]Department of Neonatology, Centro Hospitalar Universitário de São João, Porto, Portugal; [5]Department of Gynecology-Obstetrics and Pediatrics, Faculty of Medicine of Porto University, Porto, Portugal

Background: Vascular anomalies are commonly present in newborns. They can be diagnosed prenatally but, unfortunately, are frequently misdiagnosed. We report a case of a giant fetal oral mass diagnosed in the third trimester.

Case Presentation Summary: A 28-year-old woman, G3P2, with an unremarkable pregnancy until 30 weeks of gestation, when an oral fetal lesion was detected in ultrasound. A fetal MRI was performed to clarify the etiology and to evaluate the airway patency and showed a facial mass originating from the anterior part of the tongue, hypointense on T2-weighted images, with some areas of internal heterogeneity, possibly representing vascular structures and small hemorrhages/calcifications. At 35 weeks, she was referred to our centre. The ultrasound revealed a 57x56x34mm solid tumor, with probable origin on the tongue, pedicled and heterogeneous, with vascularization in the pedicle. The amniotic fluid was normal, and swallowing and sucking movements were seen, with no evidence of compromise of the airway patency. Given its location, large size and vascularized component, our team decided to perform a cesarean at 38 weeks. The presence of a specialized neonatology team was guaranteed. Apgar scores were 8/9/10. The presence of a large well-defined bluish/purple exophytic mass arising from the tongue's apex was confirmed. It was non-pulsatile, and no thrill or bruit was detected. There was no compromise of the airway patency, and the remaining physical examination was unremarkable. A vascular malfor-



mation was suspected. Due to its esthetic and functional impairment combined with its exophytic aspect and apparent well-defined margins, complete surgical excision was performed twelve hours after birth. She started oral motor rehabilitation and oral feeding 5 days after surgery. The histological analysis confirmed a 6,5x5,9x2,8cm venous vascular malformation, according to 2018 ISSVA (Figure).

Learning Points Discussion: Although being rare, venous malformations represent the most common type of congenital vascular malformation. They can cause clinically apparent symptoms and lead to serious local and systemic complications. They may be associated with important anatomic deformities, causing a significant decrease in daily functional capacity, quality of life and psychosocial issues. Therefore, accurate prenatal diagnosis can greatly benefit the patient. To our knowledge, this is the largest tongue venous malformation ever described. Prenatal characterization was fundamental to reliable delineate the airway's patency and to successfully plan the delivery and perinatal management. It highlights the importance of multidisciplinary specialized units in prenatal diagnosis to obtain favorable results in cases of fetal pathology, particularly in cases of vascular malformations.

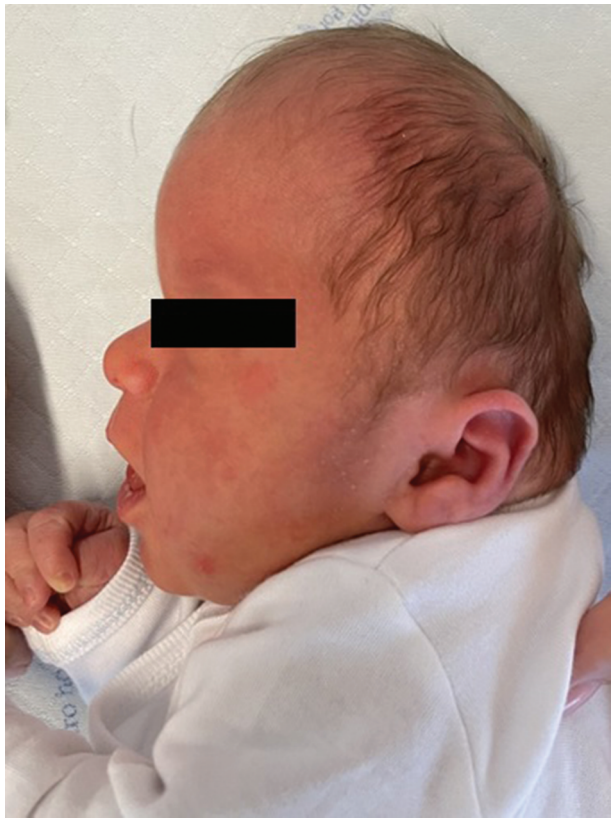
ID: 204
Oral Presentation
Topics: NEONATOLOGY
Keywords: Crouzon Syndrome, Syndromic Craniosynostosis, Coarctation of the aorta, Genetic counselling

Apparently isolated craniosynostosis at birth – The importance of a comprehensive assessment before discharge

Menezes, Catarina[1]; Capela, Ana Miguel[2]; Ribeiro Costa, Tiago[3]; Mota, Céu[4]; Falcão Reis, Cláudia[2,5,6]
[1]Department of Pediatrics, Centro Materno-Infantil do Norte - Centro Hospitalar Universitário Do Porto, Portugal; [2]Department of Clinical Genetics, Centro de Genética Médica Jacinto Magalhães, Centro Hospitalar Universitário do Porto, Portugal; [3]Department of Neurosurgery, Centro Hospitalar Universitário do Porto, Portugal; [4]Department of Neonatology, Centro Materno-Infantil do Norte - Centro Hospitalar Universitário do Porto, Portugal; [5]Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; [6]ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal

Background: Primary craniosynostosis leads to cranial deformity present at birth. It can be isolated or, less commonly, syndromic.

Case Report: Newborn male, born to healthy, non-consanguineous parents, and without any relevant family history. The prenatal period was unremarkable, except for suspected semi-lobar holoprosencephaly at the 34 weeks ultrasound, which was not confirmed on fetal MRI (brachycephaly, hypertelorism and normal brain structures). The baby was born by vacuum-assisted vaginal delivery at 39 weeks + 1 day, with an Apgar score of 9/10/10, somatometry adequate to gestational age and no abnormalities on newborn screening tests (including for rare genetic, hormone-related and metabolic conditions, hearing loss and critical congenital heart defects screenings). At birth, he presented with hypertelorism, low-set and posteriorly rotated ears, maxillary hypoplasia, brachy-turricephaly, short neck and skin redundancy in the posterior cervical region. Transfontanellar ultrasound showed ventricular dilation, and lambdoid, coronal, and sagittal craniosynostosis was apparent on skull X-rays. Additionally, blood samples for craniosynostosis gene panel screening were collected. The patient was discharged on D3 of life, with a referral for Ophthalmology, Pediatric Cardiology, Neonatology and Genetics consultation. On D7 of life, he presented to the ER in cardiogenic shock, and coarctation of the aorta was diagnosed, which went under surgical repair later on D11. On D25 of life, a molecular diagnosis of Crouzon syndrome was established (Figure).



Discussion: Crouzon syndrome (OMIM #123500) is a cause of syndromic craniosynostosis. Prenatal ultrasound and physical examination did not lead to suspicion of coarctation of the aorta, which has rarely been described in this syndrome. Initial evaluation of primary craniosynostosis should include a thorough investigation of other malformations that may not be evident on physical examination. Early and timely genetic testing is essential to differentiate syndromic forms, with a patient-directed follow-up and specific genetic counselling.

ID: 324
Oral Presentation
Topics: ALLERGY, IMMUNOLOGY & RESPIRATORY
Keywords: Anaphylaxis, NICE recommendations, Adrenaline

Are we managing Anaphylaxis NICEly?

Ezeh, Nonye; Johnson, Emma; Uduebor, Joseph; Parvathamma, Prasad
The Royal Wolverhampton NHS Trust, United Kingdom

Background: Anaphylaxis is an important cause of morbidity and mortality. Therefore, compliance with NICE recommendations is necessary to improve the quality of care for people with suspected anaphylaxis by detailed assessment referral to specialist allergy services.

Objective: To determine baseline compliance rates with NICE recommendations on assessment and referral after emergency treatment of children presenting with Anaphylaxis [CG134] to a District General Hospital in the UK.

Methods: A retrospective audit was conducted to check our baseline compliance with NICE recommendations in a District General Hospital setting. Clinical records of patients (aged 0-16 years) diagnosed with anaphylaxis during the last 5 year period (2016 to 2021) were audited against NICE recommendations on assessment and referral to specialist allergy services. NICE recommended proforma was used to assess the department's compliance. Patients with documented triggers and those with unknown triggers were included in the audit. A total of 40 patients were identified. Two patients were discounted because of incorrect coding. Eight patients were excluded from the study due to their clinical records and/or e-discharge summaries were not uploaded in the trust portal.

Results: Thirty-two out of 40 patient records were identified during the five-year period. Male preponderance was noted (69%). The mean age and weight on presentation were 6 years and 26.9kg, respectively. More 17(53.1%) patients presented during the weekends compared to weekdays. Peanuts and eggs were the commonest triggers identified in the initial history. The trigger for the anaphylaxis was unknown in 22% of admissions. In the majority of the presentation (78.1%), clinical features consistent with a diagnosis of anaphylaxis were documented. However, the Mast cell tryptase test was done only in 22% of the patients. Most of the patients (87.5%) were admitted to paediatric wards following emergency treatment for further management. Most of these patients records show that they were advised on trigger avoidance (78.1%) and measures to manage anaphylaxis (62.5%). Education on using adrenaline auto-injectors was documented in two-thirds of patients (62.5%). In the majority, 18 (56.3%) of the cases, two adrenaline auto-injectors were prescribed prior to discharge. There was no documentation on the information of patient support groups in any of the clinical records viewed. Almost all of these patients who presented with anaphylaxis were subsequently 31 (96.9%) referred to specialist allergy clinics on discharge.

Conclusion: The audit showed that the high compliance to NICE recommendations on managing children and young people presenting with anaphylaxis to our hospital. However, documentation of referral to patient support groups and mast-cell tryptase testing were under-utilized. Hence, we have initiated local adaptation of NICE recommendations as local unit guidelines and agreed to use information leaflets from recommended support groups.

ID: 163

Oral Presentation

Topics: NUTRITION & DIETS, ALLERGY, IMMUNOLOGY & RESPIRATORY

Keywords: maternal weight status, atopic dermatitis, wheezing

Associations of maternal weight status with the risk of offspring atopic dermatitis and wheezing by one year of age: The Born in Guangzhou Cohort Study

Wei, Xueling[1]; Huang, Peiyuan[1]; Gao, Chang[1]; Shen, Songying[1]; Tu, Si[1]; Guo, Yixin[1]; Zhang, Lifang[1]; Lu, Minshan[1]; Lu, Jinhua[1]; Wang, Chi Chiu[2]; He, Jianrong[1]; Qiu, Xiu[1]

[1]Guangzhou Women and Children's Medical Center, Guangzhou Medical University; [2]The Chinese University of Hong Kong

Background: Maternal pre-pregnancy body mass index (BMI) and gestational weight gain (GWG) have been linked to offspring allergic disorders. However, associations observed in previous studies were inconsistent and might be confounded by unmeasured familial factors. We aimed to examine the associations of maternal weight with offspring allergic disorders. We used paternal BMI as a negative control exposure to explore whether familial clustering factors could explain these associations.

Methods: We included data of 10522 children from the Born in Guangzhou Cohort Study, 2012–2017. Data on maternal weight were obtained from questionnaires and obstetric records, and paternal weight was collected from questionnaires. Atopic dermatitis (AD) and wheezing at the age of one year were defined according to parental-reported physician diagnosis. Risk ratios (RRs) with 95% CIs were estimated by log-binominal regression with mutual adjustment for maternal and paternal weight status.

Results: 16.2% and 7.9% of children were diagnosed with AD and wheezing, respectively, by the age of one year. Maternal overweight/obesity was associated with an increased risk of offspring AD (adjusted RR, 1.20; 95% CI, 1.04-1.37), but paternal overweight/obesity or BMI was not. Both maternal pre-pregnancy BMI (adjusted RR, 1.13; 95% CI, 1.00-1.27 for per 5 kg/m2 increase in BMI) and paternal BMI (adjusted RR, 1.10; 95% CI, 0.98-1.23) were positively associated with the risk of offspring wheezing, with similar magnitude of associations. Maternal GWG was not associated with AD or wheezing.

Conclusions: Our findings suggest that maternal pre-pregnancy overweight/obesity might increase the risk of infant AD via intrauterine mechanisms, whereas the association with wheezing might be confounded by uncontrolled familial factors.

ID: 352
Oral Presentation
Topics: RARE DISEASES, NEONATOLOGY
Keywords: Primary craniosynostosis, Syndromic craniosynostosis, Genetic study, Genetic counselling

Craniosynostosis and Genetics - Descriptive analysis of a case series

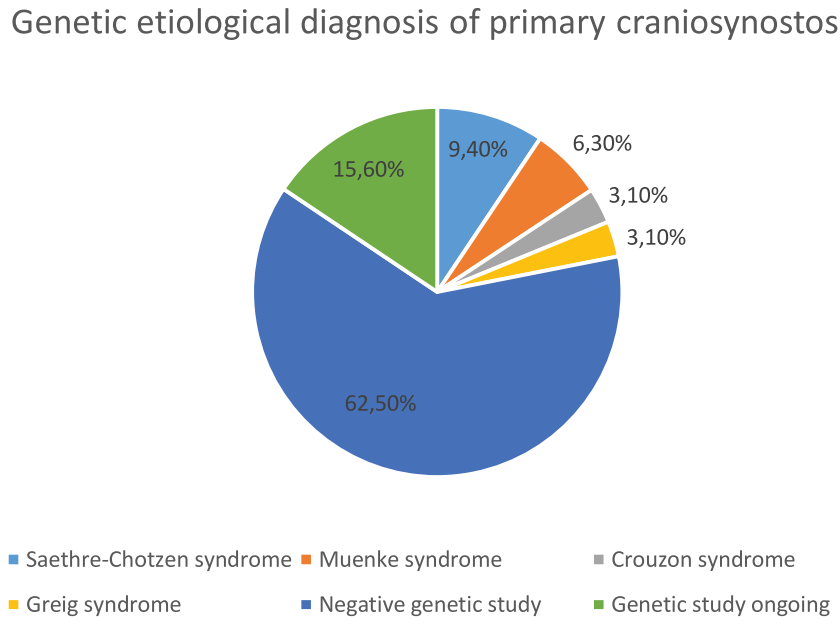
Menezes, Catarina[1]; Ribeiro Costa, Tiago[2]; Capela, Ana Miguel[3]; Falcão Reis, Cláudia[3,4,5]; Mota, Céu[6]
[1]Department of Pediatrics, Centro Materno-Infantil do Norte - Centro Hospitalar Universitário Do Porto, Portugal; [2]Department of Neurosurgery, Centro Hospitalar Universitário do Porto, Portugal; [3]Department of Clinical Genetics, Centro Hospitalar Universitário do Porto, Portugal; [4]Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal; [5]ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal; [6]Department of Neonatology, Centro Materno-Infantil do Norte - Centro Hospitalar Universitário do Porto, Portugal

Introduction: Primary craniosynostosis may be simple or complex, and the latter, although less frequent, is commonly associated with syndromic entities.

Aim: A study was conducted to characterize the pediatric population with primary craniosynostosis and its genetic etiology.

Methods: Descriptive study of all pediatric cases with primary craniosynostosis, simple or complex, with diagnosis and genetic etiological investigation between 2011 and 2021 in our Hospital Center. Data collection was carried out by consulting electronic clinical files and statistical analysis was made using the SPSS system.

Results: A total of 36 patients were diagnosed with primary craniosynostosis, predominantly male (75%; n = 27). 25% (n= 9) are complex and 69.4% (n=25) are simple with a predominance of sagittal (44.1%, n=15), followed by metopian (26.5%;n=9) and unicoronal type (2.9%, n=1). The follow-up of 2 of these patients was lost. These patients underwent a genetic study, and 9.4% (n=3) were diagnosed with Saethre-Chotzen syndrome, 6.3% (n=2) with Muenke syndrome, 3.1% (n =1) with Crouzon syndrome and 3.1% (n=1) with Greig syndrome. The genetic study of the remainder of the patients was negative in 62.5% (n=20) and is still ongoing in 15.6% (n=9).



Genetic ethiological diagnosis was achieved in about 55.6% (n = 5) of all complex craniosynostosis (Saethre-Chotzen, Muenke and Crouzon Syndromes) and only in 4% (n = 1) of all simple craniosynostosis (Greig Syndrome) (Figure).

Conclusion: The most common complex syndromic craniosynostosis in the literature is the Muenke syndrome, which has not been verified in this study in which Saethre-Chotzen syndrome was more frequent. As expected, the genetic diagnosis was obtained in the majority of complex craniosynostosis (most commonly syndromic) and just a few simple ones (more often sporadic). The evaluation of these patients must always include a genetic study aiming at the etiological diagnosis, prognosis and specific genetic counselling to their families.

ID: 123

Oral Presentation

Topics: NEONATOLOGY, PUBLIC HEALTH

Keywords: Down Syndrome, prenatal screening, non-invasive-prenatal testing, livebirth prevalence

Does non-invasive prenatal testing (NIPT) affect the livebirth prevalence of Down syndrome in the Netherlands? A population-based register study.

de Groot - van der Mooren, Maurike D[1]; de Graaf, Gert[2]; Weijerman, Michel E[3]; Hoffer, Mariëtte J V[4]; Knijnenburg, Jeroen[4]; van der Kevie-Kersemaekers, Anne-Marie F[5]; Kooper, Angelique J A[5]; Voorhoeve, Els[6]; Sikkema-Raddatz, Birgit[7]; van Zutven, Laura J C M[8]; Srebniak, M I {Gosia}[8]; Huijsdens-van Amsterdam, Karin[9]; Engelen, John J M[10]; Smeets, Dominique[11]; van Kaam, Anton H[12]; Cornel, Martina C[13]

[1]Department of Neonatology, Amsterdam Public Health and Amsterdam Reproduction & Development research institute, Amsterdam University Medical Centres, location VUmc, De Boelelaan 1117, 1081 HV, Amsterdam, The Netherlands; [2]Dutch Down Syndrome Foundation, Industrieweg 5, 7944 HT, Meppel, The Netherlands; [3]Department of Pediatrics, Alrijne hospital, Simon Smitweg 1, 2353 GA, Leiderdorp, The Netherlands; [4]Department of Clinical Genetics, Leiden University Medical Centre, Albinusdreef 2, 2333 ZA, Leiden, The Netherlands; [5]Department of Clinical Genetics, Amsterdam University Medical Centres, location AMC, Meibergdreef 9, 1105 AZ, Amsterdam, The Netherlands; [6]Department of Clinical Genetics, Amsterdam University Medical

Centres, location VUmc, De Boelelaan 1117, 1081 HV Amsterdam, The Netherlands; [7]Department of Genetics, University Medical Centre Groningen, Hanzeplein 1, 9713 GZ, Groningen, The Netherlands; [8]Department of Clinical Genetics, Erasmus Medical Centre, Doctor Molewaterplein 40, 3015 GD, Rotterdam, The Netherlands; [9]Department of Genetics, University Medical Centre Utrecht, Heidelberglaan 100, 3584 CX, Utrecht, The Netherlands; [10]Department of Clinical Genetics, Research Institute Growth and Development (GROW), Maastricht University Medical Centre, P. Debyelaan 25, 6229 HX, Maastricht, The Netherlands; [11]Department of Human Genetics, Radboud University Medical Centre, Geert Grooteplein Zuid 10, 6525, GA, Nijmegen, The Netherlands; [12]Department of Neonatology and Amsterdam Reproduction & Development research institute, Amsterdam University Medical Centres, location VUmc, De Boelelaan 1117, 1081 HV, Amsterdam, The Netherlands; [13]Department of Clinical Genetics and Amsterdam Public Health research institute, Amsterdam University Medical Centres, Vrije Universiteit Amsterdam, location VUmc, De Boelelaan 1117, 1081 HV, Amsterdam, The Netherlands

Background: The introduction of Non-Invasive Prenatal Testing (NIPT) changed the landscape in prenatal screening worldwide. No long-term population-based study on the impact of NIPT on Down syndrome (DS) live birth (LB) prevalence has been published. This study aims to evaluate if NIPT affects LB prevalence of DS in the Netherlands.

Methods: Data from clinical genetics laboratories and the Working Party on Prenatal Diagnosis and Therapy (2014 - 2018) and previously published data (1991-2013) were used to assess trends for DS LB prevalence and reduction percentage (the net decrease in DS LBs resulting from selective termination of pregnancies). Statistics Netherlands provided general population data.

Results: DS LB prevalence increased from 11.6 per 10,000 in 1991 to 15.9 per 10,000 in 2002 (regression coefficient 0.246 (95% CI: 0.105 to 0.388; p=0.003)). After 2002, LB prevalence decreased to 11.3 per 10,000 in 2014 and further to 9.9 per 10,000 in 2018 (regression coefficient 0.234 (95% CI: -0.338 to -0.131; p<0.001). The reduction percentage increased from 26% in 1991 to 55.2% in 2018 (regression coefficient 0.012 (95%CI: 0.010 to 0.013; p<0.001)). There were no trend changes after introducing NIPT as second- tier (2014) and first-tier test (2017).

Conclusions: Introducing NIPT did not change the decreasing trend in DS LB prevalence and increasing trend in reduction percentage. These trends may be caused by a broader development of more prenatal testing that had already started before introducing NIPT.

ID: 140
Oral Presentation
Topics: HEALTH ECONOMICS & MANAGEMENT
Keywords: Deming Cycle, Antibiotic Stewardship Program, Managerial Tools, Pediatric Department

Implementing the Deming Cycle in hospital pediatric practice : a managerial approach.

Tsitsani, Pelagia[1]; Kriki, Vasiliki[2]; Papatsimpas, Elias[3]
[1]Pediatric Clinic, General Hospital of Pella, Hospital Unit of Edessa, Greece; [2]Medical Centre of St. Anargyroi, Athens, Greece; [3]Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture,Thessaloniki, Greece

Background: The quality cycle defined by Deming (1993) is a series of four steps (design - action - control - improvement), leading to methodical and continuously evaluated processes. The cycle aims at nonstop improvement; it is a dynamic wheel that can be administered in all sectors of organizations and companies and in Healthcare. For example, in The Pediatric Clinic, we should always take measures to avoid excessive consumption of antibiotics.

Methods & Results: The Chief Consultant Pediatrician, guided by the Deming cycle, formed a "Stewardship Team", and the following steps were applied to monitor antibiotic use in our department.

(1) **Design**: Need for informing the clinic staff by the Chief Consultant Pediatrician and the Head of the nursing staff. Specific treatment protocols define the administration of antibiotics in the context of evidence-based medicine.
(2) **Action**: An Electronic Infectious Diseases Therapy Protocol is installed on the computers of doctors and nurses, with the support of the Information Technology (IT) Department. The Chief Consultant Pediatrician organizes a series of educational courses for the clinic's medical staff to get familiar with the updated protocols and learn how to connect them with actual clinical cases directly.
(3) **Control**: Initiation of antibiotics is justified only by standardized clinical and laboratory criteria. Consumption of antibiotics is compared with that of the pre-Deming cycle (on a monthly basis). Compliance with the protocol is evaluated, and possible deviation cases are further discussed (e.g. parents sign and take children at their own risk, sudden change of clinical picture, etc.)
(4) **Improvement**: Experiences are captured, specifics that could have been done better are identified, and the wheel starts from the beginning towards a new cycle of improvement.

Conclusions: Managerial tools can be helpful in the organization of a Pediatric Department and ultimately lead to better patient outcomes in Healthcare. We used the Deming cycle, the very first formalized approach to improve processes, to design a pilot Antibiotic Stewardship Program in a Public Pediatric Clinic. The commitment of the Chief Medical and Nursing Officer and integrating feedback on a monthly-basis communication of the staff is crucial. Collaboration with Information Technology (IT) staff is necessary to implement relevant protocols into the existing workflow.

ID: 135
Oral Presentation
Topics: NEUROLOGY
Keywords: Infant, Neurodevelopmental examination, Dandy-Walker Complex

Infant with marked hypertonia. Case report of a rare disease.

Tsitsani, Pelagia; Lazaridi, Eleni; Gouni, Dimitra; Kyparissi, Giannoula
Pediatric Clinic, General Hospital of Pella, Hospital Unit of Edessa,Greece

Background: Dandy-Walker complex is a rare group of disorders that affect the development of the brain. Pathogenesis is composite with possible genetic and environmental factors; placental and umbilical cord abnormalities may also be present. Alterations in brain development are congenital. Dandy-Walker complex affects the formation of the cerebellum, as well as the surrounding fluid-filled spaces. The cerebellar vermis may be hypoplastic or absent, and the fourth ventricle is usually dilated. Clinical presentation and prognosis depend on the related disorders, and a multidisciplinary approach is required for the prompt treatment of patients.

Case Presentation Summary: We report a case of a 4-month-old female infant presenting to our department for routine vaccination. She was of foreign origin, allegedly born out of a nonconsanguineous marriage, full-term normal vaginal delivery with no written record of the actual perinatal circumstances and Apgar score. Birth Weight: 3600 gr. Maternal follow-up during pregnancy was not systematic. A neurological exam revealed a severely hypertonic baby with poor head control, who arched back with opisthotonus when seated with support. While held in a supported stand,

she stiffened and cross-checked her legs, an early sign of spasticity. She could not push up to elbows when laying on her stomach and couldn't smile spontaneously to her mother, bubble or reach for colourful objects. The anterior fontanel was almost closed, and the head circumference was below the second percentile (microcephaly). She was exclusively breastfeeding and had nearly doubled her birth weight. Physical examination of the heart and other systems was normal. The baby underwent a full blood work with biochemical markers and arterial blood gases analysis, all within normal range. Brain ultrasound revealed a retrocerebellar arachnoid cyst. Chest radiology, heart and abdomen ultrasound showed normal findings, whereas the brain MRI was consistent with Dandy-Walker complex characteristics: enlarged posterior cranial fossa filled with a cystic structure that communicates freely with the fourth ventricle, with accompanying hypoplasia of the cerebellar vermis. She was referred to child neurology and started having physiotherapy.

Learning Points Discussion: Holistic comes from the Greek word 'holon', which translates into 'all' or 'total'. Performing a thorough neurodevelopmental examination when assessing an infant is a major part of the patient's holistic physical approach and crucial for her future welfare. Early diagnosis of developmental delays and/or abnormal muscle tone can lead to diagnosis and quick interventions and have an impact on promoting quality of childhood and adult life.

ID: 369

Oral Presentation

Topics: ADOLESCENT MEDICINE

Keywords: Eating disorders arteries cardiovascular health underweight

A longitudinal pilot study of arterial stiffness using pulse wave velocity in female adolescents with severe anorexia nervosa

Hudson, Lee Duncan[1]; Jacobs, Daniel[1]; Al-Khairulla, Hind[2]; Rapala, Alicja[4]; Viner, Russell[1]; Nicholls, Dasha[3]; Hughes, Alun[4]

[1]GOS UCL Institute of Child Health, United Kingdom; [2]Ellern Mede Eating Disorder Unit, London; [3]Imperial College London; [4]UCL Institute of Cardiovascular Science

Background: Anorexia Nervosa (AN) is a leading cause of underweight in children and young people in high-income countries. Acute cardiovascular complications are well-recognised sequelae of underweight in AN, yet less is known about longer-term cardiovascular disease risk. Pulse wave velocity (PWV) is a non-invasive proxy for arterial stiffness (greater PWV indicating greater stiffness), which is well established as a predictor for future adverse cardiovascular disease events. Cross-sectional studies have found increased arterial stiffening in AN, but there are no published longitudinal data. Here we present interim data from a pilot longitudinal study of PWV in underweight young adolescents with AN admitted to an eating disorder unit in the United Kingdom.

Methods: We measured carotid-femoral PWV in all new admissions to a single eating disorder unit from December 2020 who met inclusion criteria: 1)Diagnosis of AN;2)Aged 12-18 years;3) underweight (<85% of average BMI for age and sex). PWV was measured using Vicorder by a single operator at admission and weekly for 12 weeks. A London ethics committee provided ethics approval. Standardised PWV Z-score for age (PWVz) was derived from published data.

Results: Seven participants have been recruited so far. All participants were Caucasian. The median age was 16. Mean baseline systolic blood pressure (BP) was 98 (SD 6.5) mmHg and diastolic mean 61 (SD 6.15). Baseline mean PWV was 7.19 (SD 0.40) m/s. Mean PWVz was 3.81 (SD 0.71, one sample t-test $p<0.01$). Mean BMI was 15.62 (0.65 SD)kg/m2. Baseline PWV and PWVz were not associated with baseline BMI. In multi-level, mixed-effects models PWV and PWVz decreased over time in weeks (coefficient -0.05,95%CI -0.07 to -0.03; coefficient -0.10,95% CI–0.14 to -0.05 respectively). Systolic and diastolic BP increased over time, as did BMI.

Conclusions: We have demonstrated feasibility in collecting repeated PWV measures in this patient group and continue to recruit to the study. Interim findings suggest concerning high standardised scores of PWV compared to normative population data at baseline, with temporal decreases in PWV and PWV z-score during admission. Why PWV is high at baseline and improves over time is unclear. Peripheral vascular changes are described in AN, improving with weight restoration. However, BP increased over time in our group (as expected with weight gain), which is usually linked to increased arterial stiffening. Further investigation of potential mechanisms for arterial changes in AN is required, e.g. through modalities such as magnetic resonance imaging.

ID: 281

Oral Presentation

Topics: GENERAL PEDIATRICS, NUTRITION & DIETS, PUBLIC HEALTH

Keywords: behavior, obesity, CEBQ, eating, malnutrition

Eating behavior and nutritional status of children

Oliveira, Ana Gisela[1]; Alba, Diana[2]; Alves, Luís[3]; Ferreira, Rute[3]; Mozes, Mónica[3]

[1]Centro Hospitalar Tondela Viseu, EPE; [2]Centro Hospitalar do Tâmega e Sousa; [3]Unidade de Saúde Familiar Santo André de Canidelo

Background: Eating habits are shaped in the first years of life, with established eating behaviours persisting in adulthood. When these habits are inadequate, there is a risk of malnutrition. Children base their eating behaviour on their family and peers, being critical for caregivers to provide appropriate foods and eating experiences. Knowledge of children's eating behaviours and their relationship with nutritional status is useful for doctors to promote healthy eating practices and prevent chronic diseases associated with malnutrition.

Aim: This study aims to assess the eating behaviour and nutritional status of children.

Methods: Observational, cross-sectional and descriptive study in a Primary Health Care Unit. Children between 3-13 years of age were included, whose caregivers consented to participate. Their eating behaviour was assessed through parents' perception by applying the Children's Eating Behaviour Questionnaire (CEBQ), translated and validated for Portuguese. It contains 35 questions divided into eight subscales, four reflecting "food approach" and the others "food avoidance". The nutritional status of children was assessed using the z-score of body mass index for age (BMI-age). The nutritional status of caregivers was assessed by BMI.

Results: The majority of questionnaires (90%) were completed by mothers, with a median age of 41 years (min.24Y–max.56Y), 45% graduated with a degree. The sample comprised 100 children aged 7 years (min.3Y–max. 13Y), 52% females, 68% had normal weight, 14% were overweight, 16% were obese, and 2% were underweight. Children with excess weight and obesity showed higher scores at two CEBQ subscales associated with "food approach" (food response (FR), enjoyment of food (EF), $p<0.001$) and lower scores at one "food avoidance" subscale (satiety responsiveness (SR), $p=0.017$) compared to normal-weight children. Slowness in eating (SE) was most frequent in females and between 6-9 years ($p=0,010$; $p=0,019$, respectively), Table 1. Spearman's correlation showed a positive correlation between the caregivers' BMI and children's z-score of BMI-age ($\rho=0,223$; $p=0,026$).

Conclusions: Obesity is one important health problem in Portugal. As expected, we found that children's nutritional status is influenced by their parent's nutritional status, although with a weak correlation, possibly due to sample size. Our results indicate behavioural differences between children with different nutritional status, two "food approach" subscales were positively associated, and one "food avoidance" subscale was negatively associated with excess weight/obesity

Table 1. Mean ± standard deviation of the CEBQ1 subscales according to categories of body mass index for age (BMI/age)$_2$, gender and age of children

	CEBQ			
n = 100	**"Food approach" subscales**			
	FR3	**EF4**	**EOE5**	**DD6**
BMI/age				
Children				
Normal weight	1,99 (0,568)	2,99 (0,707)	1,85 (0,615)	2,12 (0,751)
(n = 68)				
Overweight	2,64 (0,698)	3,57 (0,696)	2,09 (0,988)	1,98 (0,711)
(n = 14)				
Obesity	2,96 (0,731)	3,72 (0,386)	2,14 (0,555)	2,54 (0,860)
(n = 16)				
Underweight	1,60 (0,566)	3,13 (1,237)	2,38 (0,530)	1,67 (0,940)
(n = 2)				
p (ANOVA)	<0,001	<0,001	0,235	0,132
Sex, Children				
Feminine	2,27 (0,821)	3,15 (0,769)	1,98 (0,667)	2,15 (0,754)
(n = 52)				
Masculine	2,19 (0,608)	3,23 (0,691)	1,90 (0,686)	2,17 (0,808)
(n = 48)				
p (ANOVA)	0,576	0,584	0,555	0,935
Age (years),				
Children				
≤5 (n = 32)	2,14 (0,704)	3,12 (0,698)	1,84 (0,677)	2,18 (0,846)
6–9 (n = 34)	2,30 (0,672)	3,28 (0,717)	2,02 (0,670)	2,24 (0,708)
≥10 (n = 34)	2,24 (0,803)	3,18 (0,782)	1,95 (0,682)	2,06 (0,785)
p (ANOVA)	0,682	0,662	0,534	0,613
n = 100	"Food avoidance" subscales			
	SR7	SE8	FF9	EUE10
BMI/age				
Children				
Normal weight	2,78 (0,781)	2,77 (1,089)	2,90 (0,848)	2,32 (0,655)
(n = 68)				
Overweight	2,16 (0,702)	2,55 (1,093)	2,95 (0,629)	2,07 (0,532)
(n = 14)				
Obesity	2,35 (0,659)	2,64 (0,949)	2,83 (0,821)	2,67 (0,773)
(n = 16)				
Underweight	2,20 (1,414)	3,00 (1,414)	3,34 (1,888)	2,50 (1,414)
(n = 2)				
p (ANOVA)	0,017	0,869	0,875	0,263
Sex, Children				
Feminine	2,67 (0,874)	2,99 (1,025)	2,91 (0,808)	2,41 (0,759)
(n = 52)				
Masculine	2,55 (0,697)	2,44 (1,036)	2,90 (0,853)	2,28 (0,591)
(n = 48)				

(*Continued*)

Table 1. (*Continued*)

	CEBQ			
n = 100	**"Food approach" subscales**			
	FR3	**EF4**	**EOE5**	**DD6**
p (ANOVA)	0,486	0,010	0,945	0,318
Age (years),				
Children				
≤5 (n = 32)	2,64 (0,712)	2,63 (0,982)	2,87 (0,788)	2,20 (0,694)
6–9 (n = 34)	2,52 (0,703)	3,12 (0,890)	2,79 (0,781)	2,45 (0,654)
≥10 (n = 34)	2,68 (0,946)	2,42 (1,188)	3,05 (0,904)	2,38 (0,700)
p (ANOVA)	0,680	0,019	0,428	0,326

[1]CEBQ (Children's Eating Behaviour): questionnaire to assess infant feeding behavior.

[2]Classification according to cutoffs recommended by the World Health Organization (2007) for children older than 5 years.

[3]Food Response (FR); [4]Enjoyment of food (EF); [5]Emotional Overeating (EOE); [6]Desire to drink (DD); [7]Satiety Response (SR); [8]Slowness in eating (SE); [9]Food fussiness (FF); [10]Emotional Undereating (EUE).

in children. These findings may help to develop effective nutritional interventions to promote healthy eating behaviours.

ID: 367

Oral Presentation

Topics: GENERAL PEDIATRICS

Keywords: IMCN, signature, admission notes, date, time

Evaluation of admission notes discrepancies in paediatric ward in University Hospital Kerry, Ireland

Khurshid, Sundas; Abdullah, Alaa
University Hospital Kerry, Ireland

Background: HSE Standards & Recommended Practices for Healthcare Records Management are a guide to the standards of practice required in the management of healthcare records in the HSE, based on current legal requirements and professional best practices.

Aims: The audit was done to check for the following standards, including documentation of patient sticker, date and time, allergy mentioned, eligible doctor name, Irish medical council registration number and signature on clinical notes as per HSE guidelines for keeping medical records in Paediatric ward of University Hospital Kerry. These standards are essential as they record decisions relating to the care plan and maintain communication with other staff.

Methods: 50 sets of random admission notes in the paediatric ward over August 2021 to September 2021 were pulled, and compliance with each of the standards in the audit tool was recorded.

Results: 50 patient charts were analyzed. 88% of charts have a patient sticker on clinical admission notes. On 62% charts, time and allergy, was mentioned, on 60%, the date was written. Doctors eligible name, signature and IMCN was documented on 74%, 76% and 64% charts, respectively.

Conclusion: There is good compliance for the patient sticker in admission notes and fair compliance for doctor's eligible name and signature, whereas there is poor compliance for writing date, time, allergies and eligible IMCN. To get 100%, compliance audit results should be displayed in the ward, Emergency, and doctor's office for sensitization. Rubber stamps should be provided to NCHDS with names and IMCN to improve compliance.

ID: 327
Oral Presentation
Topics: NEONATOLOGY
Keywords: High frequency ventilation, neonates

High frequency ventilation, volume guarantee and carbon dioxide levels

Pienaar, Jane; Davies, Mark William; Van Der Walt, Nilushka
Grantley Stable Neonatal Unit, RBWH, Queensland, Australia

Background: Often, the initial pCO2 (partial pressure of carbon dioxide) level after commencing HFV (high-frequency ventilation) can be outside the chosen acceptable range. The correct assessment of adequate chest wiggle via the set amplitude remains a challenge. It can only be verified by early and frequent initial blood gases to obtain and ensure acceptable pCO2 levels.

Aim: To determine if using VG (volume guarantee) in HFV, using specified targeted tidal volumes (VThf) for given frequencies, with early and frequent blood gas monitoring, can improve the initial and time to acceptable pCO2 levels in neonates requiring HFV for the first time.

Method: As part of a clinical practice improvement, we implemented an 'HFV with VG' guideline using a suggested VThf according to the frequency used when starting HFV (see Table 1). Demographic data and data prior to starting HFV and thereafter were collected and compared with the findings of our initial service evaluation performed to determine the initial pCO2 levels, time taken to the first pCO2 level and time taken to achieve acceptable pCO2 levels after starting HFV.

Results: Our initial service evaluation of 112 neonates requiring their first HFV episode showed the initial blood gas was performed within 30 minutes after starting HFV in 42% (47 neonates) and 1 hour after starting HFV in 76% (85 neonates), compared with 70% (14 of 20 neonates) and 80% (16 of 20 neonates) in the follow-up study after implementing the 'HFV and VG' guideline. Compared to the initial evaluation where 15 of 112 neonates (13.4%) had significant hypocapnoea (pCO2 <35mmHg), 18 neonates (16.1%) had significant hypercapnoea (pCO2 >65mmHg), and 79 neonates (70.5%) had pCO2 levels between/equal to 35-65 mmHg on the first gas, our follow-up study showed 2 out of 20 neonates (10%) had significant hypocapnoea, 9 neonates (45%) had significant hypercapnoea and 9 neonates (45%) had pCO2 levels between/equal to 35-65 mmHg. (Chi-squared test P = 0.013) The initial evaluation median (IQR) time from starting HFV to

Table 1. Suggested starting VT_{hf} values for given frequency

Frequency in Hz	Tidal volume in ml/kg
10	1.7
11	1.6
12	1.5
13	1.5
14	1.4
15	1.4

acceptable pCO2 levels was 2.93 hours (0.88; 7.02) compared to the follow-up study of 2.93 hours (1.55; 7.92).

Conclusion: Our initial service evaluation showed significant delays in a relatively large proportion of our population in obtaining and achieving acceptable pCO2 levels after commencing HFV. Although there have been improvements by using our 'HFV and VG guideline' after commencing HFV, we demonstrated more first gas results with hypercarbia and still have room to improve obtaining the first gas in a timely manner.

ID: 303
Oral Presentation
Topics: INFECTIOUS DISEASES
Keywords: sexually transmitted infections, syphilis, primary prevention, sexual education

Syphilis, the reappearance of an old disease?

Oliveira, Ana Gisela; Sousa, Jessica; Antunes, Joaquina; Loureiro, Susana; Coelho, Sónia; Faria, Cristina
Centro Hospitalar Tondela Viseu, Portugal

Introduction: There has been an increase in the reporting rate of Syphilis in Europe, with adolescents and young adults being especially vulnerable. We bring 3 cases that occurred in less than 6 months in our hospital.

Description: A 17-year-old female teenager comes to the emergency department with a one-week evolution of painful inguinal adenopathies associated with dyspareunia, leukorrhea, dysuria, pollakiuria, hypogastric and lumbar pain, asthenia and involuntary weight loss. She reported unprotected sex with her boyfriend 4 weeks before when observed in the emergency department due to a genital ulcer. She presented painful non-adherent, bilateral inguinal adenopathies of elastic consistency and small hypertrophic and macerated perianal erythematous plaques on physical examination. Analytical study: without leucocytosis, PCR 3.41mg/dl. Fast urine test without changes. Due to the suspicion of sexually transmitted infections (STIs) and to clarify the condition, she was admitted to the Paediatrics ward. Dermatology raised the hypothesis of perianal condyloma lata, diagnosis confirmed by the presence of total antibodies and IgM for treponema pallidum (TP) positive, reactive RPR (64 dils) and increased fecal calprotectin. She was medicated with 2.4MU IM benzathine penicillin G (BPG), 250mg IM ceftriaxone and 1g oral azithromycin. The boyfriend had been medicated for Syphilis and Urethritis. They both became healed. The third case, a 16-year-old male, was observed in the emergency department for a micropapular rash dispersed over the trunk and limbs for the last month and dysuria since the last week, previously medicated with an antihistamine. On physical examination, he presented micropapular rash on the trunk and limbs, palm-sparing; two oral thrushes; scaly erythematous and fissurated lesion with 5x2cm on the penis and a 3mm ulcer on the glans. The analytical study revealed IgM and IgG positive for CMV, total antibodies and IgM for TP positives, reactive RPR (128 dils). Resolution of complaints under a dose of 2.4MU IM BPG. He was also medicated with 250mg IM ceftriaxone and 1g oral azithromycin.

Discussion: STIs are one of the most important public health problems in adolescence. Its diagnosis is sometimes difficult and requires a high index of suspicion. These clinical cases alert for the importance of early identification of the disease, preventing its transmission and treatment of the contacts. The appearance of more cases of STIs, namely Syphilis, also warns of the potential failure of sexual education measures, which aims to modify risky practices and promote healthy habits.

ID: 358
Oral Presentation
Topics: GENERAL PEDIATRICS, PUBLIC HEALTH, EMERGENCY PEDIATRICS
Keywords: accidents; pediatrics; emergency department; prevention

Accidents in pediatric emergency department: the experience of a level 2 hospital

Nisa, Madalena Meira; Cardoso, Sandra Soares; Sousa, Jessica; Oliveira, Ana Gisela; Reis, Sofia; Almeida, Ângela; Baptista, Cristina
Centro Hospitalar Tondela-Viseu, Portugal

Background: Accidents are an important cause of morbidity and mortality in pediatric age and pediatric emergency department admissions. This study aimed to analyze the clinical and epidemiological characteristics of patients who were admitted to the pediatric emergency department due to an accident and characterize the context in which it occurred.

Methods: We performed a prospective questionnaire study in which the medical staff reported the emergency department admissions due to accidents. Data were collected and analyzed between April 2019 and March 2020 during the first week of each month.

Results: During this period, out of a total of 7955 admissions to the pediatric emergency room, there were 371 episodes (4.7%) due to accidents: 52.3% in spring, 24.8% on Mondays and 53.1% in the morning. Most patients were male (59.8%), with a median age of 10 years, and 28.8% had already been admitted to the pediatric emergency department due to an accident. Most accidents occurred in schools (45%), homes (24.5%) and public roads (11.3%). More than half of the accidents were witnessed by adults (58%); 76.5% of the patients reported to the emergency department in their vehicle, 20.5% by ambulance and 12.1% previously used another health service. The predominant time between the accident and admission to the emergency room was 30 minutes to 1 hour (31.5%), and 71.7% of cases were screened in yellow colour by the Manchester screening system. The most prevalent injury mechanisms were falls from standing height (31.5%), trauma from inanimate objects/people (26.2%), falls < 1 meter (11.1%), soccer practice (7.3%) and falls > 1 meter (3.8%). The main final diagnoses were upper limb contusion (15.6%), mild traumatic brain injury (14.8%), lower limb sprain (14.6%), lower limb contusion (11.1%) and upper limb fracture (8.6%). About support from other specialties, more than half were observed by orthopaedics (59%), and 26.1% were observed by surgery. A minority was referred posteriorly to an Orthopedic appointment (9.7%), there were 4 transfers, and no deaths occurred.

Conclusions: The high frequency, the location of the accidents, the injury mechanisms and the final diagnoses were in agreement with the literature. Accidents were a common reason for referral to the pediatric emergency department with significant use of medical resources. Pediatricians play an important role in preventing accidents that are sometimes preventable and must continue to work in raising awareness among caregivers, children and adolescents.

ID: 320
Oral Presentation
Topics: GENERAL PEDIATRICS, RHEUMATOLOGY, EMERGENCY PEDIATRICS
Keywords: Henoch-Schonlein purpura, Vasculitis, Corticoids, Child health

Henoch-Schonlein purpura in a Portuguese third-level pediatric emergency department: management and clinical course

Duarte-Costa, Sílvia[1]; Pissarra, Rita[2]; Fraga, Catarina[1]; Pires Silva, Sara[1]; Rocha, Rúben[3]; Pereira, Marco[1]
[1]Pediatrics department, Hospital Pedro Hispano, Portugal; [2]Pediatrics department, Centro Hospitalar Universitário São João, Porto, Portugal; [3]Pediatrics emergency department, Centro Hospitalar Universitário São João, Porto, Portugal

Background: Henoch-Schonlein purpura (HSP) is a small-vessel vasculitis more common in children with a clinical diagnosis, which includes: palpable purpura, arthralgia/ arthritis, abdominal pain and kidney disease. Therapy is primarily supportive. In severe disease, corticoid therapy should be used; however, it does not appear to impact the clinical course otherwise. The objective of this study was to evaluate the management and clinical course of HSP in a pediatric emergency department

Methods: Retrospective analysis of all admissions in a Portuguese third-level pediatric emergency department with a diagnosis of HSP between 1st January 2014 to 30th June 2021. Statistical analysis was performed considering a significance level of 5%.

Results: 111 patients included: 52.3% male. The mean age at diagnosis was six years, with 45% diagnosed in autumn—median day at presentation: two. The presence of previous viral infection was reported in 36.9% of patients. On admission, 87.4% of children reported purpura, 35.1% arthralgia, 24.3% abdominal pain and 17.1% fever. On examination, purpura was present in 97.3% in lower limbs, 17.1% in upper limbs, 2.7% in the face and 4.5% in the genital region, with associated edema in 54.1%. At presentation, 14.4% had kidney involvement, 8.1% hematuria, 7.2% proteinuria and one case of nephrotic proteinuria. There were no cases of arterial hypertension or acute renal lesion. 22.5% received corticosteroids, and 28.8% were hospitalized, with a mean duration of three days. 23.4% had relapses: 11.7% had one episode, 9% had two, and 1.8% had three. Corticoid therapy and abdominal pain presented a positive association with hospitalization ($p<0.05$). Relapses were associated with the use of corticosteroid therapy (odds ratio: 3.36) and the need for hospitalization (odds ratio: 2.86). There was no correlation between kidney involvement and hospitalization or relapses. 27% of patients were oriented to nephrology and 50.5% to pediatric consultations.

Conclusions: In this study, demographic and epidemiologic spectrum, hospitalization, and relapses rates were similar to the literature. On the other hand, there was found an association between corticoid therapy and hospitalization and relapses, likely due to severe cases.

ID: 321
Oral Presentation
Topics: NEONATOLOGY
Keywords: neurodevelopment, preterm, hydrocephalus, retinopathy of prematurity, neonatal sepsis

Predictors of poor neurodevelopmental outcomes of very preterm and very low birth weight infants

Pissarra, Rita[1]; Pereira-Neto, Bárbara[1]; Miragaia, Pedro[1]; Almeida, Sara[2]; Flor-de-Lima, Filipa[3]; Soares, Paulo[3]
[1]Pediatrics Department, Centro Hospitalar Universitário São João, Porto, Portugal; [2]Psychology Department, Centro Hospitalar Universitário São João, Porto, Portugal; [3]Neonatology Department, Centro Hospitalar Universitário São João, Porto, Portugal

Background: Despite recent improvements in perinatal care with increasing survival, premature infants remain a population at high risk for long-term morbidity and poorer neurodevelopment.

Infants with a gestational age below 32 weeks, very preterm (VP) and born with less than 1500 grams, very low birth weight (VLBW) are more likely to have adverse outcomes.

Methods: Obstetrical and neonatal data on VP and/or VLBW born at a Portuguese level III perinatal centre between 2011-2017, with a neurodevelopmental evaluation at 2 years, were analyzed and compared. Infants with TORCH infections, fetal hydrops, chromosomal abnormalities or major congenital anomalies were excluded. Statistical analysis was performed using IBM SPSS® statistics 26, and a p-value <0.05 was considered statistically significant.

Results: 177 infants included, 54,2% male, 18,6% extreme preterm (below 28 weeks of gestational age) and 23,7% with extreme low birth weight (below 1000 grams). 2 years milestones were not achieved in 18,6% in language domain and 7,3% in motor function, 4,5% wore glasses and 1,1% auditory prosthesis/cochlear implant. Almost 30% needed intervention, 18,6% attended occupational therapy, 16,4% physiotherapy and 13,6% occupational therapy. Griffiths Mental Development Scales was performed in 135, with a mean global quotient of 98,3 and hearing/speech as the least quoted scale. Global development delay (global quotient or at least 3 scales <85) was present in 14,8% and cerebral palsy in 2,8%. The multivariate analysis by logistic regression adjusted to gestational age, birth weight and confounding variables, including cystic leukomalacia periventricular, intraventricular hemorrhage grade ≥3, hemodynamically significant patent ductus arteriosus, bronchopulmonary dysplasia and invasive mechanic ventilation, revealed a statistically significant association between global development delay and hydrocephalus with shunt/reservoir (OR: 19.01), retinopathy of prematurity stage ≥2 (OR: 7.86) and neonatal sepsis (OR: 3.34).

Conclusions: Consistent with other international studies, preterm infants, particularly VP or VLBW, are at increased risk of neurodevelopmental impairment, mainly due to global developmental delay and language delay rather than cerebral palsy. In this population, hydrocephalus, retinopathy of prematurity and neonatal sepsis were strongly associated with poorer neurodevelopmental outcomes. Insight into these factors is essential to refer patients for specific early intervention programs.

ID: 356
Oral Presentation
Topics: COVID-19
Keywords: Child and Youth Health Consultation, vaccination, Covid-19

Child and youth health consultation and vaccination: the reality of a primary care health facility during the covid-19 pandemic

Sousa, Jessica[1]; Pinto, Hélder[2]
[1]Serviço de Pediatria, Centro Hospitalar Tondela-Viseu, Viseu, Portugal; [2]Unidade de Cuidados de Saúde Personalizados de Sete Rios, ACES Lisboa Norte, Portugal

Background: The Covid-19 pandemic has led to the need to restructure healthcare. In Portugal, it was recommended to prioritize in- person child and youth health consultations (CYHC) at the ages of mandatory vaccination, especially in the first year of life. To accomplish the appointment schedule suggested by the National Child and Youth Health Program (NCYHP), telephone appointments were also carried out.

Objective: To assess the impact of the Covid-19 pandemic on CYHC and on the compliance with the National Vaccination Program (NVP).

Methods: Cross-sectional observational study of CYHC and vaccination at a primary care health facility (PCHF) in an urban centre. The analyzed period was March-December 2020 vs 2019.

Results: PCHF with 13599 pediatric users in 2020. There was a 43.6% reduction in in-person CYHC (8972 in 2019 vs 5060 in 2020), mainly in April (889 vs 245) and May (1033 vs 331). On the other hand, there was an increase of 90.8% in non-presential consultation (437 in 2019 vs 4764 in 2020). 69.1% of the in-person consultation were for children under 7-years-old. Regarding vaccination, in December 2020, 98.6% of children up to 2 years-old (vs 99% in 2019), 86.5% of children up to 6 years-old (vs 95.6% in 2019) and 77, 5% of children up to 11 years-old (vs. 81% in 2019) had completed the recommended NVP scheme. In 2020, 94.8% of children had been vaccinated at the recommended age, when evaluated at 3 months old (vs 97.4% in 2019) and 75% of children at 13 months (vs 75.1% in 2019). Nationally, vaccination coverage remained high, exceeding 95% in almost all vaccines up to 7 years old. In terms of vaccination at the recommended age, there was a reduction of 2% compared to 2019.

Conclusions: The reduction in in-person CYHC in 2020 was concomitant with the increase in the number of non-presential consultations (mainly by telephone). Most of the in-person consultations were for children under 7 years old, corresponding to the ages of mandatory vaccination, as recommended. Our centre had more than 98% of children with 2 years old with NVP scheme fulfilled, knowing that children below this age have a greater susceptibility to the diseases targeted by the NVP. Only 75% of children with 13 months had been vaccinated at the recommended age, which alerts us for the need to improve. Overall, despite the challenges that the Covid-19 pandemic brought, positive results were achieved, and the objectives of the NCYHP and NVP were met globally.

ID: 156
Oral Presentation
Topics: GENERAL PEDIATRICS
Keywords: Hearing loss, Pulmonary functions, Respiratory muscle strength.

Evaluation of the effects of hearing loss severity on respiratory functions and respiratory muscle strength

Tuncer, Deniz; Gurses, Hulya Nilgun
Bezmialem Vakif University, Turkey

Introduction: The severity of hearing loss is classified as mild (20-40 dB), moderate (41-55 dB), moderate-to-severe (56-70 dB), severe (71-90 dB), and profound (>90 dB) (1). It was aimed to investigate the effect of hearing-loss-severity on respiratory functions, respiratory muscle strength in children-with-hearing-impairment.

Materials and Methods: Thirty-nine children with prelingual sensorineural hearing loss, 17 (44%) boys and 22 (56%) girls, with a mean age of 11.97±1.86 years, were included in the evaluation. Seven had moderate-to-severe, 13 had severe, and 19 had profound hearing loss. The participants with a mean height of 150.40±12.79 cm, a mean weight of 48.29±14.52 kg, and a mean BMI of 20.99±4.35 kg/cm2 were evaluated with pulmonary function test (FVC, FEV1, FEV1/FVC, PEF) and respiratory muscle strength test (MIP, MEP). SPSS v.20 program was used for data analysis. Data were analyzed using One-Way-ANOVA and posthoc Tukey tests. The significance level was set at $p<0.05$.

Results: According to the ANOVA results, significant differences were found for PEF ($p=0.015$) and MEP ($p=0.042$), and the results of the posthoc Tukey test revealed that there were significant differences between the groups with moderate-to-severe and profound hearing loss ($p=0.011$) for

PEF and moderate-to-severe and severe groups (p=0.032) and moderate-to-severe and profound hearing loss groups (p=0.016) for MEP. No significant differences were found for FVC, FEV1, FEV1/FVC and MIP (p>0.05).

Conclusion: It was observed that among the cases in which only significant differences were found in PEF and MEP according to the severity of hearing loss, this was associated with the severity of the loss. These values were lower in the groups where the severity of loss was high.

Discussion: It was reported that hearing-impaired individuals initiate phonation in inappropriate lung volumes and speak in a limited lung volume range (2). Low PEF in hearing-impaired children is explained by limitations in verbal language acquisition (3). Strength and coordination of expiratory muscles are major determinants of PEF and MEP. We think there is a need for studies examining the effect of hearing loss severity on pulmonary functions and respiratory muscle strength in hearing-impaired children. It may be beneficial to include these children in appropriate physiotherapy-rehabilitation programs.

ID: 128
Oral Presentation
Topics: NUTRITION & DIETS
Keywords: Infant formula

Term infant formula containing a diverse blend of five human milk oligosaccharides supports age-appropriate growth, is safe and well-tolerated: A double-blind, randomized controlled trial

Bauer, Viktor[1]; Arciszewska, Malgorzata[2]; Tarneva, Maria[3]; Dosev, Svilen[4]; Sirma, Dimitrova[5]; Olga, Nikolova[6]; Nowak, Marzena[7]; Szuflinska-Sidorowicz, Magdalena[8]; Korczowski, Bartosz[9]; Karcheva-Beloeva, Rositsa[10]; Banov, Stefan[11]; Cimoszko, Boguslawa[12]; Olechowski, Wieslaw[13]; Tokodi, Istvan[14]; Simko, Robert[15]; Krasnow, Aleksander[16]; Tengelyi, Zsuzsanna[17]; Korbal, Piotr[18]; Zolnowska, Marta[19]; Bilev, Anton[20]; Vasilopoulos, Georgios[21]; Korzynska, Sylwia[22]; Bosheva, Miroslava[23]; Laki, István[24]; Koleva-Syarova, Margarita[25]; Grigorov, Toni[26]; Kraeva, Steliyana[27]; Kovács, Éva[28]; Markova, Rada[29]; Jasieniak-Pinis, Grazyna[30]; Fister, Katalin[31]; Grathwohl, Dominik[32]; Sprenger, Norbert[32]; Bettler, Jodi[33]; Cercamondi, Colin Ivano[33]; Stoeva, Tatyana[34]
[1]Dr. Kenessey Albert Korhaz-Rendelointezet, Balassagyarmat, Hungary; [2]Poliklinika Ginekolo - Poloznicza, Bialystok, Poland; [3]UMHAT Deva Mariya – Neonatology, Burgas, Bulgaria; [4]Medical Center Prolet EOOD - Pediatrics department, Ruse, Bulgaria; [5]Medical Center Excelsior, Sofia, Bulgaria; [6]MHAT Sveti Ivan Rilski, Kozloduy, Bulgaria; [7]Centrum Medyczne PROMED, Krakow, Poland; [8]Centrum Medyczne Pratia Warszawa, Warszawa, Poland; [9]College of Medical Sciences, University of Rzeszów, Rzeszów, Poland; [10]Medical Center-1-Sevlievo EOOD – Gastroenterology, Sevlievo, Bulgaria; [11]SMA Dr Stefan Banov, Stara Zagora, Bulgaria; [12]Clinical Vitae Sp. z o.o., Gdansk, Poland; [13]ALERGO-MED, Tarnow, Poland; [14]Mentaház Magánorvosi Központ Kft., Székesfehérvár, Hungary; [15]Futurenest Kft., Miskolc, Hungary; [16]Gdanskie Centrum Zdrowia Sp. z. o.o., Gdansk, Poland; [17]Clinexpert Gyógycentrum, Budapest, Hungary; [18]Szpital Uniwersytecki nr 2 im dr. Jana Biziela, Bydgoszcz, Poland; [19]Centrum Medyczne Plejady, Krakow, Poland; [20]MC Sveti Ivan Rilski – Chudotvorets, Blagoevgrad, Bulgaria; [21]Centrum Innowacyjnych Terapii Sp. z o.o., Piaseczno, Poland; [22]Centrum Medyczne Pratia Ostroleka, Ostroleka, Poland; [23]UMHAT Sveti Georgi, Plovdi, Bulgaria; [24]Kanizsai Dorottya Korhaz, Nagykanizsa, Hungary; [25]DCC Rhythm, Stara Zagora, Bulgaria; [26]MHAT City Clinic - Sveti Georgi EOOD - Pediatrics, Montana, Bulgaria; [27]Medical Centre Alitera-MED EOOD, Sofia, Bulgaria; [28]Házi Gyermekorvosi Rendelő /Babadoki Kft., Szeged, Hungary; [29]Policlinic Bulgaria - Department of pediatrics; Sofia, Bulgaria; [30]NZOZ ATOPIA, Krakow, Poland; [31]Bugát Pál Kórház - Gyermekgyógyászati Osztály, Gyöngyös, Hungary; [32]Nestlé Research, Société des Produits Nestlé S.A., Lausanne, Switzerland; [33]Nestlé Product Technology Center - Nutrition, Société des Produits Nestlé S.A., Vevey, Switzerland; [34]Medical Center - Izgrev Ltd., Sofia, Bulgaria

Background/Aims: Breastmilk is abundant in structurally diverse human milk oligosaccharides (HMOs). Scientific evidence shows HMOs have different biological functions important for healthy development in early life. This trial evaluated growth, safety and tolerance in infants fed an infant formula containing a blend of five HMOs: 2'-fucosyllactose, 2',3-di-fucosyllactose, lacto-N-tetraose, 3'- sialyllactose, and 6'-sialyllactose. The blend contains five major HMOs, representing the most abundant type from each structural category and is based on the profile naturally found in breastmilk.

Methods: In a multicenter study, healthy formula-fed (FF) infants (≥7 to ≤21 days old) were randomly assigned to a standard cow's milk-based infant formula (Control); the same formula with 1.5 g/L HMOs (Test1); or with 2.5 g/L HMOs (Test2). Data was analyzed up to age 6-months for 686 FF infants (n=230 in Control; n=229 in Test1; n=227 in Test2) and 96 non-randomized breastfed reference infants (BF). The primary endpoint was weight gain through age 4 months in FF infants. Secondary endpoints included additional anthropometric measures, stooling pattern, gastrointestinal (GI) tolerance and associated behaviours via 3-day parent diary and validated Infant Gastrointestinal Symptom Questionnaire (IGSQ; index range 13-65), and adverse events (AEs) in all feeding groups.

Results: Weight gain was non-inferior in the test groups compared with control as shown by the lower bound of the 95% confidence interval (CI) that was above the non-inferiority margin (-3 g/day) for both test groups (mean difference (95%CI) Test1 vs Control =0.80 (-0.49, 2.08) g/day; and Test2 vs Control =0.26 (-1.03, 1.55) g/day). Z-scores for weight-for-age, length-for-age, weight-for-length and head circumference-for-age were comparable among FF groups and tracked closely with WHO growth standards. Overall, stool frequency and consistency were similar among FF groups with softer stools at age 2-months in a test group: mean difference in stool consistency scores (95%CI) Test1 vs Control =-0.11 (-0.21, -0.01; p=0.038). Comparable with BF, 70-76% of infants in the test groups had predominantly loose/soft stool throughout the exclusive feeding period (Control: 66-68%). Throughout the study, parent-reported difficulties in stooling, GI symptoms (spit-up, gassiness) and behavioural patterns (crying, fussiness, sleep, gassiness) were comparable in FF groups and largely similar as in BF. IGSQ indexes at 6 months were <19 in FF groups and comparable with BF, indicating good GI tolerance. Parent-reported and physician-confirmed AEs were low and similar between groups.

Conclusions: Infant formula supplemented with a unique blend of five HMOs supports age-appropriate growth and soft stooling pattern, is safe and well-tolerated.

ID: 318
Oral Presentation
Topics: ALLERGY, IMMUNOLOGY & RESPIRATORY
Keywords: Asthma, Viral Induced Wheeze, Audit, Documentation

Audit of paediatric asthma pro-forma uptake: improving emergency department documentation

Aung, Yuri; Kucheria, Anushree; Benzaken, Tami; Lemaigre, Alex; Blair, Mitchel
London North West University Healthcare NHS Trust, United Kingdom

Introduction: Around 1 million children in the United Kingdom are receiving treatment for asthma. Moreover, asthma and viral-induced wheeze make up a large demographic of paediatric emergency department attendances, with up to 20% of asthmatic children attending annually. A thorough clerking of paediatric asthma cases should include peak flow monitoring (PEFR), an asthma control assessment (ACA), and clearly documented discharge plans, including patient education and asthma care follow-up in the community to prevent further emergency department attendances. Having a standardised structured proforma has been shown to increase the

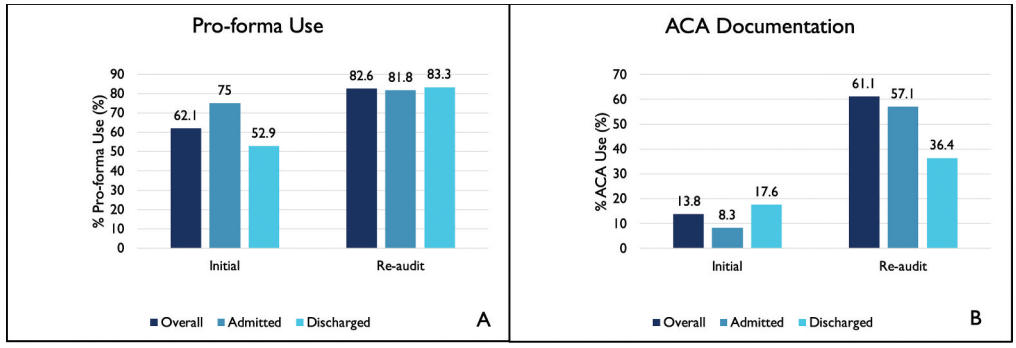


Figure 1. This figure comprises of two graphs, (a, b). (a) compares use of the asthma proforma between the initial audit and the re-audit. (b) compares Asthma Control Assessment completion between the intial audit and the re-audit.

efficiency of clerking and handovers, therefore ensuring better patient care. The objective of this audit was to identify the adequacy of paediatric emergency department documentation using preexisting asthma proforma and then evaluate for any improvement after introducing a clearer and more standardised proforma in a busy district general hospital.

Methods: The initial audit assessed the asthma proforma documentation of 29 randomly selected patients admitted to a district general hospital with asthma or viral-induced wheeze from March to May 2021. Specifically, we looked at their use of the proforma in general as well as PEFR and ACA documentation. We then implemented a new proforma and re-audited all 27 patients admitted from July to August 2021. The updated proforma also included a discharge checklist for patients discharged from the emergency department, looking into whether appropriate community nurse referrals had been made and whether patients had been given clear going-home plans on asthma management.

Results: Overall proforma uptake improved by 20.5% with the new proforma, from 62.1% (18/29) using the proforma initially to 82.6% (19/23) after (Figure 1). ACA documentation was also improved by 47.3%, from 13.8% (4/29) to 61.1% (11/18). Where there was no PEFR documentation in the initial audit, the re-audit showed an increased PEFR documentation of 16.7% (3/18). 41.7% (5/12) of discharged patients had documented discharge checklists.

Discussion: In conclusion, there was improved proforma use, ACT and PEFR documentation with the updated proforma, although notably, the PEFR documentation rate remained low overall. The addition of a discharge checklist looking into community follow-up and patient education also aimed to reduce unnecessary further emergency department attendances. Given the high burden of asthma admissions on paediatric emergency services, the implementation of such proformas may aid clear documentation and adequate referral for follow-up, with planned improvements to be made to this proforma to increase its full completion in future.

ID: 166
Oral Presentation
Topics: GENERAL PEDIATRICS, COVID-19
Keywords: COVID 19, PCR positive, PCR negative

Clinical presentation of and differences between COVID-19 RT-PCR-positive and RT-PCR-negative pediatric patients

Saleh, Maysa
DHA, United Arab Emirates

Introduction: SARS-CoV-2, the cause of the coronavirus virus disease 2019 (COVID-19), has been reported to be less invasive in pediatrics than in adults. Pediatric patients presented with COVID-

19-related clinical symptoms might test negative or positive in the RT-PCR. This study investigated sought to (1) understand differences between COVID-19-RT-PCR-positive and COVID-19-RT-PCR-negative pediatric patients and (2) explore factors associated with severity of the disease at presentation and (3) factors associated with duration of hospitalization.

Aim: To assess the clinical presentations, the severity of COVID 19 and its outcomes in the pediatric age group.

Methods: Medical charts of all pediatric patients with confirmed (RT-PCR-positive) and suspected (RT-PCR-negative) COVID-19were reviewed. Information on sociodemographics, clinical presentation, RT-PCR testing, blood testing, liver function tests, imaging, and clinical outcomes were retrieved and analyzed. Descriptive and inferential analyses were performed to understand differences between pediatric patients with confirmed (RT-PCR-positive) and suspected (RT-PCR-negative) COVID-19 and explore factors associated with the severity of the diseases and the duration of hospitalization.

Results: Twenty-eight (16.1%) of whom were positive to COVID-19 RT-PCR, while 83.8% were negative in the RT-PCR test. There was also no significant difference in the reported symptoms by the RT-PCR positive and negative patients. The most common symptoms were fever (100% vs 91.0%),cough (100% vs 95.9%), difficulty in breathing (39.3% vs 35.9%), and abdominal pain, diarrhea, or vomiting (32.1% vs 44.8%), in PCR positive versus PCR negative patients. The mean concentration of neutrophils was slightly elevated (4.7 ± 3.4 /10^3/ll), and it was significantly higher (p=0.019) in RT-PCR-negative compared to the RT-PCR-positive group (mean difference 1.4 ± SD?? /10^3/ll). The mean concentration of the C-reactive protein (CRP) was very high (30.2 ± SD 47.1), with a significantly higher mean concentration observed in RT-PCR-negative (33.1 ± SD 47.8 mg/L) compared to RT-PCR-positive (15.2 ± SD 40.4 mg/L) (P = 0.043). The proportion of the RT-PCR-negative patients (69.7%) with an elevated CRP was 2.4-time higher compared with RT-PCR-positive (28.6%) patients. On average, within 24 to 36 hours of admission, the mean ferritin level elevated by 18.0 ± SD 100.3 µg/l, with no significant difference (p=0.928) in the elevated ferritin level between RT-PCR-negative and positive patients. Oxygen was needed by the majority of RT-PCR-positive (96.4%), and negative (95.9%) patients, but the mean duration of oxygenation was statistically longer in positive (5.8 ± 2.4 days) compared to negative (3.5 ± 1.4) patients (p<0.001). Hospital length of stay was 1.83-time for the RT-PCR-positive (6.6 ± 4.6 days) compared with RT-PCR-negative (3.6 ± 1.4 days) patients (p = 0.002). Overall, 78.6% while 43.4% of RT-PCR-positive and RT-PCR-negative patients were hospitalized for ≥ 4 days (p=0.001).

Conclusion: The clinical course of COVID-19 positive PCR in the pediatric population is usually mild or asymptomatic and is comparable to those with negative PCR

ID: 307
Oral Presentation
Topics: EMERGENCY PEDIATRICS
Keywords: Avulsion, Dental Trauma, Guidelines, Permanent tooth avulsion

Permanent tooth avulsion and management in the Paediatric Emergency Department - a guideline review

Hesketh, Patrick
Royal Free London NHS Foundation Trust, United Kingdom

Background and Objective: Permanent tooth Avulsion is a common injury sustained by paediatric patients. It is a time-sensitive emergency clinical scenario, with literature showing strongly that survival of the pulp and long term prognosis of the tooth are both linked to early treatment and re-

implantation of the tooth. This project aimed to review guidelines that exist for the management of permanent tooth avulsion, assess how clear and useful they are, and assess knowledge and confidence amongst Paediatric Emergency Department staff.

Methods: A literature search was undertaken using Pub- Med, Medline and EMBASE databases using the term 'Tooth avulsion guidelines'. Using results from the literature review, a single A4 page guideline aimed at managing permanent tooth avulsion within Paediatric Emergency Departments was developed. Questionnaires were developed to assess knowledge and confidence amongst Paediatric Emergency Department staff when faced with a permanent tooth avulsion. These were repeated following the development of the guideline.

Learning Points Discussion: 18 papers and guidelines from specialist Dental Trauma societies and charities were reviewed, and the overwhelming consensus is that guidance provided by the International Association of Dental Trauma (IADT) is the evidence-based gold standard. Their guidelines on managing a tooth avulsion are thorough and include both immediate management and long term follow-ups. They will be of use to a Dental Practitioner, but in a Paediatric Emergency Department, the guidelines may involve too many specialised dental technical terms to be considered easily accessible. We found that confidence at managing a tooth avulsion is low among Paediatric Emergency Department staff. Only 20% said they would be confident at managing such an injury without outside guidance. Prompt treatment is associated with higher survival rates of permanent teeth. On the contrary, if treatment is delayed and the tooth is lost, this is associated with a significant, lifelong dental treatment burden for the patient and associated psychological trauma of losing a front tooth. We propose an updated guideline in the form of a single guidance sheet for Paediatric Emergency Departments. This will provide a quick reference guide for the initial management of permanent tooth avulsion, specifically aimed at health professionals who are not dentists, suitable for all levels of staff. A staff survey found that 90% felt more confident managing permanent tooth avulsion with the above guideline.

ID: 315
Oral Presentation
Topics: NEONATOLOGY
Keywords: aspirin, preeclampsia, prophylaxis, premature

Use of aspirin prophylaxis during pregnancy in Puerto Rico to prevent risk of preeclampsia: preliminary findings.

Rodriguez Maldonado. MD, Luis Miguel[1]; Arce Cardona. MD, Sylvia[8,9]; Bruckman Blanco. MD, Wilmarie[10]; Claudio Figueroa. MD, Norma[1]; De Jesus Hernandez, Liz[2]; Fargas Berrios. MD, Neichma[5]; Figueroa Maisonet. MD, Lydia L[7]; Frontanes Heredia. MD, Abymael[3]; Fulcar Matos, Mayeline[2]; Garcia Fragoso. MD, Lourdes[1]; Garcia Garcia. MD, Ines[1]; Garcia Tormos. Ed.D. CCC-SLP, Lourdes[1]; Gely Rojas. MD, Leticia[4,5,6]; Gonzalez Mendez. PhD, Ricardo[1]; Guzman Pereira. MPH, Jose[1]; Guzman Vazquez, Joann[2]; Lugo Lopez, Karla[2]; Maysonet Pastrana, Maria[2]; Nieves Ferrer, Sharon[2]; Torres Sotomayor, Jilibeth[2]
[1]University of Puerto Rico, Medical Sciences Campus, School of Medicine, Puerto Rico (U.S.); [2]University of Puerto Rico, Rio Piedras Campus; [3]Hospital Menonita Cayey; [4]Manati Medical Center; [5]Bayamon Medical Center; [6]Mayaguez Mediacal Center; [7]Hospital San Juan; [8]Hospital San Carlos Borromeo, Moca; [9]Hospital San Antonio, Mayaguez; 10Hospital San Cristobal

Introduction: In 2019, there were 20,409 live births in Puerto Rico with an 11.9% premature birth rate. One of the risk factors for premature birth is preeclampsia, present in 4.8% of pregnancies. Low-dose aspirin reduces the risk of preterm birth (before 37 weeks) by 11% and early preterm birth (before 34 weeks) by 25% among first-time mothers. This study aimed to determine the

maternal risk level for preeclampsia and determine if the recommendation of low-dose aspirin use is promoted in pregnant women with risk factors.

Methods: Cross sectional study of 2,000 post-partum mothers in Puerto Rico. Eligible mothers were contacted in person or by telephone to complete a questionnaire. Written consent was obtained. Excel and Statistix 8.0 were used for analysis. IRB approved (0420319).

Results: A total of 520 mothers of newborns delivered at participating institutions were recruited. Aspirin was recommended to 31.5% of participants, and 28.8% used it during pregnancy. A significant number of women at risk of preeclampsia (41%) used low dose aspirin (81mg/day) after 16 weeks of pregnancy. The most common risk factors to recommend prenatal aspirin were autoimmune disease (80%), history of preeclampsia (60%), multiple gestation (59%), obesity (58%), hypertension (56%), renal disease (42%) and black race (34%).

Conclusion: In this group of participants, we identified multiple risk factors for developing preeclampsia. A significant number of mothers did not start the prophylaxis in a timely manner. The reinforcement on the low dose aspirin use will reduce the risk of preeclampsia from 4.3% to 3.6%, hence decreasing the risk for prematurity in 107 to 245 live births. These results suggest that there is still room for offering the right tools for women with risk factors for preeclampsia into seeking aspirin prophylaxis in future pregnancies.

ID: 176
Oral Presentation
Topics: NEUROLOGY
Keywords: Epilepsy-aphasia spectrum, Sulthiame, Continuous spikes and waves during sleep

The use of sulthiame in epilepsy-aphasia spectrum cases: an alternative approach

Pereira-Nunes, Joana[1]; Pinto, Maria João[2]; Sousa, José Maria[3]; Fonseca, Jacinta[1,4]; Melo, Cláudia[1,4]; Alves, Dílio[5]; Sampaio, Mafalda[1,4]; Sousa, Raquel[1,4]
[1]Department of Pediatrics, Centro Hospitalar Universitário São João, Porto, Portugal; [2]Department of Neurology, Centro Hospitalar Universitário São João, Porto, Portugal; [3]Department of Neuroradiology, Centro Hospitalar Universitário São João, Porto, Portugal; [4]Pediatric Neurology Unit, Department of Pediatrics, Centro Hospitalar Universitário São João, Porto, Portugal; [5]Department of Neurophysiology, Centro Hospitalar Universitário São João, Porto, Portugal

Background: The epilepsy-aphasia spectrum, which includes childhood epilepsy with centrotemporal spikes (CECTS), continuous spikes and waves during sleep (CSWS) and Landau-Kleffner syndrome (LKS), has been increasingly associated with mutations in the GRIN2A gene. This gene encodes the GluN2A protein, which constitutes a subunit of a subgroup of NMDA receptors. Sulthiame is often used in Europe in CECTS as monotherapy or as add-on therapy in CSWS. In Portugal, its use implies previous approval by the National Drug Health Products Authority, currently known as Infarmed.

Case Presentation Summary: A 5-year-old female presented with focal seizures with bilateralization. Her previous medical history was unremarkable, but she had a significant family history of epilepsy. An electroencephalogram (EEG) was performed and revealed right centrotemporal epileptiform activity. She was diagnosed with CECTS and medicated with valproic acid (VPA). At the age of 6, she started presenting learning difficulties. The EEG was repeated and revealed a pattern suggestive of CSWS. During the next 10 months, prednisolone was associated with VPA. She recovered her baseline status, and her new EEG was normal. One month after stopping the corticosteroids, she developed progressive aphasia. Once again, a CSWS pattern was identified in video-EEG monitoring, which led us to restart prednisolone (2 mg/kg/day), with significant clinical

and electrographic improvement. Twelve months after a period of continuous steroid therapy, she presented significant adverse effects. After considering other alternatives, prednisolone was stopped, and she started on sulthiame (5 mg/kg/day), combined with VPA (35 mg/kg/day). Two years later, our patient is keeping the same therapy, remaining clinically stable. She did not have any other seizure or CSWS pattern recurrence. She maintains residual language deficit and slight learning difficulties. A pathogenic variant of the GRIN2A gene has been identified.

Discussion: The recurrence of CSWS, combined with the language deficit maintenance and corticosteroid therapy's adverse effects, led us to search for other therapeutical alternatives with better tolerability. The use of sulthiame allowed stopping prednisolone and the patient's stability over the last few years. Considering its mechanism of action, sulthiame appears to be an interesting treatment in the epilepsy-aphasia spectrum cases associated with mutations in GRIN2A.

ID: 145

Oral Presentation

Topics: INFECTIOUS DISEASES, ALLERGY, IMMUNOLOGY & RESPIRATORY, NEONATOLOGY

Keywords: microbioma, non-invasive diagnostics, volatile organic compounds, IMS, premature infants

Smelling the gut microbioma using ion mobility spectrometry coupled to multi-capillary columns in neonatology: a proof-of principle study

Bous, Michelle[1]; Kaiser, Elisabeth[1]; Stutz, Regine[1]; Wulff, Anika[2]; Baumbach, Jörg Ingo[2]; Zemlin, Michael[1]; Goedicke-Fritz, Sybelle[1]

[1]Department of General Pediatrics and Neonatology, Saarland University Medical School, Homburg, Germany; [2]Center of Competence Breath Analysis, Branch Dortmund, B. Braun Melsungen AG, Melsungen, Germany

Background: The imbalance of bacterial gut colonization was found to be associated with many diseases. Nonetheless, microbiome analysis is rarely used as a routine procedure and can only be performed in specialized laboratories. We want to test whether ion mobility spectrometry coupled to multi-capillary columns (MCC/IMS) is suitable as a quick and non-invasive tool of microbiome analysis using volatile organic compounds (VOCs). VOCs are produced in the body during metabolic processes and are released into the environment via the skin, exhaled air and excrements. Besides, we want to investigate whether VOCs profiles in diapers (i.e., in stool and urine) are individual for each subject.

Material and Methods: We analyzed VOCs profiles of 133 stool and urine samples of 12 premature infants by ion mobility spectrometry coupled to multi-capillary columns (MCC/IMS). We included neonates hospitalized at Saarland University Medical Center (Homburg, Germany) with a birth weight < 2,000 g and a gestational age < 32 weeks. Statistical analysis was performed using VisualNow v3.7 (B&S Analytik GmbH, Dortmund, Germany) and Mann-Whitney U-test.

Results: It was possible to distinguish between twins and quadruplets based on their diapers´ VOCs-profile using MCC/IMS with a significance level of $p < 0.05$. Substances of the VOCs profile that could be assigned to be metabolites of bacterial strains were identified.

Discussion: Twins and quadruplets can be distinguished by ion mobility spectrometry coupled to multi-capillary columns (MCC/IMS). Therefore, we assume VOCs profiles to be individual for every person. Focusing on the fecal composition, we found the substance 2- Methylthio-Ethanol that is assigned to be a metabolite of Escherichia coli. Nevertheless, many influences on the VOCs profile and the gut microbiome must be considered, such as technical circumstances, drug application,

feeding type and delivery mode. MCC/IMS is a quick, precise and non-invasive method to analyze biosamples. Hence, MCC/IMS must be considered as a non-invasive diagnostic tool in the future.

ID: 330
Oral Presentation
Topics: GENERAL PEDIATRICS, COVID-19
Keywords: COVID-19, Child Protection

The incidence and characteristics of inpatient child protection concern cases during the COVID-19 lockdown

Bell, Valerie[1]; McCann, Aisling[2]; Power, Claire[2]; Gilchrist, Eimear[1]; O'Byrne, Helen[2]; McGowan, Catherine[1]; Roulston, Jean[2]; McCrory, Sheila[1]; Curtis, Emma[2]; Harty, Sinead[1]
[1]Children's Health Ireland at Crumlin, Ireland; [2]Children's Health Ireland at Tallaght, Ireland

Background: Known risk factors for child maltreatment, including parental unemployment and domestic violence (1, 2), were compounded by social isolation from school closures and restriction of home visitors during the COVID-19 lockdown. Data on the incidence of child maltreatment during the pandemic is limited.

Aim: Our study aimed to compare the incidence of and characterize the types of child protection concerns among inpatients during the 2020 lockdown versus the same period in 2019.

Methods: We carried out a retrospective chart review of inpatients at Children's Health Ireland (CHI) at Crumlin and CHI at Tallaght assessed for child protection concerns during the lockdown from March 13 to August 31, 2020, and the same timeframe in 2019.

Results: Fewer patients with child protection concern were admitted in 2020 (n=86) compared to 2019 (n=163). Total admissions were also less in 2020 (n=4609) compared to 2019 (n=7728). Patients assessed for child protection concerns accounted for a smaller percentage of inpatients in 2020 (1.8% versus 2.1% in 2019 (p=0.35)). In 2020, there was a greater percentage of physical (52.3% versus 11% in 2019 (p<.001)) and emotional (6.9% versus 1.2% in 2019 (p=0.014)) abuse concern cases. There was also a greater percentage of neglect and sexual abuse concern cases and a lower percentage of welfare concern cases in 2020, but these differences were not statistically significant. The cases in 2020 were more complex, with 48.8% involving more than one concern type per case versus 13.4% in 2019 (p<.001). Child protection concerns increased steadily during the lockdown, peaking in July. In 2020, there were more unwitnessed injuries (34.8% versus 17.7% in 2019 (p=.002)) and parental use of physical discipline (6.9% versus 0.6% in 2019 (p=.003)). No statistically significant differences in delayed presentation and domestic violence were observed.

Conclusions: While fewer inpatients were assessed for child protection concerns during the 2020 lockdown versus 2019, the 2020 cases were more complex. An increase in physical and emotional abuse concerns, unwitnessed injuries and physical disciplining highlights child protection issues specific to the pandemic.

ID: 371
Oral Presentation
Topics: GENERAL PEDIATRICS, PUBLIC HEALTH, COVID-19
Keywords: Vaccine, COVID-19, Influenza

An assessment of parental vaccine hesitancy in an Irish inpatient cohort in the context of the COVID-19 pandemic and influenza vaccination strategies

Joyce, Robert; McNerney, Orla; O'Donnell, Sinead; Donnelly, Jean
Children's Health Ireland at Crumlin, Ireland

Background: There is little data available on vaccine hesitancy rates in Irish parents, particularly in relation to the influenza vaccine (InV). Evidence to date would suggest that the morbidity from COVID-19 is lower in paediatric populations than that from influenza. Vaccination strategies are likely to be required for both infections, and as such, understanding parental perception of both vaccines is essential.

Aims: We hoped to identify vaccination hesitancy rates for routine childhood vaccines (RCV) and for the influenza vaccine (InV). We then sought to identify intended uptake rates of the InV and any potential paediatric COVID-19 vaccine and review this data to try to identify trends in vaccination perceptions.

Methods: A 10 item anonymised questionnaire was distributed to parents of all patients admitted under the General Paediatric team in a large tertiary centre in Dublin for 4 weeks during November 2020. Results were compiled and analysed, with scoring averages used to determine perceived vaccine efficacy scores (PVES) from a minimum of 1 to a maximum of 5 amongst the population and its subgroups.

Results: A total of 214 questionnaires were analysed. The average age was 59.45 months, with the median being 34 months. Of those due to have commenced their RCV schedule, 92.98% were up to date, with 2.7% having received no vaccinations. The average PVES for RCV and the InV was 4.67 and 4.31, respectively.

Of those eligible to receive the InV this year (n=143), 37.8% were either very likely or likely to receive the vaccine, with 47.6% unsure, unlikely, or very unlikely. PVES decreased steadily with increasing hesitancy, to a nadir of 4.13 for RCH and 3 for the InV in the very unlikely subgroup. The average likelihood to receive a COVID-19 vaccination, if one were available, was 3.67. Only 23.83% were likely or very likely to vaccinate against influenza and COVID-19 simultaneously. With regards to preferable vaccination, 22.9% would prefer COVID-19 vaccination, 20.56% would prefer Influenza vaccination, 41.59% had equal preference, and 13.55% wanted neither.

Discussion: Our study showed high PVES for both RCV and InV as well as high vaccination rates, but comparatively low intended rates of uptake of the Influenza vaccine and a potential COVID-19 vaccination. More research as to the reasoning behind this is needed in order to plan potential vaccination strategies.

ID: 372
Oral Presentation
Topics: ALLERGY, IMMUNOLOGY & RESPIRATORY, COVID-19
Keywords: Cystic Fibrosis, COVID-19, Virtual OPD

Virtual paediatric cystic fibrosis clinics in response to the COVID-19 pandemic and the patient response; An Irish single centre experience

Joyce, Robert[1]; Cox, Des[1,2]
[1]Children's Health Ireland at Crumlin, Dublin; [2]School of Medicine, University College Dublin, Dublin

Background: The COVID-19 pandemic posed unique challenges in the delivery of patient care across all subspecialties, including the paediatric cystic fibrosis (CF) service. In our Irish tertiary centre we sought to utilise technology to deliver the same standard of care to our patients whilst minimising their COVID-19 exposure risk.

Methods: We established virtual CF outpatient appointments consisting of a consultant phone-call and subsequent contact with the different members of the multi-disciplinary team (MDT). Our "Drop-In" review service continued, with COVID-19 precautions added. Patient experiences of these clinics were evaluated using a five-point online questionnaire issued to parents at the end of 2020.

Results: We achieved a response rate of 82 out of 125 (65.6%). A total of 50/82 (61%) found it "easy" to maintain contact with the CF team, with 7/82 describing it as either "somewhat difficult" or "difficult". In terms of OPD satisfaction as an alternative to face-to-face medical review, 67/82 (81.7%) described themselves as either "satisfied" or "somewhat satisfied" with the clinics. Only 2/82 (2.4%) were "dissatisfied" with the OPDs. A total of 66/82 (80.5%) felt it would be helpful to retain an element of the clinics going forward. The majority of respondents, 53/82 (64.6%), said that the pandemic had "no real effect" on their likelihood of attending for an in-person medical review, with 14/82 (17.1%) saying they were "much less likely" to attend. Only 3/82 were "more likely" to attend.

Individualised comments were varied, with the increased use of technology, anxiety regarding COVID-19 exposure, and a desire to avoid the hospital, all frequent themes.

Conclusion: Our results and feedback indicated a consistent parental desire to avoid the hospital and the perceived infection risk during the pandemic. However, our clinic arrangements did not increase parental feelings of isolation. The potential use of these clinics in conjunction with face-to-face visits should be considered as a viable option in paediatric CF outpatient management.

ID: 167
Oral Presentation
Topics: GENERAL PEDIATRICS, COVID-19
Keywords: COVID 19, RSV, viral infection

SARS-COV-2 Versus other viral respiratory infection : a comparative-analytical study of clinical spectrum in children

Saleh, Maysa
DHA, United Arab Emirates

Background: Since the beginning of the COVID 19 pandemic, the clinical presentation in children has ranged from asymptomatic to critically ill. Though symptoms are similar in both children and adults, the children course is milder. The typical presentation of Covid 19 in children is fever and cold-like symptoms that could be the same as other viral infections. To date, limited studies compare clinical characteristics and course of illness in children with COVID 19 versus other viral respiratory infections. Pulmonary infections, especially viral infections, remain a major cause of infant and child mortality worldwide and are responsible for a substantial burden of morbidity.

Aim: To identify the spectrum of clinical presentations, the severity of COVID-19 and its outcomes in the pediatric age group compared to other viral respiratory infection

Methodology: All children were subjected to complete history taking, clinical examination, and evaluation length of stay, hospital course ward. Laboratory investigations, if available, including FBC, CRP, Procalcitonin, Ferritin, D-Dimer, PT, PTT, LDH, Liver function test and creatinine.Novel coronavirus PCR, Respiratory virology panel (if available). Chest x-ray if available, CT if available

Results: Total number of patients studied was 429 children, —105 children, with COVID 19 and 324 children with other viral infections. Most of the viral infections were unidentified. RSV contributes to

5% of the viral infection in children who were < 2 years of age. The most common symptom of children with COVID 19 was fever. The clinical course of these children was mild.

Conclusion: We conclude that the clinical course of COVID-19 in children is usually mild or asymptomatic. Children with other viral infections may have comparable or sometimes more aggressive course than COVID 19.

ID: 271

Poster Presentation

Topics: GENERAL PEDIATRICS, DERMATOLOGY, RHEUMATOLOGY

Keywords: acne fulminans, sacroiliitis

Acne fulminans and sacroiliitis: part of the same problem?

Pereira Neto, Barbara[1]; Feio, Ana[2]; Faria Dias, João[2]; Vieira, Clara[2]; Vieira, Ana Paula[3]; Fonseca, Paula[2]; Carvalho, Sonia[2]

[1]Pediatrics Department, Centro Hospitalar Universitário de São João, Portugal; [2]Pediatrics Department, Centro Hospitalar do Médio Ave, Portugal; [3]Dermatology Department, Hospital de Braga, Portugal

Background: Sacroiliitis and acne fulminans have been described as presentations of the same diseases. On the one hand, sacroiliitis can be a manifestation of inflammatory or infectious disease, as well as an adverse effect of some drugs. On the other hand, acne fulminans can present with systemic symptoms and, in some reported cases, can be associated with inflammatory diseases and can also be secondary to isotretinoin.

Case Presentation Summary: 17-year-old male teenager, admitted for left lumbosacral pain, which irradiated to the posterolateral side of the thigh, during the previous two weeks, associated with progressive walking inability and one spike of low-grade fever (38ºC at admission). He had been medicated with isotretinoin for nodulocystic acne for the previous two months. Laboratory workup showed neutrophilia and raised sedimentation rate (max 29 mm/h) and C-Reactive Protein (max 8,61 mg/dL). Lumbar spine and hip CT revealed a slight posterior disk protrusion between L3 and S1. Lumbar and sacroiliac MRI showed bilateral sacroiliitis, mainly on the left side. Bone scintigraphy described drug hyperfixation on the left sacroiliac joint. On day one (D1) of admission, naproxen was started and, due to clinical and analytical worsening, flucloxacillin was added on D3, while still maintaining treatment with isotretinoin. On D6, due to the persistence of pain and the worsening of the acne lesions (inflammatory nodulocystic lesions, with hemorrhagic crusts – acne fulminans), oral corticotherapy was initiated. An immediate improvement was observed, and the patient was discharged on D9, without joint pain and normal laboratory results. He completed five weeks of antibiotics. No etiologic agent was identified, and Rheumatoid Factor, ANA and HLA-B27 dosing were negative.

Discussion: Simultaneous occurrence of acne fulminans, with pustulosis, and sacroiliitis, although already described, is a rare combination of manifestations, thus making this an interesting case to report. Diagnosis is yet to be confirmed. As of yet, the main hypothesis remains a systemic presentation of acne fulminans. However, the imagological and clinical evolution will distinguish between infectious or inflammatory diseases, such as juvenile spondyloarthropathy or SAPHO syndrome – Synovitis, Acne, Pustulosis, Hyperostosis and Osteitis.

ID: 256

Poster Presentation

Topics: GENERAL PEDIATRICS, RHEUMATOLOGY, ADOLESCENT MEDICINE

Keywords: type 1 complex regional pain syndrome, adolescent, pain

Complex regional pain syndrome – a challenging diagnose

Leite-Almeida, Laura[1]; Resende, Maria Miguel[2]; Luís, Telma[2]; Silva, Sónia Regina[2]; Mendes, Bruno[3]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal, Portugal; [2]Department of Pediatrics, Centro Hospitalar do Baixo Vouga, Aveiro, Portugal; [3]Department of Physical Medicine and Rehabilitation, Centro Hospitalar do Baixo Vouga, Aveiro, Portugal

Background: Complex regional pain syndrome (CRPS) is a rare pain disorder. It is characterized by disproportionate pain to the history and physical findings, associated with symptoms and signs of autonomic dysfunction. Type 1 CRPS occurs when no nerve damage can be identified. It can occur at any age, although it is more common in adolescent females.

Case Presentation Summary: A previously healthy 13-year-old female attended the pediatric emergency department due to a one-month history of sudden onset pain in the right calf region. She also presented with limping and paresthesia in the right foot. Symptoms started after physical activity reduction due to online learning during the lockdown, and have worsened in the previous week. She reported an improvement after walking. History of previous trauma was denied. Physical examination revealed decreased temperature, allodynia, and hyperalgesia of the right lower limb. No edema, color, trophic or sweating changes were observed. No changes in strength or range of motion were identified. Joint mobility was normal, with no associated pain or other inflammatory signs. Posterior tibial and dorsalis pedia pulses were normally palpable. Orthopaedic pathology was ruled out and the diagnosis of type 1 CRPS was assumed. Limb mobilization was encouraged, and a multidisciplinary follow up was initiated. After six months of physical and cognitive behavioural therapy, there was significant pain relief and an improvement in the quality of life of the patient. During the follow-up, depressed humour and family conflicts were identified.

Learning Points Discussion: We aim to remind clinicians about this rare syndrome, which diagnosis is mainly clinical and often difficult. CRPS must be considered in the differential diagnosis of continuing pain accompanied by signs of autonomic dysfunction. Unlike adults, in children and adolescents, an inciting injury is rarely identified. Psychologic issues play a more prominent role, as seen in this case. It is also relevant to highlight the importance of an early diagnosis since this disease considerably affects the quality of life. Due to its multifactorial nature, a multidisciplinary approach is crucial to a favourable prognosis. Cognitive-behavioural therapy, physical and occupational therapy are the pillars of treatment. Pharmacological therapy plays a secondary role, reserved for refractory cases.

ID: 229
Poster Presentation
Topics: GENERAL PEDIATRICS, RARE DISEASES, HAEMATOLOGY / ONCOLOGY
Keywords: Langerhans cells histiocytosis, recurrent otitis media, anemia, dermatitis

Langerhans cells histiocytosis: a case report

Simoes, Diana[1]; Moreira, Tatiana[1]; Fonseca, Sara[1]; Ferreira, Maria Fatima[2]; Carvalho, Irene[1,3]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Portugal; [2]Department of Clinical Hematology, Centro Hospitalar Universitário de São João, Portugal; [3]Inpatient Pediatric Unit, Department of Pediatrics, Centro Hospitalar Universitário de São João, Portugal

Background: Langerhans cells histiocytosis (LCH) is a rare disease that results from clonal proliferation of pathologic dendritic cells with subsequent inflammation and destruction of the affected

organs. Clinical manifestations are multiple, according to the affected tissues and the extent of the disease.

Case Presentation Summary: The authors present a case of a 9 month-old boy referred to our centre with severe anemia and iron deficiency. He presented a history of recurrent/persistent infections since 4 months old and an exuberant dermatitis refractory to multiple topic treatments. On admission, he had been feverish for 4 days. Laboratory investigation revealed microcytic and hypochromic anemia (Hb 4,8 g/dl) with anisocytosis and some ovalocytes on peripheral blood smear. These manifestations, associated with the rapid development of hepatosplenomegaly and bilateral cervical lymphadenopathies, worsening of anemia and a pronounced reduction in platelet, raised suspicion of LCH diagnosis, so myelogram, bone and skin biopsies were performed. The immunoreactivity of the cells was positive for CD1a and protein S100, confirming the diagnosis of LCH.

Learning Points Discussion: LCH is a rare and clinically heterogeneous disease and demands high suspicion for diagnosis. This case illustrates the importance of considering the constellation of symptoms and signs presented in the differential diagnosis and diagnostic approach. Multisystem LCH with involvement of risk organs (spleen, liver and/or hematopoietic system) in a child with age inferior to 2 years, as in our case, is associated with lower response to treatment and poorer prognosis.

ID: 230
Poster Presentation
Topics: GENERAL PEDIATRICS, RARE DISEASES, EMERGENCY PEDIATRICS
Keywords: Hemivertebra, Laryngotracheobronchitis, Scoliosis, Congenital anomalies

Laryngotracheobronchitis or something else: a case report

Simoes, Diana[1]; Margarida, Dias[1]; Lourenco, Joana Ventura[1]; Pais-Cunha, Ines[1]; Assuncao, Andre[1]; Maia, Ana[1,2]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal; [2]Department of Gynaecology-Obstetrics and Pediatrics, Faculty of Medicine of the University of Porto, Portugal

Background: Hemivertebra (HV) is a rare congenital spinal abnormality, where only part of the vertebral body develops, which may lead to progressive spinal deformities, being the most common scoliosis. Multiple congenital abnormalities within and outside the spine have been associated with this condition.

Case Presentation Summary: A 6-month-old female infant was brought to the emergency department with fever, rhinorrhea, signs of respiratory distress, harsh and “barky” cough. At examination stridor, intercostal and subcostal retractions were identified. She was immediately treated with nebulized epinephrine and oral dexamethasone for Laryngotracheobronchitis with a good response. Chest X- Ray showed flattening of diaphragm, lung hyperinflation and an unexpected thoracic hemivertebra (T12), previously unknown. Inpatient vigilance and empirical intravenous antibiotic therapy were started with good clinical evolution. Pediatrics and orthopedics follow-up was initiated for evaluation and subsequent management.

Learning Points Discussion: Defects in vertebral body formation can be heterogeneous, and the risk of progression of curvature due to HV correlates with the location, number of affected vertebras, age and degree of segmentation. In our case, we have a fully segmented thoracic HV ergo with a high potential of spinal deformities. Most frequently, HV is detected accidentally in a thoracic X-ray done by chest evaluation as with our patient. Whether a spine deformity is visible or

	Patient 1N	**Patient 2S**	**Patient 3M**	**Patient 4F**
Age(years)/Sex/ Race	3/male/African	3/male/White	4/female/White	14/male/White
Fever(max/days)	39.6ºC/4days	39.0ºC/3days	39.9ºC/3days	39.0ºC/4days
Exposure to SARS-Cov-2	PCR: positive IgG: positive Contact: 2 weeks	PCR: negative IgG: positive Contact: 4 weeks	PCR: negative IgG: positive Contact: 4 weeks	PCR: positive IgG: positive Contact: 4 weeks
Clinical Manifestations	Abdominal pain vomiting, rash, conjunctivitis	Abdominal pain vomiting, rash, conjunctivitis	Abdominal pain vomiting, rash, odynophagia	Abdominal pain rash, headache, odynophagia
Inflammatory markers	CRP 212mg/L Procalcitonin 1.5ng/ml Ferritin 439ng/ml IL-6: 65 pg/ml	CRP 313mg/L Procalcitonin 21ng/ml Ferritin 228ng/ml IL-6: 62 pg/ml	CRP 173mg/L Procalcitonin 1.5ng/ml Ferritin 412ng/ml IL-6: 6.0 pg/ml	CRP 295mg/L Procalcitonin 2ng/ml Ferritin 1571ng/ml IL-6: 32pg/ml
Laboratory: Hgb:g/dl, Leuc/mm^3, Lymph/mm^3, Plat/mm^3, Na: mmol/L Albumin g/dl	Hgb 11.4, Leuc 21.800 Limph 6.700 Platelets 150.000 Na 133, Albumin 2.4	Hgb 10.2, Leuc 9.500 Limph 1.100 Platelets 159.000 Na 133, Albumin 3.4	Hgb 12.8 Leuc 21.800 Limph 3.900 Platelets 724.000 Na 128, Albumin 3.2	Hgb 12.6, Leuc 32.700 Limph 1.300 Platelets 179.000 Na 134, Albumin 2.8
Coagulopathy	D-dimer 7280 ng/ml Fibrinogen 370 mg/dl	D-dimer 2630 ng/ml Fibrinogen 1085 mg/dl	D-dimer 5270 ng/ml Fibrinogen 370 mg/dl	D-dimer 6320 ng/ml Fibrinogen1200mg/dl
Cardiac makers NT-proBNP: pg/ml	Troponin 20.1 ng/L NTproBN: NR	Troponin 20 ng/L NTproBNP: 6970	Troponin 9.3 ng/L/ml NTproBNP: NR	Troponin 576ng/L NTproBNP: 19778
Echocardiography	LVEF 70%. No MR Pericardial effusion	LVEF 55%. MR. Coronary brightness Pericardial effusion	LVEF 72%, No MR Coronary brightness	LVEF 40%. MR. Coronary brightness Pericardial effusion
Others	Peritoneal effusion Pleural effusion	Peritoneal effusion	Peritoneal effusion	Peritoneal effusion
Treatment	Glucocorticoid, IVIG Aspirine, Antibiotics LMW-Heparin, diuretic	Glucocorticoid, IVIG Aspirine, Antibiotics	Glucocorticoid, IVIG Aspirine, Antibiotics	Glucocorticoid, IVIG Aspirine, Antibiotics, LMW-Heparin
Respiratory support	no	no	no	CPAP
PICU admission	no	Volume expansion Vasopressors	no	Volume expansion Vasopressors
Follow-up	Clinical recovery	Clinical recovery	Clinical recovery	Clinical recovery

PCR: polymerase chain reaction, CRP: C-reactive protein,NT-ProBNP:N-terminal pro-B-type-natriuretic peptide, NR:not register, IL-6: interleukin 6, Na: natremia, Hgb: Hemoglobin, Leuc: Leucocites, Lymph: Lymphocites, IVIG: intravenous immunoglobulin, LMW-Heparine: Low Molecular Weight Heparine, LVEF: left ventricular ejection fraction. MR: mitral regurgitation. CPAP: continuous positive airway pressure.

the abnormality is detected unintentionally, a complete investigation is necessary once multiple congenital abnormalities, within and outside the spine, have been associated with HV. The key to prosperous treatment is early identification and surgical hemivertebra resection.

ID: 132

Poster Presentation

Topics: GENERAL PEDIATRICS, EMERGENCY PEDIATRICS, COVID-19

Keywords: COVID-19, MIS-C, Pediatric, Fever, Inflammation

Multisystem Inflammatory Syndrome in Children (MIS-C): understanding a novel disease that mimics others.

Ortigado, Alfonso; Castaño, Elisa; Llorente, Cristina; Blazquez, Beatriz; Gilarte, Cristina Eugenia; Olteanu, Filip Camil
Department of Pediatrics, Guadalajara Universitary Hospital, Spain

Background: Multisystem Inflammatory Syndrome in Children (MIS-C) emerged in April 2020 in communities with high COVID-19 rates and a temporal association between them. Although severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2) infection in children is generally mild or asymptomatic, MIS-C can lead to serious and life-threatening illnesses. This new condition is heterogeneous but resembles clinical and laboratory features of Kawasaki disease, toxic shock syndrome or macrophage activation syndrome. The pathogenesis of MIS-C is still unclear. Many questions are emerging that need to be answered (genetic factors, specific therapy, long-term outcome...).

Case Serie Presentation Summary: The purpose of this study was to describe the clinical and laboratory characteristics of patients who met the criteria for MIS-C admitted to our hospital in 2021 with a general population area of 261.995 (0-14 years: 42.484). Our Department of Pediatrics provides care for children from newborn to 14 years old, but we are not equipped with a Pediatric Intensive Care Unit (PICU). We present 4 patients with MIS-C; their previous medical histories were unremarkable. The main clinical manifestations, laboratory tests and treatment are shown in the table (Table).

Learning Point Discussion: Epidemiological data indicate that SARS-CoV-2 is the immune-mediated trigger for MIS-C. There is a temporal association between SARS-Cov-2 infection (or COVID-19 exposure) and the onset of MISC-C of 2-4 weeks. Gastrointestinal and dermatologic/mucocutaneous symptoms were the most common clinical manifestations (100%). Cardiovascular alterations were the most important clinical manifestation (50% need for PICU admission): myocardial and endothelial injury (cardiogenic vs vasoplegic shock). These patients should stay under close cardiovascular monitoring due to the risk of hypotension and myocardial dysfunction. Abdominal pain with an increase in inflammatory markers can mimic appendicitis and lead to unnecessary emergency operations. Our patients have shown favourable outcomes, but close follow-up is recommended after discharge from the hospital.

ID: 178
Poster Presentation
Topics: GENERAL PEDIATRICS, ENDOCRINOLOGY
Keywords: Pseudohypoparathyroidism, Albright's hereditary osteodystrophy, diplopia

Pseudohypoparathyroidism, when the suspicion is key

Neves, Raquel[1]; Amaral, Diana[1]; Veríssimo, David[2]; Fitas, Ana Laura[2]; Lopes, Lurdes[2]
[1]Pediatrics Department, Hospital Dona Estefânia, Centro Hospitalar Universitário Lisboa Central, Lisbon, Portugal; [2]Endocrinology Department, Hospital Dona Estefânia, Centro Hospitalar Universitário Lisboa Central, Lisbon, Portugal

Background: Pseudohypoparathyroidism (PHP) and related disorders are a rare group characterized by end-organ resistance to the action of parathyroid hormone (PTH). Albright's hereditary osteodystrophy (AHO), also known as Pseudohypoparathyroidism type 1 A (PHP1A), was the first subtype described. It is characterized by hypocalcemia and hyperphosphatemia despite elevated PTH, along with an unusual constellation of physical findings. The mainstay of the diagnosis is its

clinical and biochemical characteristics. Identifying the molecular cause confirms the clinical diagnosis and allows characterization of the subtypes of the disease.

Case Presentation: We describe the clinical case of a 6-year-old female patient who presented to the emergency department with a two weeks course of diplopia and associated headache. A peculiar face and a stocky built was noted, but she had a normal neurological and ophthalmological physical examination. A head CT scan was performed and showed bilateral calcifications in both basal ganglia and white subcortical substance. Laboratory investigation revealed serum hypocalcemia of 4,9 mg/dl, hyperphosphatemia and an elevated serum PTH level of 816,30pg/ml, with subclinical hypothyroidism (elevated TSH and diminished fT4). Electrocardiogram (EKG) detected a prolonged QTc interval of 524ms. Reviewing the physical examination with attention to dysmorphic characteristics, brachydactily, with shortening of metacarpal and 4th and 5th metatarsal bones bilaterally, was also noted. She was admitted and initially treated with intravenous calcium and oral vitamin D analog. A progressive normalization of the phosphocalcium metabolism and the EKG was verified as well as resolution of the clinical symptoms. A skeletal radiological study was conducted and showed decreased bone mineral density and higher than expected bone age, but no ectopic ossifications. Findings were consistent with Pseudohypoparathyroidism with Albright's hereditary osteodystrophy (AHO) phenotype and genetic analysis confirmed the diagnosis with identification of pathogenic variant in heterozygosity in the GNAS gene.

Discussion: Early diagnosis can be challenging due to symptom heterogeneity and overlap of clinical findings, as exemplified in the clinical case we describe. The neurological findings set the clue for this endocrinological disorder. The level of suspicion was of determinant importance, allowing specific interventions that are crucial for the efficiency of treatment and can be life-saving. Therapeutic management consists mostly of normalization of calcium levels, and follow-up requires a multidisciplinary team to manage and follow other clinical aspects and potential complications.

ID: 225
Poster Presentation
Topics: GENERAL PEDIATRICS, ALLERGY, IMMUNOLOGY & RESPIRATORY, EMERGENCY PEDIATRICS
Keywords: Shaken baby syndrome, child abuse, trauma

Shaken baby syndrome - A 16-year experience

Von Hafe, Madalena; Mota, Barbara; Carvalho, Irene
Pediatrics Department, Centro Hospitalar Universitário São João, Porto, Portugal

Introduction: Shaken Baby Syndrome (SBS) is a rare syndrome that encompasses various non-specific symptoms that occur after physical abuse. This study aimed to characterize patients admitted to SBS to alert physicians of the clinical presentation and demographic characteristics.

Method: A retrospective study was carried out in patients hospitalized with SBS from 2004 to 2020. By consulting the clinical file, demographic data, clinical information, and laboratory exams were collected. Statistical analysis was performed using SPSS.

Results: Eight patients were included, with a mean age of 102± 69 days; 25% were female. The perpetrator was the mother in 2 situations; the father was identified as the perpetrator in 3 and, on 1 occasion, was the babysitter. The average age of the abuser was 23±4 years. The clinical presentation included lethargy (4), vomiting (2), convulsive crises (1), hypotonia (1) and inconsolable crying (1). All infants had anterior fontanelle bulging on admission, 7 bilateral retinal hemorrhages and 1 unilateral hemorrhage. Two patients had external signs of trauma and only 1 signs of fracture on skeletal radiography. On cranioencephalic tomography, most patients presented

subdural hemorrhage (6), 1 presented subarachnoid hemorrhage and another intraventricular and subdural hemorrhage with a skull fracture. Most patients had normocytic and normochromic anemia with mean hemoglobin of 8.23± 0.70g/dL.

Conclusion: The diagnosis of SBS implies a high level of suspicion that must be present in infants with altered state of consciousness. Although anemia was a frequent finding in this cohort, larger sample size studies are needed to clarify the potential association with this syndrome.

ID: 364
Poster Presentation
Topics: GENERAL PEDIATRICS, RARE DISEASES
Keywords: cleft palate, COL11A1, pathogenic variant, retrognathia, Stickler syndrome

Stickler syndrome - a new pathogenic variant?

Dias, Margarida[1]; Curval, Ana Rita[1]; Cardoso, Beatriz Falcão[1]; Pinheiro, Marta[1,2]; Maia, Ana[1,2,3]; Moura, Carla Pinto[3,4,5,6]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal; [2]Department of Gynecology-Obstetrics and Pediatrics, Faculty of Medicine of the University of Porto, Portugal; [3]Transdisciplinary Team of Cleft Lip and Palate, Centro Hospitalar Universitário de São João, Porto, Portugal; [4]Department of Otorhinolaryngology, Centro Hospitalar Universitário de São João, Portugal; [5]Department of Human Genetics, Faculty of Medicine of the University of Porto, Portugal; [6]Institute for Research and Innovation in Health, University of Porto, Portugal

Background: Stickler syndrome is a group of inherited disorders of connective tissue characterized by a wide variety of features such as orofacial anomalies, including cleft palate (isolated or within the Pierre Robin sequence), ophthalmopathy, hearing loss and joint pathology, with its clinical expression being quite variable. It is caused by alterations in one of six pro-collagen genes (COL2A1, COL11A1, COL11A2, COL9A1, COL9A2 or COL9A3), with mutations in the first three being responsible for the majority of cases of autosomal dominant transmission.

Case Presentation Summary: 7-year-old male with multidisciplinary follow-up for ultrashort bowel syndrome, interatrial communication, bilateral epicanthus, retrognathia, complete cleft palate (postnatal diagnosis), myopia and global developmental delay. He underwent Furlow and Von Langenbeck palatoplasty at 10 months of age. His mother had cleft palate, hypoacusis and myopia. Due to phenotype compatible with Stickler syndrome, he underwent a genetic study that revealed a heterozygous variant that was not previously described and classified as a variant of uncertain significance (2568_2576delATTCCCTGG, in exon 32 of the COL11A1 gene). The same genetic change was detected in his mother. The father's study was normal.

Learning Points Discussion: This case report, where we present a variant that had not been described yet in the COL11A1 gene, reinforces the great variability of expression of this rare syndrome. Moreover, since the mother associates the phenotype with the same variant as her son, this seems to be a pathogenic variant for the disease, whose identification allows a better definition of the possible clinical findings, prognosis and genetic counselling of the family.

ID: 253
Poster Presentation
Topics: GENERAL PEDIATRICS, DERMATOLOGY
Keywords: granuloma, annulare, scalp

Subcutaneous nodules of the scalp in a 4-year-old child

Rodrigues, Sara Sofia S.[1]; Torres Rebelo, Ana[1]; Fonseca, Telmo[1]; Pinho de Sousa, José[2]
[1]Centro Hospitalar Entre Douro e Vouga, Portugal; [2]Centro Hospitalar Vila Nova de Gaia/Espinho

Background: Subcutaneous granuloma annulare (SGA) is a rare variant of granuloma annulare, characterized by single or multiple subcutaneous nodules on the scalp or extremities. Frequently, it appears in children and young adults, and its pathogenesis remains uncertain. Recognition of its benign evolution prevents parental anxiety and unnecessary medical investigation.

Report: A 4-year-old, otherwise healthy girl was observed with a 1-month history of asymptomatic scalp nodules with progressive growth. According to the mother, there was no trauma or insect bites associated and no record of pruritus or drainage. Physical examination revealed three mobile subcutaneous nodules, on the occipitoparietal area, with 1 cm of diameter. Routine laboratory studies were normal. Skull radiographs show a soft tissue mass without bony involvement. A skin biopsy was performed, histologically, the lesion was consistent with subcutaneous granuloma annulare (SGA). Considering the benign nature of SGA and the risk of recurrence, the child did not receive any treatment. After a six-month follow-up, the two remaining nodules receded.

Discussion: Granuloma annulare is a self-limited inflammatory disease. Subtypes with distinct clinical characteristics include localized granuloma annulare, generalized granuloma annulare, perforating granuloma annulare and subcutaneous granuloma annulare (SGA). SGA is an uncommon disease typical of pediatric age. Pathogenesis and etiology remain obscure. Children with SGA are usually 2 to 5 years old, and no association with systemic disease was yet reported. The most common location is traumatic areas. There are few reports of SGA solely involving the scalp. The differential diagnosis of the subcutaneous nodules of the scalp is extensive and includes bony exostosis, osteoma and calcinosis cutis, pilomatricoma, traumatic granuloma, rheumatoid nodules, subcutaneous metastasis, and subcutaneous juvenile xanthogranuloma. Radiographs may be helpful in revealing the presence of calvarial invasion. Biopsy is recommended for definitive diagnosis. Typically, the lesions have a central zone of necrotic collagen surrounded by palisading histiocytes and mononuclear inflammatory cells (Imagè 1). Treatment of SGA is unnecessary since spontaneous resolution is expected in the majority of cases. Recurrence, often at the same site, may occur.

ID: 228
Poster Presentation
Topics: GENERAL PEDIATRICS, RARE DISEASES, NUTRITION & DIETS
Keywords: Vomiting, Metabolic Disorders, Metabolic Acidosis, Pediatrics

Vomiting in the emergency department, a red flag for metabolic disorders

Simao, Margarida; Lopes, Patricia; Garcia, Margarida; Ferreira, Ana Cristina Hospital Dona Estefânia, Centro Hospitalar Universitário Lisboa Central, Portugal

Background: Inborn errors of metabolism (IEM) are a group of disorders that result from impairment in normal metabolic processes. Many of them can present with metabolic decompensation. Early recognition and appropriate treatment are vital for reducing morbidity and mortality. Furthermore, the signs and symptoms of IEMs may be nonspecific and often overlap with more common disorders, such as infectious diseases. It is important for the pediatrician to know when to suspect, request basic metabolic tests, start medical treatment, and refer to a metabolic specialist.

Case Presentation Summary: We report the case of a 5-year-old girl, 2nd child of consanguineous, healthy parents from Bangladesh, born in Portugal after an uneventful gestation. She had poor weight gain, feeding difficulties with protein aversion, and intellectual disability. At age 4, she attended the pediatric emergency department (ED) with vomiting, fever and prostration that had

started 36 hours earlier. Physical examination revealed mild dehydration (3% of body weight), tachycardia, hyperventilation and ataxia. The initial laboratory workup showed severe metabolic acidosis (pH 7,101, pCO2 16 mmHg, HCO3- 5,1 mmol/L) with increased anion gap (35,7 mmol/L), mild hyperketonemia (3,4 mmol/L), normal glucose (77 mg/dL), normal lactate (1,2 mmol/L) and mild hyperammonemia (243 µg/dL). She was admitted for intravenous fluid therapy and acidosis correction, after which there was complete clinical and metabolic recovery. Rotavirus antigen was isolated in the feces, although she had not had diarrhea. Laboratory investigation in crisis showed massive amounts of urinary methylmalonic acid (3,745 µmol/mmol creatinine), elevated propionylcarnitine (C3), normal plasma total homocysteine and B12 vitamin. Genetic testing showed a probable pathogenic variant in MMADHC gene, confirming the diagnosis of intracellular vitamin B12 metabolism defect – CbID variant 2. She started weekly intramuscular hydroxicobalamin, metronidazole cycles, mild protein restriction and caloric supplementation, with positive clinical and metabolic evolution.

Learning Points Discussion: Infectious etiologies are the most frequent causes of vomiting in the ED. However, this is also an unspecific sign. In this case, the acute decompensation with severe metabolic acidosis and greatly increased anion gap (with only mild ketonemia and no hyperlactacidemia) and hyperamonemia in a child with a history of parent consanguinity, feeding difficulties, failure to thrive, and developmental delay raised the suspicion of metabolic disease and prompted the investigation. The collection of biologic samples in crisis (urine and serum) and early discussion with the metabolic team was crucial for the diagnosis, treatment, and clinical improvement of such an uncommon disorder.

ID: 329
Poster Presentation
Topics: DERMATOLOGY, ALLERGY, IMMUNOLOGY & RESPIRATORY, COVID-19
Keywords: COVID19, Dermatologic disease, Allergic reaction

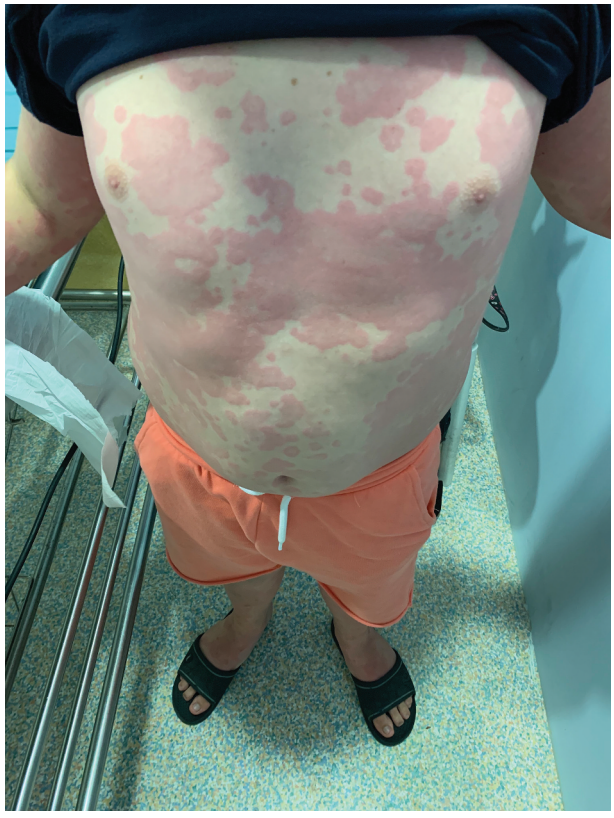
Exuberant acute urticaria in a COVID19 patient: a case report

Miragaia, Pedro; Jacob, Sylvia
Centro Hospitalar Universitário São João, Portugal

Introduction: COVID19 is a viral disease caused by SARS-CoV-2, and its clinical manifestations in children are broad, ranging from mild symptoms to severe Multisystem Inflammatory Syndrome. Multiple cutaneous manifestations have been associated with this infection, although its frequency and association with illness severity are still unclear.

Description of case: A 10-year old boy, previously healthy, presented at the emergency department, 3 days after being diagnosed with COVID19, with an exuberant rash (image) that appeared the previous day, with small itchy plaques in the abdomen that rapidly progress through the body involving legs and arms, with a confluence of the lesions that did not involve the palmar or plantar surfaces or any mucosal surfaces. He denied fever, cough, nausea, loose stools, abdominal pain, joint pain or sore throat, presenting only mild rhinorrhea with 4 days of evolution. He also denied consumption of new types of food or medications. When asked, his mother stated he previously had similar symptoms when he was 3 years old, also associated with a viral respiratory infection. He was diagnosed with acute urticarial associated with SARS-CoV-2 infection and discharged on oral antihistamines, with complete resolution of the rash (Figure).

Discussion: With this case, we want to highlight the numerous, sometimes exuberant, COVID19 clinical manifestations, which can be, particularly in children, vast and that commonly affect systems other than respiratory. Nonetheless, clinicians should be aware of them to make an early diagnosis, assess the risk of severity and limit the spread of infection.



ID: 366
Poster Presentation
Topics: ADOLESCENT MEDICINE, PUBLIC HEALTH, COVID-19
Keywords: COVID-19, health behaviours, mental health, health complaints, adolescents

Consequences of the COVID-19 pandemic on adolescents' health and health behaviour

Dzielska, Anna Maria[1]; Nałęcz, Hanna[1]; Kleszczewska, Dorota[2]; Mazur, Joanna[3]
[1]Department of Child and Adolescent Health, Institute of Mother and Child, Warsaw, Poland; [2]Foundation of the Institute of Mother and Child, Warsaw, Poland; [3]Department of Humanization in Medicine and Sexology, University of Zielona Gora, Collegium Medicum, Zielona Gora, Poland

Background: The COVID-19 pandemic disrupted the lives of children and adolescents by invading their families, peer groups and school, worsening their prospects and causing anxiety about the future. Due to the threat of COVDI-19, restrictions were imposed worldwide, forcing changes in daily life, social interactions, education and work. There is no doubt that these strict restrictions have contributed immensely to reducing the risk of SARS-CoV-2 virus spread, but at the same time had significantly affected the health of young people in all its dimensions. The main aim of this study is to present changes in health and health behaviours between 2018 and 2021.

Method: Data from the Youth and COVID-19 survey conducted in the first quarter of 2021 by the Institute of Mother and Child in Warsaw among adolescents aged 11-17 years (n=1571) as well as data from the Health Behaviour in School-aged Children (HBSC) according to the 2018 survey conducted in the same age groups (n=7701) were analysed. So were analysed indicators of physical development, mental health, subjective complaints and health behaviour. The prevalence of the aforementioned indicators was compared between 2018 and 2021, overall, by gender and age using chi^2 test.

Results: A significant increase was observed in the percentage of overweight and obese adolescents (according to WHO criteria) evident in the older age groups (15 and 17 years) and the percentage of underweight boys; an increase in the percentage of adolescents negatively assessing their health and well-being (according to the WHO5 scale - score indicating depressive symptoms) in each age group and both genders; frequently experiencing physical and mental health problems - in both genders such as headache, stomach ache, backache, feeling depressed, nervousness, difficulty in falling asleep and dizziness; only in girls - tiredness; in older adolescents - headache, stomach ache, backache, feeling depressed, irritability, nervousness, difficulty in falling asleep and dizziness; in each age group - feeling depressed; only in the youngest - tiredness. There was a significant decrease in the percentage of adolescents undertaking moderate-to-intensive physical activity at the recommended level of 60 minutes per day in both genders and each age group. However, there were positive changes in dietary behaviour: an increase in the percentage of adolescents eating daily with family in each age group, eating vegetables daily in both sexes and each age group, and a decrease in the percentage of adolescents frequently drinking sugary drinks in both sexes and each age group. Furthermore, no change was observed in the rate of frequent consumption of fruit and vegetables.

Conclusion: The adverse effects of the pandemic on health and well-being are progressing rapidly, so urgent action is needed to help mitigate the severe effects of the pandemic and safeguard the future of young people.

ID: 153
Poster Presentation
Topics: INFECTIOUS DISEASES, COVID-19
Keywords: COVID-19, pneumothorax

COVID-19 complicated by spontaneous pneumothorax

Luzio Vaz, Beatriz[1]; Forte, Joana[2]; Valsassina, Rita[1]; Brito, Maria João[1]
[1]Department of Pediatric Infectious Diseases, Hospital Dona Estefânia, CHULC; [2]Department of Pediatric Surgery, Hospital Dona Estefânia, CHULC

Introduction: Most children infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) have mild symptoms. Acute respiratory distress syndrome (ARDS) and pneumonia are the most serious respiratory manifestations. Pneumothorax has been noted to complicate cases of COVID-19, but the exact incidence is still unknown.

Case 1: A 16-year-old boy, previously healthy, diagnosed with COVID-19, was brought to the emergency department (ED) complaining of sudden onset right-sided chest pain and dry cough, without shortness of breath or fever. He had significantly diminished breath sounds on the right side at physical examination, without crackles or wheezes. A chest X-ray showed a massive right pneumothorax with a contralateral shift of the mediastinum. Two right subpleural blebs were found in the CT scan. Conservative management with chest tube drainage and oxygen therapy was performed. The chest tube was removed on day five of admission; the subsequent radiograph showed lung re-expansion. Two weeks later, the patient returned with new sudden chest pain, was admitted and submitted to surgery with resection of the apex of the right lung and apical pleurectomy due to recurrence of the pneumothorax.

Case 2: An obese 15-months boy was admitted with cough, rhinorrhea, shortness of breath, hypoxemia and oral intolerance. Inspiratory crackles, wheezes and increased expiratory time were found on physical examination. RT-PCR SARS-CoV-2 was positive. The CT revealed pneumonia with right atelectasis, bilateral pneumothorax and right pneumomediastinum. A blood test revealed leukocytosis, neutrophilia and increased CRP (C-reactive protein). No surgical intervention

was needed; conservative treatment with remdesivir and beta-adrenergic antagonists was performed during 5 days and oxygen therapy for 6 days, with clinical improvement and resolution of the radiologic findings.

Discussion: Spontaneous pneumothorax is a rare complication of COVID-19 in the absence of mechanical ventilation. In these cases, the patients didn't have any preexisting pulmonary conditions; it seems structural lung injury caused pneumothorax following COVID- 19 infection. The first case also demonstrates that patients with COVID-19 can develop a significant pulmonary complication, despite only minimal lower respiratory tract symptoms. Clinicians should be vigilant about the diagnosis and treatment of this complication, as well as the follow-up.

ID: 216
Poster Presentation
Topics: RARE DISEASES, GASTROENTEROLOGY
Keywords: Aplastic anemia, Celiac disease, Children

A rare association of celiac disease and aplastic anemia: case report and review of the literature

Moreira, Tatiana[1]; Simoes, Diana[1]; Ferreira, Fatima[2]; Trindade, Eunice[1,3]; Carvalho, Irene[1,4]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Portugal; [2]Department of Clinical Hematology, Centro Hospitalar Universitário de São João, Portugal; [3]Pediatric Gastroenterology Unit, Department of Pediatrics, Centro Hospitalar Universitário de São João, Portugal; [4]Inpatient Pediatric Unit, Department of Pediatrics, Centro Hospitalar Universitário de São João, Portugal

Background: Celiac disease (CD) is a chronic immune-mediated disorder triggered by the ingestion of gluten in genetically predisposed individuals. Although typical findings include changes in bowel habits and symptoms associated with malabsorption, clinical presentation may be heterogenous with several extraintestinal manifestations. Association of CD and aplastic anemia (AA) has been reported on the literature, yet this association remains rare in children.

Case Presentation Summary: We report a case of a previously healthy 4-year-old boy with 1-month history of diarrhea, asthenia, loss of appetite and weight loss (~20%). Laboratory evaluation showed bicytopenia with very severe aregenerative anemia (hemoglobin 3.7g/dL, reticulocytes 0.006x1012/L) and neutropenia (neutrophils 820/uL). Bone marrow aspirate and biopsy were performed with findings suggestive of bone marrow aplasia. Further etiological research showed IgA deficiency (IgA <6 mg/dL) and increased plasma concentrations of anti-tissue transglutaminase antibodies (anti-tTG IgG 336 U/L). Patient underwent upper digestive endoscopy confirming diagnosis of CD. The children started a gluten-free diet (GFD) with subsequent clinical and analytical improvement. At five- month post-hospitalization follow-up, the child was asymptomatic, with normal growth rate and resolution of bicytopenia, maintaining however elevated high anti-tTG IgG (399 U/L) due to partial adhesion to GFD.

Learning Points Discussion: To the best of author's knowledge, this is the seventh published pediatric case describing the association of CD with AA. The pathogenesis of this association is not yet fully understood. The authors suggest that, even in the absence of gastrointestinal symptoms, CD screening should be considered in patients with unexplained hematological abnormalities.

ID: 206
Poster Presentation
Topics: ALLERGY, IMMUNOLOGY & RESPIRATORY

Keywords: Acquired urticaria, cold urticaria, allergy

A rare but potentially fatal association

Von Hafe, Madalena[1]; Caires, Afonso[2]; Silva, Isabel[3]; Mota, Diogo[2]; Bordalo, Diana[1]; Maia, Ana[1,4]
[1]Pediatrics Department, Centro Hospitalar Universitário de São João, Porto, Portugal; [2]Immunoallergology Department, Centro Hospitalar Universitário de São João, Porto, Portugal; [3]Clinical pharmacology Department, Centro Hospitalar Universitário de São João, Porto, Portugal; [4]Department of Gynecology and Obstetrics and Pediatrics, Faculty of Medicine, University of Porto

Background: Acquired cold-induced urticaria (ACU) is a rare physical urticaria, especially in the pediatric age. The clinical presentation is nonspecific, which justifies its underdiagnosis. It is crucial to alert physicians about the variety of symptoms, diagnosis, and best treatment available, given the potentially life-threatening nature of this disease.

Case Report: A previously healthy 9-year-old male child was referred to the hospital because of a recurrent history of urticarial and pruritic papules that appear about 30 minutes after swimming in the river or sea. These lesions usually have a spontaneous resolution within 15 minutes and are not associated with angioedema or respiratory symptoms. Only one episode was associated with gastrointestinal symptoms and lipothymia. From a personal background, the child had atopic eczema in the first two years of life. Given the typical urticarial characteristics of the lesions and their likely trigger, the diagnostic hypothesis of ACU or aquagenic urticaria were made. The diagnosis of ACU was confirmed using the TempTest® device, which established a threshold for symptoms of 18°C. Along with trigger avoidance, the first-line treatment used was desloratadine, and an epinephrine autoinjector (Epipen ®) was prescribed due to the inherent risk of anaphylaxis. At 3 months of follow-up, there have been no new episodes of urticaria, and a new TempTest ® is scheduled to reassess the response to therapy and the temperature threshold.

Discussion: ACU has become an increasingly recognized pathology in the pediatric age. We present this case to highlight the risk of systemic reactions and the importance of preventive strategies. Evidence suggests that epinephrine autoinjector should always be prescribed, even with a negative cold stimulation test.

ID: 246
Poster Presentation
Topics: ENDOCRINOLOGY
Keywords: hypothyroidism, rhabdomyolysis, creatine kinase, myalgia

A rare case of hypothyroidism-induced rhabdomyolysis

Oliveira, Íris Rocha[1]; Fernandes, Andreia[1]; Pereira, Mafalda João[1]; Guerreiro, Nancy[2]; Gama, Guida[1]; Pereira, Ana Sousa[1]
[1]Pediatrics Department - Centro Hospitalar Universitário do Algarve – Hospital de Faro, Portugal.; [2]Pediatrics Department - Centro Hospitalar Universitário do Algarve – Hospital de Portimão, Portugal.

Background: The prevalence of neuromuscular diseases as a complication of endocrine disorders is not easily ascertainable and is likely to be underestimated. Non-specific muscular symptoms such as cramps, myalgias, weakness and exertional pain may be part of the variable clinical pictures of hypothyroidism, hyperparathyroidism or hyperadrenocorticism. On rare occasions, rhabdomyolysis can occur, with serum creatine kinase (CK) levels over 1000 U/L.

Case Presentation Summary: A 9-year-old female presented with a three-month history of severe lower limbs myalgia, cold intolerance, dry skin and fatigue. No relevant family history was reported. From her previous medical history, the presence of ADHD medicated with methylphenidate should be highlighted. On physical examination, she weighed 45.6kg (1.94 z-score) and was 143cm (0.79 z-score) in height. Goiter, palpable thyroid and symmetrical elevation of lobes with swallowing were present. Thyroid studies revealed the following: thyroid-stimulating hormone 385 mUI/mL (0.27-4.20), free thyroxine 2.17pmol/L (12-22), free triiodothyronine 1.83pmol/L (3.10-6.80), thyroglobulin antibody 513UI/mL (0-115) and anti-thyroid peroxidase antibody 87.6 UI/mL (0.0-34.0). Creatine kinase levels were elevated at 1274U/L (20-180) along with elevated transaminases [AST 150U/L (10-30) and ALT 80U/L (10-36)] and normal renal function. Lipid profile demonstrated total cholesterol 194mg/dL (0-190) and LDL cholesterol 128mg/dL (0-100). No other autoimmune diseases were discovered. Thyroid ultrasound revealed a decreased echogenicity as well as a significant increase in its vascularity, compatible with thyroiditis. Abdominal ultrasound was consistent with hepatic steatosis. She was diagnosed with primary autoimmune hypothyroidism, with rhabdomyolysis and dyslipidemia. Levothyroxine replacement was initiated and progressively increased up to a maximum of 100µg/day, with clinical improvement. There has been thyroid function and CK levels improvement, with transaminases and lipid profile normalization.

Learning Points / Discussion: Rhabdomyolysis is characterized by skeletal muscle destruction with release of intracellular muscle components into the bloodstream. Its classical clinical presentation includes muscle pain, weakness, and dark tea coloured urine, although this triad might not always be present. Rhabdomyolysis attributable to hypothyroidism is rare, and its precise pathogenesis remains unclear. Usually, it is exacerbated by co-existing factors, such as intensive physical effort, renal or adrenal failure, drugs or alcohol. The mentioned case demonstrates a rare consequence of untreated and undiagnosed hypothyroidism, with no co-existing exacerbating known factors. A high level of suspicion for its diagnostic evaluation is needed, and medical treatment should be promptly introduced. Severity ranges from an asymptomatic illness to a life-threatening condition, and it's crucial to maintain proper management and early recognition of complications.

ID: 179

Poster Presentation

Topics: EMERGENCY PEDIATRICS

Keywords: acute scrotal pain; testicular torsion; delays; orchidectomy; prevention;

Acute scrotal pain, testicular torsion and factors influencing orchidectomy at a Tertiary Pediatric Center: a 4- year retrospective study

Fernandes, Andreia J.; Oliveira, Íris Rocha; Pereira, Mafalda João; Pereira, Rita Justo; Virtuoso, Maria João

Pediatrics Department - Centro Hospitalar Universitário do Algarve – Hospital de Faro, Portugal

Background: Acute scrotal pain (ASP) is a common condition in pediatric emergency. It can have various etiologies, but given the possibility of testicular torsion (TT), with the need for urgent surgery, it should be considered an emergency. TT is infrequent, but it may result in testicular loss and fertility impairment. Most reports suggest 6 hours (h) as the cut-off for viability before irreversible damage occurs. The Orchidectomy rate remains high, ranging from 20-60%. Several factors have been described as correlating with orchidectomy: symptom duration, place of assessment, transfer to another hospital, doppler-ultrasonography, etc. The objective of this study was to identify the most common causes for ASP, TT rate and the factors contributing to orchidectomy in our department.

Methods: A retrospective study of patients admitted for ASP between 2017 and 2020 was performed by analyzing epidemiological, clinical and complementary examination data.

Results: Our study included 362 patients aged 12-18 years, with mean age 15. The most common causes of ASP were orchiepididymitis (36,74%), trauma (13,26%), hydrocele (9,67%), TT (8,84%) and inguinal hernia (4,97%). Thirty-two cases of TT were identified. Regarding TT: the right testicle was more frequently affected, and the most common symptoms were testicular pain, nausea and vomiting. Orchidectomy was performed in 34,38% of cases. The average symptom duration at presentation was 19,95h: 3,02h in viable testicles (VT) and 52,27h in nonviable testicles (NVT). Previous evaluation in another health care facility (peaHCF) increased symptom duration by 4,46h: 2,10h in VT and 10,00h in NVT. Performing a doppler-ultrasonography (pDUSG) increased symptom duration by 11,33h: 2,35h in VT and 2,56h in NVT. In 8 cases, 4 by pDUSG and 4 by peaHCF, symptom duration increased above the cut-off for viability. Two cases were transferred to another hospital, and in those, symptom duration increased from 1,5 to 6,5h; one underwent orchidectomy.

Discussion: Delays in presentation and/or management may result in testicular loss, and understanding the factors influencing these delays is crucial for orchidectomy prevention. In our study, the most prominent factor affecting orchidectomy rate was symptom duration at presentation, but peaHCF, pDUSG and transfer were proven to add a further delay. We want to reinforce that when TT cannot be excluded, surgical exploration is urgent and shouldn't be delayed, especially if symptom duration it's already close to the cut-off of viability. Concluding, we believe it's important to educate health care professionals and families about ASP and its consequences so that delays in presentation/management can be minimized.

ID: 308

Poster Presentation

Topics: ADOLESCENT MEDICINE, PUBLIC HEALTH

Keywords: adolescents, well-being, psychological symptoms, life satisfaction, HBSC

Adolescent well-being: what has changed in the last decade?

Dalmasso, Paola[1]; Berchialla, Paola[2]; Bersia, Michela[3]; Borrraccino, Alberto[1]; Ciardullo, Silvia[4]; Pierannunzio, Daniela[4]; Lemma, Patrizia[1]; Nardone, Paola[4]; Comoretto, Rosanna Irene[1]; Charrier, Lorena[1]

[1]Department of Public Health and Paediatrics, University of Torino (Italy); [2]Department. of Clinical and Biological Sciences - University of Torino (Italy); [3]Post Graduate School of Medical Statistics, University of Torino (Italy); [4]National Centre for Disease Prevention and Health Promotion, Italian National Institute of Health, Rome, Italy.

Background: Mental health is central for its impact on public health: WHO projections indicate, in fact, in 2020, depression is the second cause of illness, emphasizing adolescence as a fundamental period in forming the features of adult mental health. Based on Italian representative data, we explored trends of perceived health complaints and life satisfaction among Italian adolescents from 2010 to 2018, controlling for the role of socioeconomic and contextual factors of change over time.

Methods: Data from the Italian Health Behaviour in School-aged Children (HBSC) 2010, 2014 and 2018 surveys were analyzed. Representative samples of students aged 11, 13, and 15 years were recruited throughout all Italian regions. StandardizedStandardized and self-administered questionnaires were used to collect information about a wide range of topics. Wellbeing was evaluated exploring life satisfaction (LS), a 1-10 cognitive scale, and psychological and somatic health complaints (HC≥2 symptoms more than once a week). Multivariable linear and logistic regression

models were performed to assess the trends over time of HC and LS (dependent variables), using survey year, SES, geographic area (North, Centre, South) and social support (family, school and peers) as independent variables. Due to interaction, analyses were stratified by gender and age.

Results: Results were based on over 165000 students with similar gender and age distribution among the three waves. The cognitive scale of wellbeing (LS) was steady between 2010 and 2018, showing a significant decreasing trend among age in both boys and girls. From 2010 to 2018, Health Complaints presented an increasing trend in all the samples, mainly for psychological symptoms. Girls seemed to be more affected than boys, stronger and earlier in life: in particular, from 40.8% to 54.1% of 15 yrs old females presented psychological symptoms, with a mean increase of 6% every 4 years (OR: 1.06, CI95%: 1.05-1.07). Family and peer support resulted significantly associated with health complaints, playing a protective role.

Conclusions: Our findings in a representative sample of Italian adolescents suggest that overall prevalence rates of health complaints, mainly psychological symptoms, were increased from 2010 and 2018 in all gender and age groups, mainly among 13 and 15 years old girls.

ID: 254
Poster Presentation
Topics: INFECTIOUS DISEASES
Keywords: acyclovir, herpes zoster, meningitis, post lumbar puncture headache, varicella-zoster virus

Aseptic meningitis - an etiology not to be forgotten

Dias, Margarida[1]; Melo, Ana Reis e[1,2]; von Hafe, Madalena[1]; Carvalho, Irene Pinto de[1,3]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal; [2]Pediatric Infectious Diseases and Primary Immunodeficiency Unit, Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal; [3]Inpatient Pediatric Unit, Department of Pediatrics, Centro Hospitalar Universitário de São João, Porto, Portugal

Background: Herpes zoster with development of neurological complications is rare in immunocompetent children. Factors that increase the risk include the presence of immunosuppression, skin rash with craniocervical distribution and varicella in early childhood.

Case Presentation Summary: A previously healthy 12-year-old female with a history of varicella at the age of 2 years presented with a holocranial headache that had begun 4 days earlier, progressively worsening accompanied by photophobia and phonophobia—fever with 8 hours of evolution associated with nausea and vomiting. Physical examination revealed a reasonable general condition, vesicular lesions on the C6/C7 dermatome and positive Brudzinski's sign. The blood workout was normal. After 8 attempts to perform a lumbar puncture (LP), the cytochemical examination of cerebrospinal fluid (CSF) revealed 688 leukocytes/uL with 96.2% of mononuclear cells and total proteins 1.03g/L. She was started on empiric intravenous (IV) acyclovir and ceftriaxone. Later known positive result for varicella-zoster virus by polymerase chain reaction performed on CSF and skin lesions. The remaining microbiological results were negative. She was on IV acyclovir for 14 days. Five days after lumbar puncture, she restarted intense headaches and inability to stand and vomit, which was compatible with post lumbar puncture headaches. She was given oral caffeine and fixed analgesia, with complete resolution within 6 days. The patient was referred to a Pediatric Infectious Disease specialist to exclude immunodeficiency.

Learning Points Discussion: Although rare, the varicella-zoster virus should be considered a possible cause of meningitis in children with vesicular rash and a history of varicella in early

childhood. Post lumbar puncture headache usually appears within 72 hours after LP but should not be excluded if it occurs later, especially in the presence of risk factors for its occurrence.

ID: 314
Poster Presentation
Topics: GASTROENTEROLOGY, ENDOCRINOLOGY
Keywords: Down syndrome, autoimmune hypothyroidism, celiac disease

Autoimmune disorders in child with Down syndrome

Pereira, Mafalda João; Rocha e Oliveira, Íris; Fernandes, Andreia J.; Saúde Soares, Marta; Gama, Guida; Sousa Pereira, Ana
Centro Hospitalar Universitário do Algarve - Unidade de Faro, Portugal

Background: Patients with Trisomy 21 or Down Syndrome (DS) exhibit increased susceptibility toward thyroid and non-thyroid autoimmune disorders, such as Type 1 Diabetes (T1D) and Celiac Disease (CD), the latter presenting more commonly among children older than 6 years of age.

Case Presentation Summary: 8-month-old girl with DS, with family history of thyroid disease on her father's side, no other relevant history. On her routine follow-up, she was diagnosed with subclinical hypothyroidism after repeated laboratory results showed elevated thyroid-stimulating hormone (TSH) and free thyroxine (FT4) on the lower limit of normality (LLN). She initiated treatment with levothyroxine, but after 10 months and despite increasing the dosage progressively, she maintained elevated TSH and FT4 on the LLN. Physical examination showed characteristic facial features, a short neck, no goiter, and no weight gain in the previous 2 months. According to DS growth charts, her weight percentile showed a decreasing tendency from the 25-50th at birth to the 10-25th at 15 months, the 5-10th percentile at 17 months and below the 5th percentile at 19 months. She denied diarrhea or other symptoms of malabsorption. The autoimmune screening revealed positive thyroid peroxidase autoantibodies and normal thyroglobulin autoantibodies, positive IgA anti-tissue transglutaminase autoantibodies and positive anti-gliadin IgA autoantibodies, normal islet autoantibodies, normal glutamic acid decarboxylase autoantibodies and positive anti-insulin autoantibodies. She was diagnosed with autoimmune hypothyroidism (AH), and CD was suspected. Her glycemic profile was normal, so T1D was ruled out for the moment. She underwent an esophagogastroduodenoscopy confirming the CD diagnosis with a stage 3 Marsh score. She is currently starting a gluten-free diet.

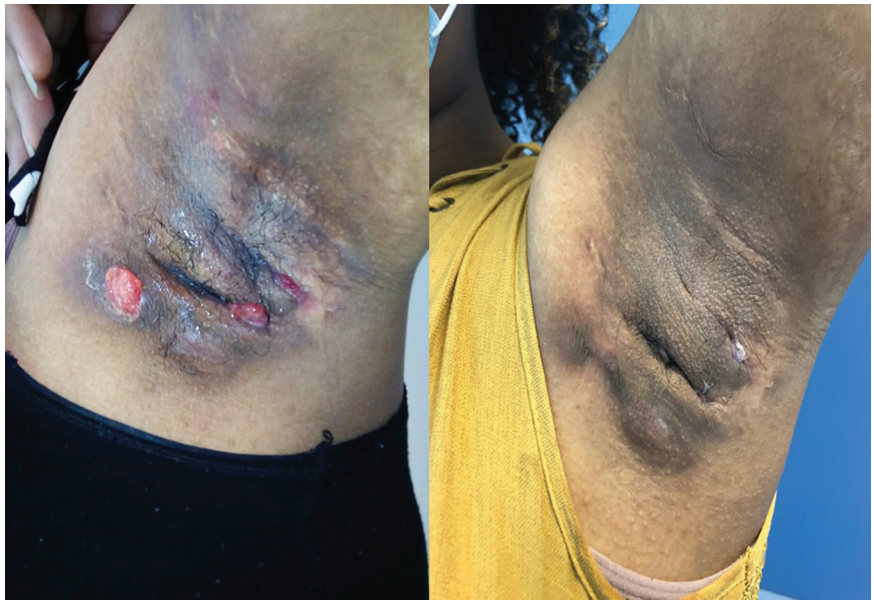
Learning Points/Discussion: It is essential to perform a very careful examination and regular long-term follow up for children with DS, including growth curves, thyroid function tests and autoantibody testing, in order to maintain optimum conditions for the development of these children. In our case, the child presented antibodies suggesting AH, CD and T1D. Even though only AH and CD were confirmed, it is crucial to search for signs, and symptoms of other disorders in her routine follow-up care, especially at such a young age assure her ideal development. It is well known that patients with DS are at a higher risk for developing autoimmune diseases than those of the general population. Still, DS children with three autoimmune diseases in early childhood are very rare.

ID: 288
Poster Presentation
Topics: RHEUMATOLOGY
Keywords: macrophage polarization, IgA vasculitis nephritis

Investigation of macrophage polarization in IgA vasculitis nephritis

Figure 1.

Figure 2.



Kifer, Nastasia[1]; Sestan, Mario[1]; Held, Martina[1]; Kifer, Domagoj[2]; Frkovic, Marijan[1]; Babarovic, Emina[3]; Bulimbasic, Stela[4]; Coric, Marijana[4]; Gagro, Alenka[5]; Laskarin, Gordana[6]; Jelusic, Marija[1]
[1]Department of Paediatrics, University Hospital Centre Zagreb, University of Zagreb School of Medicine, Zagreb, Croatia; [2]Department of Biophysics, Faculty of Farmacy and Biochemistry, Zagreb, Croatia; [3]Department of General Pathology and Pathological Anatomy, University of Rijeka, Faculty of Medicine, Rijeka, Croatia; [4]Department of Pathology and Cytology, University Hospital Centre Zagreb, University of Zagreb School of Medicine, Zagreb, Croatia; [5]Department of Paediatrics, Children's Hospital Zagreb; Univesity of Osijek Faculty of Medicine, Osijek, Croatia; [6]Department of Physiology, Immunology and Pathophysiology, University of Rijeka, Faculty of Medicine, Rijeka, Croatia

Background: Macrophages frequently infiltrate injured glomerular and tubulointerstitial tissue, and it is possible that the degree and subtype of macrophage infiltration (M1 macrophages, which show pro-inflammatory features, and M2 macrophages, with their immunosuppressive features) varies depending on the type and severity of renal injury. Although renal involvement in patients with Henoch-Schönlein's purpura (HSP) is the main cause of morbidity and mortality and a significant prognostic determinant for the disease outcome, a reliable prognostic factor for severe forms of IgA vasculitis nephritis (IgAVN) is yet to be determined. This research aimed to determine macrophage subclasses in renal biopsy specimens of IgAVN patients and to analyze their quantity in regard to patients' clinical parameters and histologic features.

Methods: We performed an immunohistochemical study on renal tissue samples of patients with IgAVN, diagnosed by EULAR/PRINTO/PRES criteria and followed for at least 6 months. Patient clinical and laboratory data were retrieved from hospitals' medical records. Renal biopsy samples were marked with antibodies for CD68, iNOS and arginase. The number of immunoreactive cells was counted in each glomerulus by two independent experts.

Results: Laboratory and histologic data for 20 patients with IgAVN was evaluated in regard with macrophage infiltration of the renal tissue. The median glomerular M1 and M2 counts (q1, q3) were 9.5 (1.1, 17.2) and 12.9 (8.4, 19.4) respectively. M1 macrophages were found statistically significantly less frequent in the glomeruli in comparison with M2 macrophages ($p = 0.011$, $b = -0,214 \pm 0.084$). Collected laboratory data included inflammatory markers and markers of kidney function. Levels of fibrinogen and C4 complement were statistically significantly corelated to M2

macrophage Infiltration ($p < 0.001$, $b = 0.445 \pm 0.088$, and $p = 0.002$, $b = 0.457 \pm 0.097$, respectively). There was no significant correlation between M1 macrophage count and laboratory parameters. Four pathohistological classifications were used: ISKDC, Haas classification, Oxford classification, and SQC classification. Classification stages/total classification scores and all histological variables were evaluated for possible correlation with macrophage count. Statistically significant negative correlations were found between mesangial proliferation and M1 macrophages ($p = 0.046$, $b = -1{,}190 \pm 0.469$)., M2 macrophages ($p = 0.011$, $b = -1{,}032 \pm 0.291$) and total macrophage infiltration ($p = 0.008$, $b = -1{,}024 \pm 0.329$).

Conclusions: Glomeruli in IgAVN showed predominant M2 polarization of macrophages as well as a positive correlation between M2 macrophages and fibrinogen and C4 complement. Macrophage infiltration of glomeruli was highlighted as a possible negative predictor for mesangial proliferation.

ID: 262

Poster Presentation

Topics: DERMATOLOGY, ADOLESCENT MEDICINE

Keywords: Hidradenitis Suppurativa, Pustular Skin Lesions, Adolescent, Obesity

Painful lesions in axillae

Catarino, Sara[1]; Vieira, Beatriz[2]; Cruz, Maria João[3]; Brito, Hernâni[2]
[1]Paediatrics Department, Centro Materno Pediátrico, Centro Hospitalar Universitário de São João, Porto; [2]Paediatrics Department, Póvoa de Varzim/Vila do Conde Hospital Centre, Póvoa de Varzim, Portugal; [3]Dermatology and venereology Department, Centro Hospitalar Universitário de São João, Porto

Background: Hidradenitis Suppurativa (HS) is an inflammatory, chronic and disfiguring skin disease characterized by recurrent swollen and painful lesions which might cause abscesses, boil-like lumps, cysts, scarring and skin sinuses. The clinical course is highly variable, ranging from mild to severe forms of presentation. It often occurs in intertriginous areas, as the axillae, groin, anal and breast regions. The onset of symptoms typically occurs between puberty and the age of forty, and females are more likely to develop HS than males. Obesity, smoking, diet, ethnicity, genetic susceptibility and hormonal factors are cited as factors that may be associated with the development or exacerbation of HS.

Case Presentation Summary: A 17-year-old girl presented with painful skin lesions in both axillae with a one-and-a-half-year evolution and previous multiple health care visits. She had no fever and no other lesions. She carried no history of a similar skin condition and was previously healthy aside from the excess weight. Earlier, she was medicated for three months with topical (clindamycin) and oral (doxycycline) antimicrobial therapy, showing no clinical improvement. On physical examination, she displayed painful fleshy lumps, tender subcutaneous nodules, hypertrophic fibrotic scars, and dermal contractures in both axillae (Figure 1). Regarding the lesions' appearance, contemplated with a careful look, she was diagnosed with Hidradenitis Supurativa after almost two years of the disease onset. The patient started therapy with rifampicin and clindamycin with mild improvement and was referred to Pediatric Dermatology. After two months of follow-up, lack of significant clinical improvement, and maintained drainage from the sores, she switched to biological therapy with adalimumab biosimilar. Subsequently, the lesions regressed gradually (Figure 2). However, due to its remaining scars and draining appearance, she was referred to Plastic Surgery and awaits surgical flap reconstruction bilaterally.

Learning Points Discussion: Data on HS in the pediatric population are limited, and delays in diagnosis are common. In pediatric patients, obesity or overweight status is commonly

documented with HS, as in this case. This condition has a significant impact on quality of life and self-esteem, and early recognition and treatment are critical to minimize the effects of the disease.

ID: 287
Poster Presentation
Topics: RHEUMATOLOGY
Keywords: juvenile idiopathic arthritis associated uveitis, systemic biological therapy, methotrexate

The need for topical glucocorticoid therapy in patients with juvenile idiopathic arthritis associated uveitis on systemic biological therapy - longitudinal observational study during 7 years

Barisic, Marija[1]; Sestan, Mario[2]; Peric, Sanja[2]; Kifer, Nastasia[1]; Ivkic, Petra Kristina[2]; Galiot Delic, Martina[2]; Jandrokovic, Sonja[2]; Held, Martina[1]; Frkovic, Marijan[1]; Jelusic, Marija[1]; Vukojevic, Nenad[2]
[1]University Hospital Centre Zagreb, Department of Ophthalmology, University of Zagreb School of Medicine; [2]University Hospital Centre Zagreb, Department of Pediatrics, University of Zagreb School of Medicine, Zagreb, Croatia

Background: This research aimed to determine the need for topical glucocorticoid therapy (TGC) in patients with juvenile idiopathic arthritis-associated uveitis (JIA-U) on systemic biological therapy in comparison to patients treated with methotrexate (MTX) only.

Methods: We have conducted a longitudinal observational study. We included JIA-U patients in whom systemic immunomodulatory treatment (IMT: biologics and/or MTX) was introduced and followed at least 3 months between 2011 and 2017. The data about the number of cells in the anterior chamber (AC) according to Standardization of Uveitis Nomenclature (SUN) Working Group criteria, about TGC and systemic therapy and JIA complications were collected on each examination. Generalized linear mixed models were used to analyze the relationships between treatment with biologics, MTX, TGC and the grade of inflammation in AC according to SUN criteria.

Results: 38 JIA-U patients (69 eyes) with median (range) age of 4.9 (2-15) years and follow up period of 209 (19-381) weeks were included. There were a total of 1205 examinations. At the first examination, JIA-U was detected in 16 (42.1%) of patients, 59 (79.7%) of the eyes had ≤1+ cells in the AC, and in 19 (50%) of JIA-U patients, complications were already present. MTX was introduced in 23 (60.5%) JIA-U patients before the inclusion in the study; 8 (21%) had already received biologics, while in 4 (10.5%), prior systemic glucocorticoids were also used. Until the end of the study, all patients received MTX and 40% JIA-U patients were treated with biologics. The average number of TGC doses decreased steadily in the first 12 months, from 3.74 doses at baseline, 0.95 doses at 12th month, to 0.72 doses in the 48th month of follow-up. After Friedman and the post hoc test, a statistically significant difference in the daily doses of TGC could be seen from the 12th month after application of systemic IMT. The number of daily doses of TGC per eye and the degree of inflammation in AC per eye decreased over time. Using generalized linear mixed models, it was shown that the treatment with biologics, but not with MTX and systemic glucocorticoids, was associated with lower intensity of TGC therapy. Treatment with biologics and systemic glucocorticoids, but not with MTX, was associated with a lower degree of inflammation in AC.

Conclusions: The results showed that the application of systemic biological therapy might result in less intensive TGC therapy, resulting in glucocorticoid-sparing potential and reducing intraocular inflammation.

ID: 238

Poster Presentation

Topics: INFECTIOUS DISEASES, HAEMATOLOGY / ONCOLOGY

Keywords: Neuroblastoma, tuberculosis, child, tumor

Thoracic hypotransparency in an infant with tuberculosis close contact: should we undergo for differential diagnosis?

Monteiro, Sara[1]; Fernandes, Alexandre[2]; Ferreira-Magalhães, Manuel[3,4]; Ramos, Ana[3]

[1]Paediatric Department, Centro Materno Infantil do Norte, Centro Hospitalar Universitário do Porto; [2]Paediatric Infectious Diseases Unit, Centro Materno Infantil do Norte, Centro Hospitalar Universitário do Porto; [3]Paediatric Pulmonology Unit, Centro Materno Infantil do Norte, Centro Hospitalar Universitário do Porto; [4]CINTESIS – Centre for Health Technologies and Information Systems Research – Faculty of Medicine, University of Porto

Background: Neuroblastoma is the most common extracranial solid tumour in childhood. The adrenal gland is the most common primary site (40%), followed by abdominal (25%), thoracic (15%), cervical (5%), and pelvic sympathetic ganglia (5%). Patients with localized disease can be asymptomatic.

Case Presentation Summary: A 9-month-old infant with a previous hospitalization at 2.5 months for uncomplicated bronchiolitis, adequate neurodevelopment and updated National immunization schedule (including Bacillus Calmette–Guérin [BCG]) at 2 months of age was admitted to the pediatric ward for suspected pulmonary tuberculosis. When he had 5 months of age, his maternal great-uncle was diagnosed with bacilliferous pulmonary tuberculosis, with whom he had close contact (cumulative time of > 8 hours). During contact screening, the infant performed a chest X-ray showing hypotransparency in the left upper lobe and was sent to the hospital for diagnostic and therapeutic guidance. At admission, he was asymptomatic with a good weight-for-height evolution and an unremarkable physical examination. No BCG scar was observed. The analytic workup within the first days of admission revealed: complete blood count with 380 monocytes/ul, erythrocyte sedimentation rate of 8 mm and C-reactive protein of 0.319 mg/L, glutamic oxaloacetic transaminase of 37 U/L and lactate dehydrogenase of 356 U/L, negative cultures of gastric aspirate for Mycobacterium tuberculosis, tuberculin skin test without any local reaction, and anti-HIV-1,2 negative. After this, he performed a thoracic angiotomography that revealed a mass in the posterior mediastinum, in a left vertebral para-hilar location, with 4x3.5x5.2cm, extensively calcified, suggesting a neuroblastoma. The infant was transferred to an Oncology Institute for treatment (Figures 1 and 2).

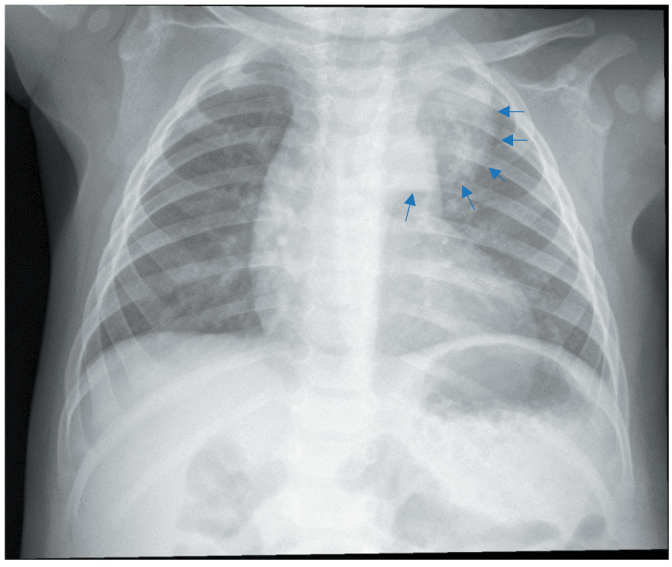


Figure 1. Chest X-ray image revealing a well defined hypotransparancy in the left upper lobe (limiting arrows).

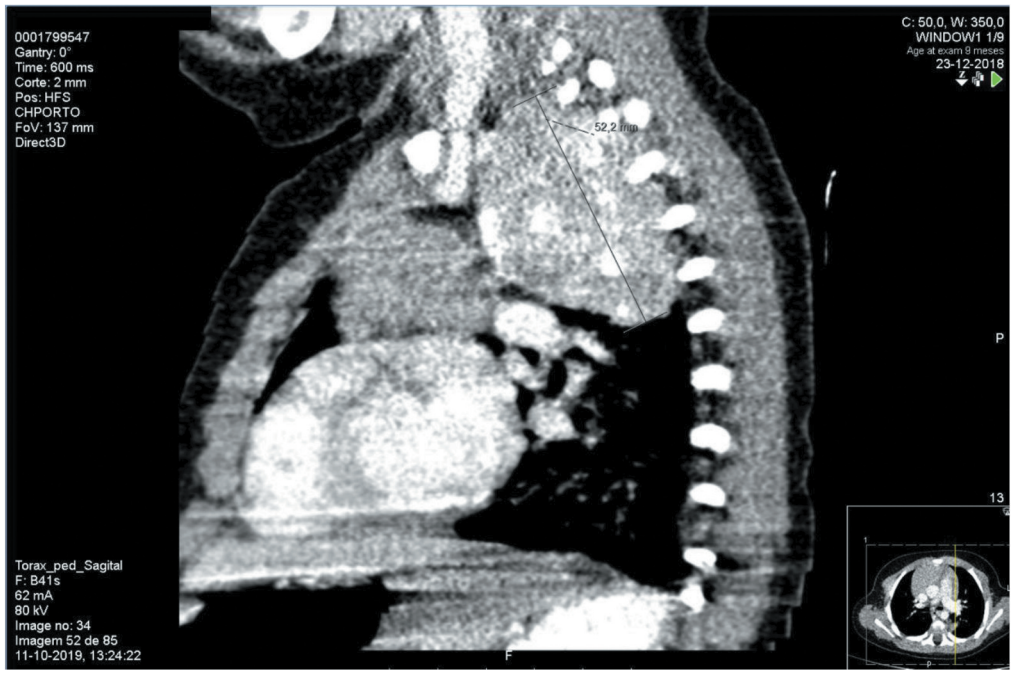


Figure 2. Thoracic angiotomography image revealing an extensively calcified mass in the posterior mediastinum with 4 × 3.5 × 5.2 cm.

Learning Points Discussion: This case illustrates a primary tumor with thoracic location which, as it occurred, can be detected incidentally on radiographs. This highlights the importance of structured clinical reasoning and the development of a dynamic management decision despite the strong suggestion of another diagnosis.

ID: 349

Poster Presentation

Topics: HAEMATOLOGY / ONCOLOGY

Keywords: Von Willebrand disease; type 3; Hemophilia A; consanguinity.

Von willebrand disease type 3: a challenging diagnosis

Fernandes, Andreia[1]; Oliveira, Iris Rocha[1]; Pereira, Mafalda João[1]; Rocha, Elsa[1]; Caetano, Gonçalo[2]
[1]Pediatric Department, Centro Hospitalar Universitário do Algarve, Portugal; [2]Hematology Department, Centro Hospitalar Universitário do Algarve, Portugal

Background: Von Willebrand disease (VWD) is the most common inherited bleeding disorder, with an estimated prevalence of 1% in the general population. It results from either quantitative (type 1 and 3) or qualitative (type 2) defects in the Von Willebrand factor (VWF), which promotes platelet aggregation and stabilizes factor VIII (FVIII). There is limited data about VWD in the pediatric population, especially regarding VWD type 3 (VWD3). VWD3 is autosomal recessive and is the severest and rarest form (1-5% of VWD), with a prevalence of 1-5.3/1000000, being more frequent in areas/families with high consanguinity. It's characterized by very low/absent VWF levels and consequently a significant decrease in FVIII, causing both mucocutaneous and haemophilia-like bleeding that may start early in life. Epistaxis is the most prevalent symptom, followed by hemarthrosis in males and menorrhagia in females. The presence of haemophilia-like bleeding and very low FVIII may lead to misdiagnosis with haemophilia A.

Case report: A previously healthy 12 month-old male infant of gipsy ethnicity, with 2 prior episodes of epistaxis, one of them requiring local hemostatic measures, came to our emergency department with persistent unilateral epistaxis after nose trauma while crawling. Physical examination

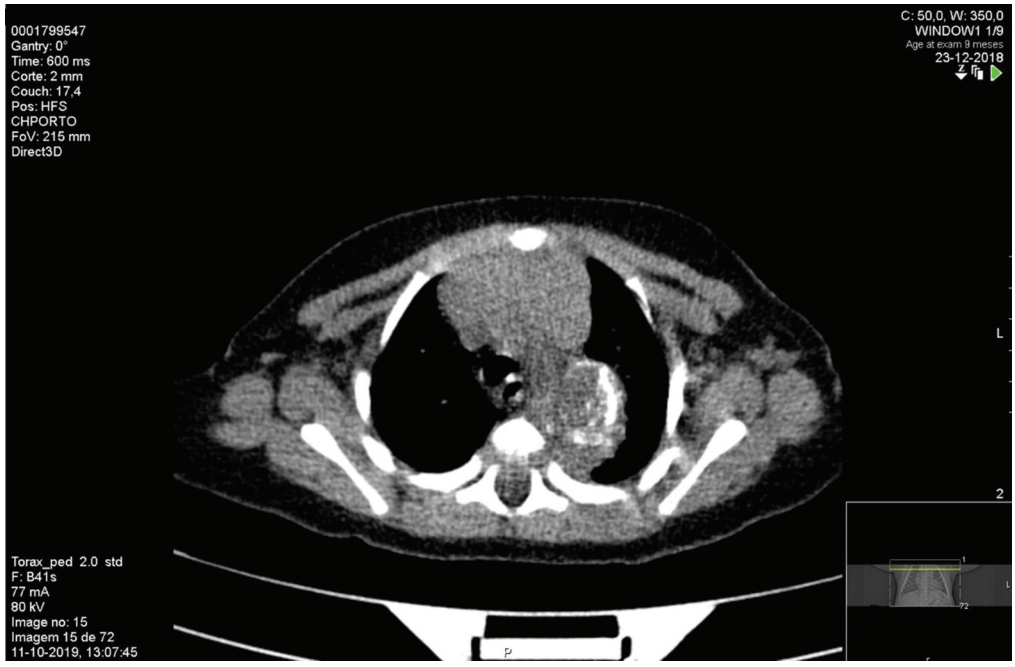


Figure 3. Thoracic angiotomography image revealing a mass in a left vertebral para-hilar location suggestive of a neuroblastoma.

revealed mild active bleeding on the right nostril and mild bruising throughout the body. The general blood study revealed hypochromic microcytic anaemia and prolongation of activated partial thromboplastin time (APTT). The bleeding stopped with local hemostatic measures. He was referred to Pediatric Hematology and continued studies. His parents are second-degree cousins, without any known diseases but, the father had frequent unilateral epistaxis, and the mother had menorrhagia. He presented with very low FVIII (3,0%). The genetic study excluded Hemophilia A and confirmed a VWF p.Gln1311* homozygous mutation compatible with VWD3.

Discussion: Being an autosomal disorder, VWD3 occurs equally in both sexes, but some studies worldwide report higher diagnostic rates in females. The rarity and lack of VWD3 awareness and the use of restrictive coagulation test panels are important causes of males being misdiagnosed and inadequately treated as haemophilia A. This case is uniquely challenging in its VWD3 presentation because it had all the pitfalls for a haemophilia A misdiagnosis. Frequent bleeding at early ages, especially starting while crawling/walking, suggests a bleeding disorder. VWD3 diagnosis requires a high level of suspicion; important cues are consanguinity and positive gender unspecific family bleeding history.

ID: 312

Poster Presentation

Topics: GENERAL PEDIATRICS, EMERGENCY PEDIATRICS

Keywords: endotracheal, intubation, pediatric, endoscopic, camera

Endotracheal intubation in pediatric manikin using an endoscopic camera-based stylet system

Siddiqui, Meraj[1]; Baskın, Esra[2]

[1]Department of Pediatrics, Başkent University, Ankara, Turkey; [2]Department of Pediatric Nephrology and Rheumatology, Başkent University, Ankara, Turkey

Introduction: In children, endotracheal intubation is often considered a challenging procedure and is always advised to perform by trained physicians because of anatomical and physiological

differences compared to adults. Direct visualization of the cords and endotracheal tube passing through is often considered a preliminary step, followed by several confirmatory techniques for successful intubation. Therefore, we developed a cheap and disposable/or reusable endoscope camera-based stylet system for endotracheal intubation in pediatric patients. The ECB stylet comprises a semi-flexible tube body with a frontal and distal end. The frontal end having a camera with an IP67 steel casing provides a wide field of vision. The system allows users to visualize the vocal cords, trachea, and carina on the smartphone or monitor screen.

Methods: We studied tracheal intubation in pediatric manikin by using the ECB stylet system. The correct localization of the endotracheal tube above the carina by this system was examined. Five pediatric residents performed intubation of pediatric manikin through ECB stylet system 3 times each. The camera probe of internal diameter 3.9mm was inserted in the endotracheal tube of ID 4.5mm and placed into the oropharyngeal cavity with the patient's mouth opened with the help of a laryngoscope blade. The ETT was inserted into the trachea through the vocal cords and further inserted up to the carina. Once the desired distance was matched, the endoscope camera probe was withdrawn, leaving the tip of the ETT just 15mm-20mm above the carina.

Results: All 15 pediatric manikin endotracheal intubations were successful. Overall, 93.3% of the ETT placements were correctly located just 15mm-20mm above the carina. The mean time of procedure was 33,8 (min 28, max 50) seconds. No failed attempt was observed while using the ECB stylet system.

Conclusion: The ECB stylet system allows users to visualise the carina directly, facilitating proper tube placement in the pediatric manikin model used in this study. The ECB stylet system can significantly improve the intubation procedure without requiring time- consuming confirmatory techniques in non-emergency and emergency situations.

ID: 273
Poster Presentation
Topics: NEONATOLOGY
Keywords: Auditory brainstem response, hyperbilirubinemia

Hearing screening with ABR tests in neonates with hyperbilirubinemia

Hristova, Aleksandra
General Hospital, North Macedonia, Republic of

Introduction: Hyperbilirubinemia is toxic to the auditory pathways and the central nervous system, leaving sequels such as hearing loss and encephalopathy. The damage to the auditory system occurs primarily within the brainstem and cranial nerve VIII and manifests clinically as an auditory neuropathy spectrum disorder.

Aim: To establish the relationship that exists between hyperbilirubinemia at birth as a risk factor of neonatal hearing loss in children born in General Hospital Kumanovo.

Methods: We carried out 80 neonates categorized into two groups. Group A (n = 40), neonates with hyperbilirubinemia and Group B (n = 40) neonates without hyperbilirubinemia.

Results: 12 neonates were boys, and 28 neonates were girls from group A and 15 boys and 25 girls from group B. There was a statistical difference between Group A and Group B regarding AABR. Also, our study showed the area under the curve and diagnostic accuracy of total serum bilirubin for detecting hearing screening results at a cut-off point 21 mg/dl.

Conclusion: Our study showed a relevant association between bilirubin levels and abnormal hearing screening results and the importance of AABR tests in our neonatal centre.

ID: 269
Poster Presentation
Topics: NEONATOLOGY
Keywords: Neonatal hearing screening; hearing loss; auditory brainstem response

The results of universal newborn hearing screening data of 1552 newborns from General Hospital Kumanovoo

Hristova, Aleksandra[1]; Dimitrioska, Renata[2]
[1]General Hospital, North Macedonia, Republic of; [2]UK of Obstetrics and Gynaecology, North Macedonia

Introduction: Prevalence of sensorineural hearing loss is 1.3 per 1000 newborns. Hearing loss on both ears more than 40 dB impairs speech and language development with low mental and intellectual development and social distance accompanied by an emotional disorder. Early detection within the first 6 months of hearing loss and early beginning with rehabilitation avoid many consequences associated with hearing impairment. Hearing screenings with brainstem responses on every full-term and late pre-term newborn are conducted within our Department of Neonatology.

Objective: This study aimed to examine hearing function in newborns with and without risk factors for hearing loss. We investigated the feasibility of AABT in the early detection of hearing loss. We also wanted to introduce universal hearing screening in newborns in our hospital.

Methods: There were 1552 newborns tested on both ears with Maico MB 11, Berafon. The newborns were divided into 2 groups: first without risk factors and second with risk factors. The initial AABR test was conducted within the period of 6 to 48 hours after birth. If the results were “refer”, we repeat the test during the 2nd week after birth. If the 2nd test was negative, we suggest follow up tests: tympanometry, click ABR, OAE to be conducted within the Clinic of ORL Skopje.

Results: Showed screening pass of 82% of the newborns in the first protocol and 98.44% in the second protocol. 1.5% of the newborns had positive screening results for hearing loss. They were referred for further audiological tests to confirm or exclude hearing loss. Audiological examination was performed up to the third month of life.

Conclusion: AABR test is a confidential non-invasive, and feasible method and can help to detect hearing impairment

ID: 185
Poster Presentation
Topics: RHEUMATOLOGY
Keywords: IgA vasculitis, HGMB1, AGER

The contribution of single nucleotide polymorphisms of genes HMGB1 and AGER in the susceptibility and clinical picture of patients with IgA vasculitis

Held, Martina[1]; Batnozic Varga, Mateja[2]; Sestan, Mario[1]; Sapina, Matej[3]; Kifer, Nastasia[1]; Grguric, Danica[1]; Crkvenac Gornik, Kristina[4]; Frkovic, Marijan[1]; Arvaj, Nena[5]; Wagner, Jasenka[5]; Jelusic, Marija[1]

[1]University Hospital Centre Zagreb, Department of Pediatrics, University of Zagreb School of Medicine, Zagreb; [2]University Hospital Centre Osijek, Department of Pediatrics, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, Osijek, Croatia; [3]University Hospital Centre Osijek, Department of Pediatrics, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, Faculty of Dental Medicine and Health, Osijek, Croatia; [4]University Hospital Centre Zagreb, Department of laboratory diagnostics, University of Zagreb School of Medicine, Zagreb, Croatia; [5]Department of Biology and Medical Genetics, Faculty of Medicine, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia

Background: Previous genome-wide association studies have established an association between IgA vasculitis (IgAV) susceptibility and the HLA class II genes, although many small studies have indicated the importance of variants in various non-HLA genes in the manifestation of different disease phenotypes. This research aimed to investigate single nucleotide polymorphisms (SNPs) of genes HMGB1 and AGER encoding for high mobility group box-1 (HMGB1) and receptor for advanced glycation endproducts (RAGE), both acting as mediators of inflammation, in the susceptibility and clinical features of patients with IgAV.

Methods: Genomic DNA was extracted from whole blood samples, after which the HMGB1 and RAGE gene polymorphisms were genotyped using a real-time polymerase chain reaction. The presence and frequency of polymorphisms in HMGB1 (rs2249825, rs1045411, rs1060348, rs1412125 and rs41369348) and RAGE (rs1800625, rs1800624, rs2070600 and rs3134940) were determined. Clinical data were collected from the database with systematic analysis of patients with IgAV in the Croatian population from two Croatian University Centers for pediatric rheumatology and nephrology care.

Results: The research included 81 pediatric IgAV patients, of whom 45 were boys and 36 girls, as well as 150 age- and sex-matched healthy controls without any history of autoimmune disease. The median (range) age of IgAV patients was 6.25 (4.60-8.20) years, and among them, 71.6% had joint involvement, 29.62% had gastrointestinal manifestations, while 27.16% patients developed nephritis. The purpuric rash, which extended from lower extremities to the trunk, upper extremities and face (generalized rash), was present in 43.20% of patients, and 27.16% had at least one relapse. Among the analyzed polymorphisms, only in the rs1412125, there was a deviation from the Hardy Weinberger equilibrium. Compared to healthy controls, there was no statistically significant association of the analyzed polymorphisms with the IgAV susceptibility. However, the two polymorphisms proved to be linked with a well-defined clinical phenotype. Polymorphism rs2070600 was significantly related to the development of nephritis in IgAV, while rs1412125 was associated with gastrointestinal involvement. The IgAV patients carrying the T allele (rs2070600) of the AGER had a significantly increased risk of nephritis development compared with the IgAV patients with homozygous CC genotype in dominant (OR 4.05, CI 1.09-15.03, p = 0.037) and additive genetic models (OR 3.95, CI 1.16-13.47, p = 0.049). The minor C allele (rs1412125) of the HMGB1 was found to significantly increase the risk of gastrointestinal involvement in an overdominant model with an odd allelic ratio of 2.78 (CI 1.04-7.43, p = 0.04).

Conclusions: Although neither of the analyzed HMGB1 and RAGE polymorphisms was associated with IgAV susceptibility, our results indicated that these polymorphisms might be involved in the pathogenesis of IgAV with a possible effect on different disease phenotypes.

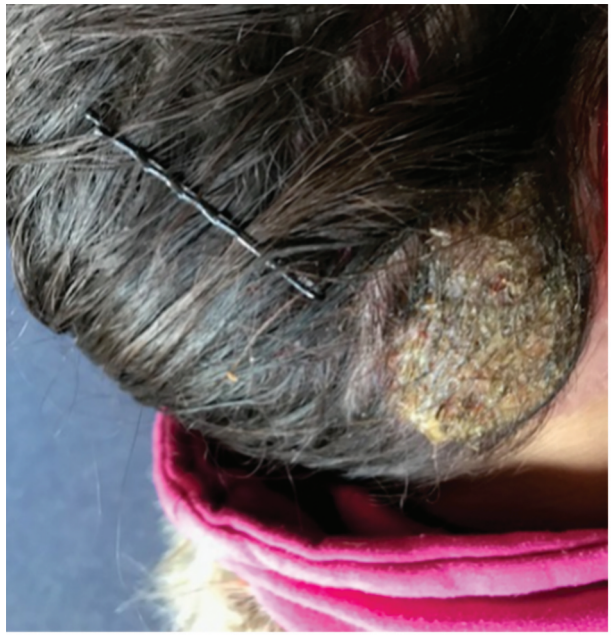
ID: 353

Poster Presentation

Topics: RARE DISEASES, NEUROLOGY

Keywords: KBG, behavior disorder, seizures, dysmorphisms

KBG Syndrome: A patient to remember



Reis, Gabriela; Mendo, Tânia; Carlos, Maria; Furtado, Maria Fátima
Unidade Local de Saúde do Baixo Alentejo, Portugal

Background: KBG syndrome is an autosomal dominant neurodevelopmental disorder caused by mutations in ANKRD11. It is typically characterized by development delay/intellectual disability, behavioural issues and distinctive craniofacial dysmorphisms. Affected individuals may also have other skeletal abnormalities, seizure disorders and brain malformations. So far, only 218 cases have been reported or described worldwide. The authors aim to describe a rare case of KBG syndrome.

Case Presentation Summary: Previously healthy 3-year-old girl with no relevant family history, referred to a Neurodevelopmental Pediatrician for behavioural disturbance and sleep disorder. On physical exam, she presented broad eyebrows, synophrys, prominent nasal bridge and low hairline. The patient revealed aggressive and compulsive behaviour—no further changes on observation. From the additional study, blood tests and metabolic study had no changes. She underwent a neuropsychological test battery (Griffiths Mental Development Scale – Griffiths III) which showed evidence of mild intellectual disability, with delay in speech and motor development, as well as problems in memory and executive functioning. Brain MRI was normal. The patient was referred to Genetic Counseling. From the subsequent investigation, a de novo heterozygous pathogenic variant in ANKRD11 was detected (c.6756delG), which established the diagnosis of KBG syndrome. Since the diagnosis, the patient has had multiple admissions for seizures. EEG showed parieto-occipital epileptiform activity. She is currently under therapy with phenytoin and levetiracetam. The patient also had multiple episodes of recurrent otitis media. Audiometry showed mild bilateral deafness. Currently, she benefits from occupational therapy, speech therapy and curricular adaptation for learning disabilities.

Learning Points Discussion: Although known to be a rare condition, KBG syndrome has been increasingly reported in recent years. Due to its uncommonness and variability in the clinical findings, it requires clinical vigilance and close follow up. It is essential to detail the classical and variant presentations to better understand the natural history, comorbidities, and prognosis. The description of further cases is necessary to better characterization of this condition.

ID: 350
Poster Presentation
Topics: INFECTIOUS DISEASES, DERMATOLOGY
Keywords: Kerion, fungus, bacterial infection, children

Kerion Celsi: see beyond the obvious

Reis, Gabriela; Mendo, Tânia; Seves, Maria Graça
Unidade Local de Saúde do Baixo Alentejo, Portugal

Background: Tinea capitis is one of the most common dermatophytosis in children and represents a public health concern. The most severe and inflammatory presentation, Kerion celsi, is considered to be an exaggerated cell-mediated response to the fungus, caused by the weak adaptation of the dermatophytes to the host. The clinical presentation consists of an often-solitary inflammatory lesion of the scalp, which is commonly confused with bacterial abscesses due to the purulent drainage.

Case Presentation Summary: Previously healthy 11-year-old teenager presented to our emergency department with a one-month history of right retro auricular skin lesion, with recent spontaneous leaking. She was under antibiotics therapy with oral flucloxacillin for seven days, with no improvement. Physical examination revealed a large erythematous lesion (8 cm diameter) extending through the scalp with suppurative discharge (Figure). She has been admitted as an inpatient with the diagnosis of Tinea capitis with secondary bacterial infection, and intravenous flucloxacillin (100mg/kg/day) and Itraconazole (100 mg/kg/day) was prescribed. On day 6, topic sertaconazole was added to the prescription. No surgical drainage was required. She was discharged on day 10, clinically improved. From the additional follow-up as an outpatient, treatment with ItraconazoleItraconazole was maintained for one month, with complete resolution of the lesion.

Learning Points Discussion: Kerion Celsi treatment requires the use of antifungal agents, such as ItraconazoleItraconazole or fluconazole. Adjuvant topical treatments are controversial but may be used to prevent the spread of infection. Treatment duration should be individualized according to the severity and clinical evolution. Due to the high potential for misdiagnosis, patients are frequently treated with antibiotics, which may lead to more extensive inflammation, scarring and eventually alopecia. Therefore, the authors aim to highlight the importance of prompt diagnosis of this dermatophytosis to prevent potential permanent sequelae.

ID: 165
Poster Presentation
Topics: GENERAL PEDIATRICS, RARE DISEASES
Keywords: Mesothelial inclusion cyst; benign cystic peritoneal mesothelioma

Bilateral paratubal mesothelial cysts: a rare diagnosis

Moreira, Tatiana[1]; Dias, Margarida[1]; Monteiro, Joana Mafalda[2]; Vasconcelos-Castro, Sofia[2]; Estevinho, Norberto[2]; Maia, Ana[1,3]
[1]Department of Pediatrics, Centro Hospitalar Universitário de São João, Portugal; [2]Department of Pediatric Surgery, Centro Hospitalar Universitário de São João, Portugal; [3]Department of Gynaecology-Obstetrics and Pediatrics, Faculty of Medicine of the University of Porto, Portugal

Background: Mesothelial inclusion cysts (MIC) are rare benign neoplasms of the peritoneum, more prevalent in young women. MIC was described for the first time by Smith and Mennenmeyer in 1979, with some 140 cases described in the literature.

Case Presentation Summary: We report the case of a 15-year-old teenager presenting with recurring lower urinary tract symptoms. The physical examination revealed a large suprapubic mass, soft and mobile, nonpainful. Full blood count, urea, electrolytes and urinalysis were all normal; tumoral biomarkers were negative. An abdominal ultrasound identified a large supravesical cystic collection with an approximate volume of 970cc. A contrast MRI showed a cystic lesion with hypersignal on T2-weighted and hyposignal on T1- weighted sequences, measuring 16x8.9x13.2cm (TxAPxL). In its lower, posterior and left part, two other ovoid cystic nodular images were observed with 16- and 15-mm. Video-assisted laparotomy was performed with total excision of the lesions. The origin of the larger cyst was identified in the mesosalpinx of the right fallopian tube and 3 smaller cysts were also identified dependent on the left mesosalpinx. Cysts and intracystic fluid were sent to histopathology, confirming the diagnosis of paratubal MICs.

Learning Points Discussion: Due to the uncommonness of this tumour, insidious and non-specific patient presentation, and comparable features on imaging, diagnosis of this pathology is difficult and mainly based on histological findings. A timely diagnosis of MIC is of the utmost importance to exclude a malignant etiology and prevent a dramatic change in outcome if severe complications develop. Despite the excellent prognosis, a close follow-up is advisable due to the high rates of local recurrence.

ID: 260

Poster Presentation

Topics: GENERAL PEDIATRICS, RARE DISEASES, ADOLESCENT MEDICINE

Keywords: Down syndrome, Regression, adolescence, trisomy 21, disintegration

Behavioral regression in adolescents and young adults with Down syndrome, a case report from Qatar

Mohamed, Tasabeh[1]; Kamal, Madeeha[2]; Benini, Ruba[3]
[1]Hamad Medical corporation, Qatar; [2]Sidra Medicine, Department of Pediatrics, Division of Adolescent Medicine, Doha, Qatar; [3]Sidra Medicine, Department of Pediatrics, Division of Pediatric Neurology, Doha, Qatar

Introduction: Over past years, there have been increasing reports about the onset of regression in adolescents and young adults with Down syndrome. Pathophysiology is not yet fully understood.

Case: An 11 old girl with Trisomy 21 (T21), severe learning and intellectual disabilities and autoimmune hypothyroidism was seen in the clinic for subacute onset of autistic-like regression in her previously learned adaptive skills. Prior to the onset of her symptoms, despite her intellectual impairment, She was pleasant and able to carry out age-appropriate conversations. She was independent in self-care and had a regular sleep cycle. Over the course of six months, she began to experience stereotypical movement followed by a gradual decrease in speech and a new-onset phobia of heights and agoraphobia. She also developed mood swings with sudden unexplained bouts of crying or excessive laughter. She started to talk to herself as if having a dialogue with someone. She developed insomnia, loss of bladder control and became dependent on her mother for her daily activities like grooming and using the toilet. During the examination, she seemed to be in her own world with poor eye contact and no verbal communication. Systemic examination was unremarkable. Bloodwork showed normal CBC, RFT, LFT, electrolytes, and HA1c levels. TFT was normal. Thyroid peroxide antibodies (TPO) was elevated - 920 kIU/L and was noted to be elevated for two years prior to the regression. EKG and Echocardiography were unremarkable. EEG was normal. MRI brain showed bilateral ganglia calcification, thickened appearance of the corpus callosum. A three-month trial of SSRIs did not yield a response. She is currently on risperidone 1mg at bedtime to follow the response.

Discussion: Over the past two decades, there have been increasing attention to subacute regression in adolescents and young adults with DS. No internationally acknowledged diagnostic label for this disorder. Pathophysiology is not fully understood. Many theories were suggested, including underlying medical disorders or psychiatric disorders. As shown in reported cases, treatment of presumed underlying disorders usually does not lead to symptoms resolution. The Down syndrome Medical Interest group (DSMIG-USA) suggested a definition to this entity with 28-core features; they include regression in activities of daily living, speech, social skills and cognitive- executive skills as well as motor symptoms3. No consensus on the management of this disorder as of yet. However, most cases reported are given courses of anti-depressants, neuroleptics and/or anxiolytics. One of the largest case series of Down syndrome patients with regression, the vast majority (43%) of cases showed partial recovery to their pre-regression state. This case underscores the need for a unified approach to managing this disorder to guide the physicians and families and avoid unnecessary investigations and medications.

ID: 120

Poster Presentation

Topics: GENERAL PEDIATRICS, GASTROENTEROLOGY, NEONATOLOGY

Keywords: infantile colic, infantile colic management, simethicone, probiotics

Diagnostic and treatment preferences of paediatricians for infantile colic management; survey results from Turkey

Hızlı, Samil[1]; Can, Demet[2]; Kılıc, İlknur[3]; Orun, Emel[4]; Ozkan, Hasan[5]; Tunc, Turan[6]

[1]Pediatric Gastroenterology Division, Hepatology and Nutrition, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [2]Pediatric Allergy Division, Balıkesir University, Balıkesir, Turkey; [3]Neonatology Division, Ataşehir Florence Nightingale Hospital, Istanbul, Turkey; [4]Social Pediatrics Division, Liv Hospital, Ankara, Turkey; [5]Neonatology Division, Dokuz Eylül University, İzmir, Turkey; [6]Neonatology Division, Ataşehir Memorial Hospital, Istanbul, Turkey

Background and Objective: Due to limited knowledge on the etiopathogenesis of infantile colic (IC) and the insufficiency of data regarding current treatments, different approaches emerge in terms of diagnosis and treatment modalities globally and also in Turkey. The objective of this study was to observe how infantile colic is diagnosed and treated by paediatricians in Turkey.

Methods: An anonymous electronic questionnaire was used to collect the respondents' opinions. The study questionnaire comprised 4 different sections with 56 multiple-choice questions covering demographic features, diagnostic approach, treatment preferences and response to treatment.

Results: A total of 375 paediatricians responded to the survey. Respondents' demographic profiles were observed to fairly represent the paediatricians in different cities, state and private healthcare providers in Turkey. The findings that suggested the diagnosis of IC the most were chosen as uncontrollable crying, crying at the same time every day and discomfort (89%, 86% and 83%, respectively). Fifty-three per cent of the participants stated that they established the IC diagnosis based only on their clinical experience. Eighty-six per cent of the participants stated that they gave treatment to IC patients. Factors that most affected the decision to start treatment were identified as parent discomfort, decreased family quality of life, and crying duration (68%, 66%, and 54%, respectively). Application of soothing methods, probiotics, and simethicone were identified as the most frequently used treatment modalities (frequency ranking; 81%, 76%, and 50%, respectively). Of the participants, 98% stated that they used probiotics as supplements; on the other hand, 72% of the participants indicated that they used simethicone as the only medical treatment to treat IC. The question about the participants' observations regarding the response to probiotic treatment was answered by 71% of the participants with decreased crying duration, while easier stool/gas passage and resolved digestion problems were the other frequent observations (54% and 49%,

respectively). The observations related to the response to simethicone treatment also included decreased crying duration in addition to decreased crying periods after feeding and easier gas/stool passage (67%, 47%, and 44%, respectively).

Conclusions: Survey results revealed that the majority of the paediatricians in Turkey preferred probiotic supplements and simethicone as the only medical treatment to treat IC, and they observed clinical benefits from them. Insights generated by this study will be helpful to guide future efforts to improve the management of infantile colic by paediatricians.

ID: 139

Poster Presentation

Topics: GENERAL PEDIATRICS, RARE DISEASES

Keywords: Chromosome 17p13.3 microduplication, Congenital heart disease, Congestive heart failure, Ventricular septal defect

First reported case of moderate sized ventricular septal defect complicated with congestive heart failure in a Chinese Han infant with class II chromosome 17p13.3 microduplication

Yang, Yung-Yu[1]; Liu, Chun-Ting[2]; Pai, Li-fan[2]; Chen, Yi-Hui[3]; Hu, Chih-Fen[2]; Chen, Shyi-Jou[2,4]; Lin, Chien-Ming[2]; Hsu, Wan- Fu[2]

[1]Department of General Medicine, Tri-Service General Hospital, National Defense Medical Center, Tapei, Taiwan; [2]Department of Pediatrics, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan; [3]Graduate Institute of Aerospace and Undersea Medicine, National Defense Medical Center, Taipei, Taiwan; [4]Graduate Institute of Microbiology and Immunology, National Defense Medical Center, Taipei, Taiwan

Background: Early identification of chromosomal abnormality-related congenital heart diseases is accomplished by advanced karyotyping techniques and high-resolution ultrasound. On the other hand, a comprehensive understanding of cardiac anomaly clinical manifestations still lacks given limited reported cases. We herein present a case of moderately sized ventricular septal defect (VSD) associated with class II chromosome 17p13.3 microduplication.

Case Presentation Summary: A two-month-old boy with dysmorphic facial features including dolichocephaly, down-turned mouth, and triangular face was admitted given frequent vomiting during feeding, diaphoresis and dyspnea with subcostal retractions for two weeks (Figure 1(a)). As the second child of nonconsanguineous healthy Han Chinese parents, he was born at full term with normal anthropometric measurements. Given increased Down syndrome risk (1/61) shown in serum screening, his 34-year-old mother underwent amniocentesis at week 19 of gestation, and subsequent chromosomal analysis by microarray comparative genomic hybridization (aCGH) revealed a 249-Kb de novo duplication on chromosome 17p13.3 consisting of the PAFAH1B1 gene (Figure 1(b)) but not another well-known candidate gene YWHAE (i.e., arr 17p13.3 (2,339,561-2,588,655)×3). A fetal cardiac anomaly scan at week 34 of gestation indicated a 0.3-cm VSD. Upon admission, the body weight was 3.71 kg, which was only 0.57 kg higher than his birth weight and apparently fell of the normal growth curve. Physical examination revealed a grade III/VI pan-systolic murmur over the left upper sternal border and hepatomegaly, accompanied by elevated serum Pro-BNP level (3119 pg/ml). Chest radiography showed cardiomegaly (cardiothoracic ratio 0.66) and pulmonary congestion. Sonography of heart and brain demonstrated a moderate-sized perimembranous-outlet VSD (Figure 1(c)) with relative pulmonary stenosis and subtle corpus callosum hypoplasia, respectively. The aforementioned findings consolidated the diagnosis of VSD with congestive heart failure. Medications including digoxin, Captopril, Furosemide and adequate fluid restriction were applied, and restricted growth caused by intermittent refusal of swallowing and prolonged feeding improved gradually.

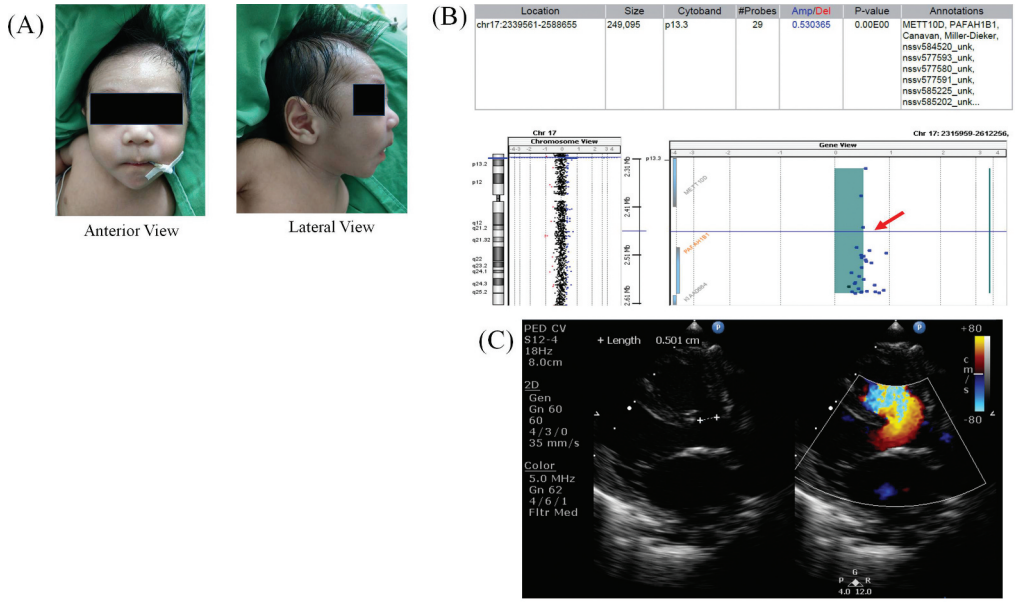


Figure 1. (a) Anterior and lateral view of the patient's face showed dolichocephaly, downturned mouth, triangular face and diaphoresis. (b) Result from aCGH indicated a 249-kb duplication on chromosome 17p13.3 containing *PAFAH1B1* gene. (c) Parasternal long axis view of echocardiogram revealed a 0.501 cm ventricular septal defect.

Learning Points Discussion: As a de novo submicroscopic chromosomal rearrangement, class II microduplication on chromosome 17p13.3 is associated with various developmental, psychomotor, brain and facial abnormal phenotypes, except with merely sporadic cases of congenital heart defects, including the spontaneously closed VSD and mild, severe patent foramen ovale. Notably, our patient demonstrated a more severe septal defect with congestive heart failure, feeding difficulties and growth restriction, which was unprecedented in the Asian population. Albeit playing mostly unknown roles in cardiovascular development, PAFAH1B1 has been reported to be downregulated by microRNAs miR-125b and miR-139-5p, of which the deficiency was associated with cardiac hypertrophy, cardiac fibrosis, and perinatal death in animal models. We, therefore, present the case to raise clinical awareness of severe heart anomalies in patients carrying the chromosome 17 microduplication harbouring PAFAH1B1.

ID: 106
Poster Presentation
Topics: GENERAL PEDIATRICS, NEUROLOGY
Keywords: calvarium, imaging

Imaging of pediatric calvarial lesions

Nayab, Asra; Kalina, Peter
Mayo Clinic, United States of America

Objective: To describe the imaging characteristics of calvarial lesions in children.

Material and Methods: Several interesting and illustrative cases will be highlighted utilizing CT, MRI, Angiography, Radiographs, and Nuclear Medicine. Entities will include neoplastic, infectious, inflammatory, vascular, and congenital etiologies.

Results: While some of the described lesions are straightforward, several others will have a broad differential diagnosis that will need to be considered.

Conclusion: The imaging specifics of pediatric calvarial lesions are important to the pediatrician, neurologist, and surgeon when considering treatment options, intra-operative care, and post-treatment follow-up considerations.

ID: 365

Poster Presentation

Topics: GENERAL PEDIATRICS, RARE DISEASES, ADOLESCENT MEDICINE

Keywords: global developmental delay, intellectual disability, 2q37 microdeletion, psychomotricity, ongoing health care

Intellectual disability and reduced mobility in a case of 2q37 microdeletion syndrome: could the outcome be different?

Pissarra, Rita[1]; Duarte-Costa, Sílvia[2]; Gonçalves, Claúdia[3]; Rodrigues, Nádia[3]
[1]Pediatrics Department, Centro Hospitalar Universitário de São João, Porto, Portugal; [2]Pediatrics Department, Hospital Pedro Hispano, Matosinhos, Portugal; [3]Neurodevelopment Unit, Pediatrics Department, Hospital Pedro Hispano, Matosinhos, Portugal

Background: 2q37 microdeletion syndrome is a rare chromosomic anomaly involving deletion of chromosome band 2q37. It is characterized by developmental delay or intellectual disability, skeletal malformations and facial dysmorphisms.

Case Presentation Summary: 13-years-old female adolescent with 2q37 microdeletion syndrome followed in neurodevelopment and adolescent consultation. Facial dysmorphism was noted since birth, and skeletal malformations, including brachymetatarsia and small feet, were more evident with growth. She presented a global developmental delay, most notorious at the motor level and a severe intellectual disability with an intelligence quotient of 47 on the Wechsler Intelligence Scale for Children III at age 9. The adolescent presents several learning disabilities and poor relationships with peers despite curriculum adaptations and speech and occupational therapy at school. Due to her skeletal abnormalities, she presents unsteady gait with frequent falls in the first years of life, multiple limb fractures and surgeries, resulting in major functional limitation. These sequelae contribute to the current disability in self-care and household chores.

Learning Points/Discussion: This case intends to raise awareness for an accessible and efficient multidisciplinary system for intervention and ongoing care for children at risk of developmental disabilities. This kind of system is still practically non-existent not only in our country but worldwide. Psychomotor intervention, for example, centred on movement, promotes the child's learning process and autonomy. Could the exposed case have benefited from a greater investment in this area, recovering the perceptual- motor potentialities and avoiding potential falls and their sequelae in the short and long term? The authors wonder if an earlier interdisciplinary action would have changed the current little functionality of this adolescent. At a national and international level, there is an urgent need to rethink the relevance of pediatric ongoing health care in Development Disabilities and other chronic conditions.

ID: 233

Poster Presentation

Topics: GENERAL PEDIATRICS, RARE DISEASES

Keywords: Orofacial clefts, central nervous system anomalies

Orofacial clefs and central nervous system anomalies: 28 years' experience of multidisciplinary center

Curval, Ana Rita; Simoes, Diana; Vicente-Ferreira, Margarida; Magalhaes, Tiago; Maia, Ana

Department of Pediatrics; Centro Hospitalar Universitário de São João, Porto, Portugal

Background: Orofacial clefts (OFC) are the most common craniofacial malformations in the newborn, frequently associated with other congenital anomalies and part of a genetic syndrome. The etiology of OFC is complex, including multiple genetic and environmental factors. The central nervous system anomalies (CNSA) may be present and influence the outcome of these children. This study aimed to describe a population with OFC and associated CNSA.

Methods: Retrospective study of medical reports of patients that attend Cleft Lip and Palate multidisciplinary group at Hospital São João - Porto from January 1992 until December 2020. OFC were classified according to Spina classification: cleft lip (CL), cleft lip and palate (CLP), isolated cleft palate (CP) and atypical clefs (AC).

Results: There were a total of 673 patients, 384 (57,1%) males. Among patients with OFC, a syndrome was identified in 193 (28,7%) patients, family history was positive in 180 (26,7%), and 201 (29,9%) had a prenatal diagnosis. Associated congenital anomalies were found in 325 (48,3%), and the systems more frequently affected were craniofacial, cardiovascular, musculoskeletal, and central nervous. The total number of CNSA was 118, which corresponded to 79 (11,7%) patients, 43 of which (54,4%) were males. 53% had an identified syndrome, of which the most common are Pierre Robin Sequence or Syndrome, Fetal Alcohol Syndrome, and DiGeorge Syndrome. The CNSA found in this study were 39 delayed milestones (33,2%), 17 congenital deafnesses (14,5%), 11 epilepsies (9,3%), 11 cerebral and cerebellar dysgenesis (9,3%), 10 agenesis of corpus callosum (8,5%), 6 learning difficulties (5,1%), 5 cerebral atrophies (4,2%), 4 cerebral palsies (3,4%), 3 holoprosencephalies (2,5%), 3 cerebellar hypoplasia (2,5%), 3 spina bifida (2,5%), 3 spasticities (2,5%), 2 encephalocele (1,7%), and 1 meningomyelocele (0,8%). 46 CNSA patients (58,2%) had CP, 21 (26,6%) had CLP, 10 (12,7%) had CL and 2 (2,5%) AC.

Conclusions: While isolated clefs have low perinatal mortality and morbidity and primarily pose functional and aesthetic problems after birth, some anomalies, and concomitant congenital malformations, particularly those of CNS, indicate worst prognosis. Thus, in children with OFC further diagnostic investigation is essential, especially using methods, such as magnetic resonance imaging of CNS. Additionally, we highlight the importance of pre and post-natal genetic counselling, given that a long-term multidisciplinary follow- up may allow the diagnosis of new genetic syndromes.

ID: 236
Poster Presentation
Topics: GENERAL PEDIATRICS, RARE DISEASES
Keywords: Spondylocostal dysostosis

Spondylocostal dysostosis: a diagnostic and therapeutic challenge

Curval, Ana Rita; Moreira, Tatiana; Pais Cunha, Inês; Leite de Almeida, Laura; Veludo, Vitorino; Pinto Moura, Carla; Maia, Ana
Centro Hospitalar Universitário de São João, Porto, Portugal

Background: Spondylocostal dysostosis (SCD), which occurs very rarely, is referred to as a combination of rib deformities/anomalies and multiple vertebral malformations (hemivertebrae, hypoplastic, butterfly, or fused vertebrae). Respiratory function in neonates may be compromised by the reduced size of the thorax. By two years of age, lung growth may improve sufficiently to support relatively normal growth and development; however, even then, life-threatening complications can occur, especially pulmonary hypertension with severely restricted lung capacity.

Case Presentation Summary: A 4-months-old caucasian girl was referred to our hospital due to chest wall deformity and scoliosis. Pregnancy was complicated by gestational diabetes, a prenatal renal ultrasound (US) with left pelvic dilatation (7mm), born at 39 weeks of gestation by vaginal delivery, Apgar scores were 9/10 at 1/5 minutes, respectively, there was a reference to a previous admission, at 25 days of life, due to neonatal mastitis. On physical examination, she had severe chest asymmetry. Chest radiography demonstrated agenesis of the right arches and scoliosis. The computed tomography scans showed agenesis of the right arches and the ribs, and multiple hemivertebrae, the butterfly and hypoplastic vertebrae in the thoracic spine from T1 to T8 vertebras. Renal US confirmed left pelvic dilatation (6mm). The patient was then observed by Cardiology and Ophthalmology but was cleared. A genetic study indicated that the multigene panel that includes DLL3, MESP2, LFNG, HES7, TBX6 and RIPPLY2 didn´t include potentially pathogenic variables; furthermore, mendeliane analysis and aCGH showed no alterations. After 4 years of follow-up, the girl remains asymptomatic with an adequate weight and height development for her age. However, she presents progressive thoracic asymmetry/deformity but no paradoxical breathing and no repetitive respiratory infections. She has a multidisciplinary follow-up, and she waits for surgical correction.

Learning Points Discussion: SCD persists as a diagnostic and therapeutic challenge given that the literature is composed of case reports and small cohorts, and the natural history of SCD remains largely unknown. Thus, the long-term follow-up of this child is essential given that recognition of complications and genetic counselling is essential to provide optimal care.

ID: 107
Poster Presentation
Topics: GENERAL PEDIATRICS, INFECTIOUS DISEASES, NEUROLOGY
Keywords: measles, encephalitis, vaccinated

Subacute sclerosing panencephalitis presenting as acute encephalitis with a rapid fatal outcome– case report

Chisnoiu, Tatiana[1,2]; Yurtsever, Vildan[1]; Balasa, Adriana Luminita[1,2]; Mihai, Cristina Maria[1,2]
[1]Constanta Clinical Emergency Hospital, Pediatric Department, Romania, Romania; [2]Ovidius University of Constant, Pediatric Department

Introduction: Subacute sclerosing panencephalitis (SSPE) is a rare form of fatal progressive chronic inflammation of the central nervous system caused by slow infection with certain strains of the measles virus. The condition primarily affects children, adolescents and young adults, but the most affected ages appear to be between 5-15 years. There is no treatment for SSPE, and the condition is almost always fatal.

Case report: We present a girl aged 9 years and 8 months who presents to the Emergency Department for headaches, gait disorders, speech disorders and sialorrhea with the onset of one week. The family says they have noticed an impairment of educational performance in the last month. She also had a past history of viral exanthem suggesting measles at 3 years old. After 2 days of hospitalization, the patient has swallowing disorders, bilateral motor deficit, limb tremor, reduced muscle strength. It has stiff neck. Does not speak. Cerebral MRI is performed that highlights bilateral temporo-frontal-parietal cortico-subcortical areas in T2 hypersignal, FLAIR. Considering the unfavorable evolution and neurological degradation (ataxia, myoclonic jerks, seizures), the following diagnoses are considered: acute infectious or autoimmune encephalitis, demyelinating disease, meningitis or meningoencephalitis, excluding following specific imaging and laboratory investigations. Electroencephalography (EEG) revealed a generalized alpha band background path both posteriorly and anteriorly on this path; synchronous discharges are observed, generalized amplitudes of 2-3 c/sec over the course of 1-2 sec. These graph elements

appear irregularly on the route at a distance of 6 seconds and over 12 seconds. The graph elements are in the polymorphic delta band. As the EEG picture was suggestive of subacute sclerosing panencephalitis, a sample of cerebrospinal fluid (CSF) was obtained for anti-measles antibody. Both anti-measles IgG antibody was highly increased (in serum >5000 and cerebrospinal fluid titre 67.8). The IgG index (CSF IgG/ serum IgG) was 86.9 (normal <1.3). A diagnosis of subacute sclerosing panencephalitis was made in view of neurological deterioration, elevated cerebrospinal fluid measles antibody levels, and periodic discharges in the EEG. The condition worsened progressively in the next 2 weeks with an irregular respiratory pattern, diffuse rigidity and decerebration. The patient died after one month of symptom onset.

Conclusions: Due to the various forms of presentation of SSPE described in the literature, the diagnosis cannot be made easily, being often necessary to investigate the multiple causes of acute encephalitis in children. Given that, unfortunately, the measles vaccination is not covered in all countries, SSPE should be considered as a screening for the causes of acute encephalitis in children.

ID: 168
Poster Presentation
Topics: GENERAL PEDIATRICS, EMERGENCY PEDIATRICS, COVID-19
Keywords: covid-19, wellbeing, telemedicine, outpatient, management

The doctor will see you now – optimising inpatient and outpatient paediatric care during the COVID-19 pandemic in a UK district general hospital

Kirk, Rachel; Jain, Gunjan; Gite, Amitabh
Lister Hospital, East and North Hertfordshire NHS Trust, United Kingdom

Introduction: The first wave of the COVID-19 pandemic required paediatric departments to quickly adapt to changing infection control policies, including altering physical space, pathway and rota restructuring, and adopting telemedicine platforms. As it emerged that COVID-19, as a disease entity, does not severely affect children, it became apparent the biggest challenges in delivering excellent care would be to overcome operational and organisational obstacles. Other challenges included delayed presentations of other conditions, waning staff morale and lack of paediatric specific infection control data and guidance.

Methods: Our district general hospital's paediatric department established working groups comprising senior paediatricians, infection control leads and nursing managers. They regularly met during the first wave with the aim to optimise inpatient and outpatient paediatric care, agree on paediatric specific pathway changes and ensure staff morale was maintained.

Actions: Paediatric doctors took over management of the paediatric emergency department (ED) to support adult services. Consultants became residents overnight to help manage ED and the requirements of a 'red' and 'yellow' admission pathway. We implemented a thrice-weekly multidisciplinary resuscitation simulation to ensure all staff were aware of COVID adaptions to paediatric resuscitation algorithms. Weekly staff debriefs held to ensure the dissemination of pathway updates and to prioritise staff morale. Emergency funding led to the acquisition of new equipment to avoid cross-contamination with adult areas (e.g. blood gas analysers). Outpatient referrals were double-vetted by consultants and seen promptly. Over one year from January 2020, 8,104 children were seen in the clinic; 4,619 (57%) were new referrals and seen face-to-face. We worked with adult services; the paediatric outpatient area was converted to an overflow adult ED. Paediatrics utilised an adult area with a larger footprint to continue face-to-face outpatient appointments. We extended our community nursing service to 7 days a week (from 5) to ensure more streamlined ambulatory care.

Conclusions: Adaptability and flexibility were fundamental in implementing paediatric specific pathways. Schedule supportive team debriefs to promote staff wellbeing. Work with adult services to maintain excellent patient care throughout both specialities – we took over paediatric ED and utilised adult space to continue outpatient clinics. Anecdotally paediatricians preferred, and felt safer, undertaking face-to-face consultations for new outpatient appointments. Most children were not seen by their general practitioner prior to referral. We advocate ensuring all new outpatient referrals are seen face-to-face. Telemedicine was the preferred method for reviewing outpatient follow-ups. More research is required into the opportunities and barriers of paediatric telemedicine.

ID: 298

Poster Presentation

Topics: GENERAL PEDIATRICS, ADOLESCENT MEDICINE, PUBLIC HEALTH

Keywords: Reproductive Health, Adolescence

To assess awareness and behavior, regarding sexual and reproductive health among rural and peri-urban adolescent males of Anand district, India

Mistry, Ayushi; Ganguly, Arindrajit; Shah, Aneri; Patel, Axil; Parmar, Hemshree; Singh, Uday Shankar
Pramukh Swami Medical College, India

Background: Adolescence is a period of marked development regarding reproductive biology. Yet adolescents often lack knowledge of reproductive health issues, which can be attributed to social and cultural barriers and their hesitancy to access family planning and reproductive health services. Consequently, they may be at an increased risk of sexually transmitted diseases (STDs), including HIV, unintended pregnancy, and other serious consequences. Moreover, males are socialized to be independent, self-reliant, show little emotion, and not seek assistance for health problems. The unmet needs vary among different socioeconomic strata of the given society and also between rural and peri-urban areas. Among all the researches done in reproductive and adolescent health in India, most of them focus on females. Thus we looked at the similarities and differences in reproductive health awareness and behaviour among adolescent males living in peri-urban and rural areas of Anand.

Methodology: We included males aged 16-18 years from the Rural and Urban Schools of Anand District. Following informed written consent from the Principal and parents, we distributed questionnaires to the participants. An educational session was conducted covering all the major aspects of male reproductive and sexual health. A month after this intervention, we reassessed the participants using the same questionnaire and assessed the result.

Results: 298 students participated in the study with a mean age of 16.8223. Pre Intervention approximately 40.85% of the Rural and 36.02% of the urban participants had adequate knowledge about the anatomy and physiology of the male reproductive system. 44.46% Rural and 48.12% of the urban participants had adequate knowledge regarding the social aspects of Male adolescent health. 49.73% rural and 76.2% of urban males were aware of the legal implications of adolescent health. 42.18% of the rural and 44.76% of the urban males had adequate knowledge about male contraceptive practices. Following the intervention, the knowledge about anatomy and physiology among the rural and urban participants rose to 49.48% and 38.37%, respectively. The knowledge about social aspects was 62.68% and 59.50% among the rural and urban participants, respectively. The legal knowledge was increased to 69.33% and 89.65% among the rural and urban participants, respectively. Among all participants, 43.93% individuals would approach their friends for concerns regarding reproductive and sexual health.

Conclusion: There is a serious lack of awareness among the males of the reproductive age group regarding reproductive health and attitude towards safe sexual practices. Also, there was a

significant improvement in knowledge and attitude, which was clear on re- test scores. This also emphasizes the need for community awareness incorporating male reproductive health.

ID: 255
Poster Presentation
Topics: GENERAL PEDIATRICS, INFECTIOUS DISEASES
Keywords: varicella, vasomotor arteriopathy

Varicella-zoster virus infection: typical entity vs atypical presentation

Vicente-Ferreira, Margarida; Curval, Ana Rita; Pissarra, Rita; Maia, Ana
Department of Pediatrics, UAG da Mulher e da Criança, Centro Hospitalar Universitário de São João, Porto, Portugal

Background: Varicella-zoster virus (VZV) typically causes a primary infection in childhood, benign and self-limited. Fever, loss of appetite, pharyngitis, and malaise followed by vesicular pruriginous rash are the most typical features. Complications include bacterial infection of skin lesions, sepsis, pneumonia, central nervous system involvement (acute cerebellar ataxia, encephalitis, stroke/ vasculopathy), and thrombocytopenia.

Case Report: The authors present a case of varicella in which the clinical manifestation was atypical and led to an exhaustive complementary study to exclude a severe organic entity. A 2-year-old girl, without relevant medical history, presented to the emergency service (ES) complaining of feeling the upper right limb colder than the left associated with a spike of fever, cough, and rhinorrhea. There was no trauma history. Physical examination revealed a colder right upper limb with the right hand slightly swollen and flushed. Radial pulses were strong, regular, and symmetrical, and there wasn't any pain or functional limitation. Blood tests revealed thrombocytopenia (127.000/uL) and C-reactive protein of 30.6 mg/L; d-dimers were 3.65mcg/mL. Vascular Doppler ultrasound to the neck and right arm showed a normal flow of all major vessels and allowed to rule out superficial and deep vein thrombosis. Chest CT scan was also unremarkable. After 8 hours of surveillance in the ES, two new maculopapular skin lesions were noted in the right leg and the scalp. Admission to the inpatient was decided for follow-up on the assumed vasomotor reaction and further study. On the first day of admission, vesicular lesions erupted in the scalp and genitalia prompting the initiation of acyclovir, which was maintained for 5 days. Gradually the color and temperature of the upper right limb became normal and symmetric, and she was discharged after 6 days with the majority of lesions in crusted stage, with clinical evolution compatible with varicella. Her parents revealed that 3 weeks early started an outbreak in her kindergarten. The serologic study for viruses and autoimmunity was initially negative; one month after discharge she had IgG positive for varicella.

Discussion: The authors present a child that came to the ES with a complaint that led to an exhaustive study to exclude thrombosis or a mass that could compress the vessels. To the best of our knowledge, there are no similar cases described. Nevertheless, the authors hypothesize that this is a case of vasomotor arteriopathy in which there is an exaggerated response of vascular smooth muscle on peripheral circulation in response to determinate stimuli, in this case, an infection.

ID: 259
Poster Presentation
Topics: INFECTIOUS DISEASES
Keywords: multidrug-resistant bacteria, infection, risk factors

Multidrug-Resistant Bacteria in Hospitalized Children: a 10-year study

Stella, Lorena[1]; Garcia, Ana Margarida[1]; Pinto, Margarida[2]; Silva, Tiago Milheiro[1]; Valsassina, Rita[1]; Gouveia, Catarina[1]; Brito, Maria João[1]
[1]Pediatric Infectious Diseases Unit, Pediatric Department; [2]Laboratory of Microbiology, Clinical Pathology Department. Hospital Dona Estefânia. Centro Hospitalar Universitário de Lisboa Central. Lisboa, Portugal.

Introduction: In recent years, the incidence of multidrug-resistant (MDR) bacteria has shown a rapid growth trend. Children are among patients for whom antibiotics are frequently prescribed and for whom the risk of multi-resistance development is higher. This study aimed to characterize MDR bacteria in invasive bacterial infections and the associated risk factors.

Methods: Retrospective study of children (29 days–18 years) admitted in a tertiary pediatric hospital, from 2010 to 2019, with invasive bacterial infections by MDR, defined as isolation of a bacterial organism from a normally sterile body fluid. MDR bacteria were defined as acquired non-susceptibility to at least one agent in three or more antimicrobial categories. Epidemiological, clinical and microbiological variables were analyzed.

Results: Among 570 invasive bacterial infections identified, 93 (16.3%) were caused by MDR bacteria, on 83 children, 50.6% male, median age 2.9 years [29 days - 17 years]. The annual proportion of these infections rose from 11.4% in 2010 to 20.5% in 2019. The most frequently reported agents were Enterobacteriaceae (73/93, 78.5%), methicillin-resistant Staphylococcus aureus (13/93, 13.9%) and Pseudomonas aeruginosa (7/93, 7.5%). 35/73 (47.9%) of Enterobacteriaceae were extended-spectrum β-lactamases producers: Klebsiella pneumoniae (30), Escherichia coli (4) and Klebsiella oxytoca (1). The clinical diagnosis was sepsis/bacteriemia in 73/93 (78.5%), central nervous system infection in 11/93 (11.8%), respiratory infection in 5/93 (5.3%) and osteoarticular infection in 5/93 (5.3%). All children had risk factors: central venous catheter (43/83, 51.8%) and chronic disease (26/83, 31.3%) were the most common. 13 children (14.0%) died during hospitalization.

Conclusions: Antimicrobial resistance is a major problem in Pediatrics. During the study period, there was an increase in the proportion of multidrug-resistant bacteria, and MDR Gram-negative bacteria were the most commonly reported agent. The presence of risk factors should alert health professionals for the need to strictly adhere to all infection control measures in order to protect patients most susceptible.

ID: 248
Poster Presentation
Topics: ALLERGY, IMMUNOLOGY & RESPIRATORY, RHEUMATOLOGY, COVID-19
Keywords: DRESS, anakinra, IL-1 inhibitors, MIS-C

Probable Drug Reaction induced by Anakinra in a patient with severe Multisystem Inflammatory Syndrome (MIS-C)

Stella, Lorena[1]; Pinto, Paula Leiria[2]; Silva, Tiago Milheiro[1]; Conde, Marta[3]; Gouveia, Catarina[1]
[1]Pediatric Infectious Diseases Unit; [2]Immunoallergology Department; [3]Pediatric Rheumatology Unit. Pediatric Departament. Hospital Dona Estefânia. Centro Hospitalar Universitário de Lisboa Central. Lisboa, Portugal.

Introduction: Multisystem Inflammatory Syndrome in Children (MIS-C) is a potentially life-threatening condition that occurs after SARS- CoV-2 infection. Although intravenous immunoglobulin (IVIG) and systemic glucocorticoids are the most common therapeutic approaches, IL-1 inhibitors have been used in severe refractory forms. However, rare severe complications have been reported.

Clinical Case: 16-year-old female previously healthy adolescent, born to consanguineous parents. Admitted with a seven-day history of fever, odynophagia, skin rash, abdominal pain and hepatomegaly. She reported close contact with an aunt with COVID-19 four weeks before. Bloodwork showed anemia, lymphopenia, increased INR (1.17) and D-dimer, elevated liver enzymes, hypoalbuminemia and elevated cardiac enzymes (troponin 5712 pg/mL). She had a slightly mitral regurgitation and pericardic effusion and high levels of inflammatory markers: C-reactive protein (CRP) of 178 mg/L, ferritin >40000 ng/mL and sCD25 7200 pg/mL. SARS-CoV-2 nasopharyngeal swabs were negative, but a serological test for SARS-CoV-2 IgG returned positive. The microbiological workup was negative. She received ceftriaxone and clindamycin for 10 days plus methylprednisolone (10 mg/kg, 3 days) and IVIG 2 g/kg. On D3, she became apyretic, and the rash improved, but on D5, there was a recurrence of fever, the reappearance of the macular rash and a small vesicular lesion on the lip. On D7, she started anakinra 100 mg BID, maintaining steroids. Two days after starting biological therapy, developed a purpuric rash affecting the face, trunk, inguinal folds and superior members, with intense pruritus and burning sensation, associated with worsening fever, facial edema and hepatomegaly. She had elevated serum CRP and liver enzymes. There was no lymphadenopathy or eosinophilia. DRESS (RegiSCAR) score was 4, corresponding to "probable" DRESS syndrome. Anakinra was interrupted, and methylprednisolone pulses were started concomitantly with cyclosporine. She was PCR positive for Herpes Simplex type 1 (blood and lip lesion) and started acyclovir. HLA was DRB1*15 positive in heterozygosity. Her clinical conditions gradually improved with defervescence on D12 and gradual resolution of the exanthema. At the last observation, three months later, she was asymptomatic and with normal laboratory tests.

Conclusion: Drug Reaction induced by Anakinra, probably DRESS syndrome, is a rare, severe drug reaction. We suspect that eosinophilia was masked by steroid treatment and reactivation of herpes virus and genetic predisposition were probably the main drivers.

ID: 347

Poster Presentation

Topics: PUBLIC HEALTH

Keywords: Self-assessment of health; adolescents 11-15 years old; socio-psychological aspects; questionnaire; HBSC

Self-rated health of 11-15 years old adolescents: social and psychological aspects

Lukmanova, Natalia[1]; Pukhov, Dmitriy[1]; Rychkova, Liubov[2]; Lukmanova, Anna[3]; Matochkina, Anna[1]; Malinin, Alexander[1]

[1]Federal state budget institution «Saint-Petersburg scientific-research institute for physical culture», Russian Federation; [2]Scientific Center for Family Health and Human Reproduction, Russian Federation; [3]Atlantik, Russian Federation

Introduction: The authors studied the psychological components of the health of 11-15 years old adolescents based on a questionnaire of the cross-national study "Health Behavior in School-aged Children" (HBSC).

Methodology: The survey results of 4690 Russian adolescents aged 11-15 years of both genders were analyzed, the interdependence of the indicator "self-rated health" and socio-psychological components were determined. The respondents were divided into two groups, differing in the level of the assessment of their health (group 1 - respondents assess their health as "excellent or good"; group 2 - respondents assess their health as "satisfactory or bad"). Methods of statistical comparison of groups using the $\chi 2$ test for variables associated with self-rated health and correlation analysis were used for the analysis.

Research results and Conclusion: Based on the survey results, the qualitative and quantitative characteristics of health indicators in adolescents with different levels of self-rated health were established. Adolescents who assess their health as "excellent or good" have significant differences in individual health indicators (health complaints), psychoemotional status of adolescents, self-assessment of physical development.

ID: 213
Poster Presentation
Topics: HAEMATOLOGY / ONCOLOGY
Keywords: Myeloid sarcoma

A rare and unusual case of myeloid sarcoma in a paediatric patient

van der Walt, Ann Nilushka
Queensland Children's Hospital, Brisbane, Australia

Background: Myeloid sarcoma is an extramedullary growth of blasts in the myeloid lineage and often precedes or occurs simultaneously with the diagnosis of acute myeloid leukaemia (AML). It is rare and occurs in less than 1% of patients who have AML. In children, extramedullary involvement is most common in the skin and eyes. There have been other case reports of myeloid sarcoma involving the eyes, cardiac tissue, nasal tissue, gingiva and pancreas. This report highlights a rare case of myeloid sarcoma in a paediatric patient involving the breast, which occurred six months before the diagnosis of AML.

Case Presentation: An eleven-year-old female patient was referred from a regional centre to a tertiary paediatric hospital with severe anaemia (Hb 28), thrombocytopenia (Pl 7), and blasts on blood film. She was found to have acute myeloid leukaemia, CD33 positive, RUNX1-RUNX1T1 (FISH) and CNS3 disease. She was commenced on the appropriate chemotherapy protocol (mitoxantrone, daunorubicin, gemtuzumab) and is currently in remission after year-long treatment. Preceding her presentation she described a six- month history of enlarging bilateral breast lumps. She presented to her general practitioner with concerns of breast lumps three months prior to the presentation but was told that her symptoms were benign as she was pre-pubertal. The breast lumps were not cyclical with her period and were not painful. On examination, she had multiple breast lumps on both breasts, hard in nature, non- tender and mobile. An ultrasound demonstrated multiple heterogeneous, hypoechoic masses, irregular in shape with indistinct margins and internal vascularity on colour Doppler. There was no obvious fluid component and no significant posterior acoustic enhancement or shadowing. The appearance was deemed atypical of fibroadenomata and, in the clinical context, likely myeloid sarcomas. One month post commencement of chemotherapy, a repeat ultrasound showed small residual hypoechoic area, which completely resolved on a subsequent scan post-treatment. This confirmed that her breast lesions were likely secondary to myeloid sarcoma of the breast.

Learning Points Discussion: Breast lumps in adolescent children are mostly self-limiting and benign. However, this case highlights the importance of considering a rare diagnosis of malignancy. Owing to its rarity, we have a scarcity of research in this area. Further research by means of systematic reviews and randomised control trials will provide prognostic information and better treatment guidelines.

ID: 133
Poster Presentation
Topics: RARE DISEASES, NEUROLOGY
Keywords: Focal seizures, Moyamoya disease, Neurofibromatosis type 1, Next generation sequencing, NF1 deletion variant

Association of a dominant NF1 deletion variant with both Neurofibromatosis Type 1 and Moyamoya diseases in a boy of Han Chinese ethnicity

Yang, Yung-Yu[1]; Chen, Yi-Hui[2]; Wang, Yu-Shan[1]; Yu, Chia-Hsiang[3]; Hu, Chih-Fen[3]; Sung, Chia-Cheng[3]; Chen, Shyi-Jou[3,4]

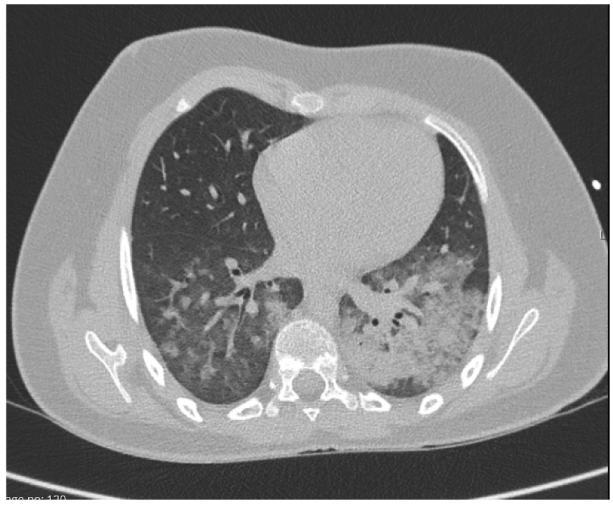
[1]Department of General Medicine, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan; [2]Graduate Institute of Aerospace and Undersea Medicine, National Defense Medical Center, Taipei, Taiwan; [3]Department of Pediatrics, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan; [4]Graduate Institute of Microbiology and Immunology, National Defense Medical Center, Taipei, Taiwan

Background: Unlike mainly asymptomatic Neurofibromatosis Type 1 (NF1) -associated vasculopathies, we herein present a case of the NF1-related Moyamoya disease with recurrent focal seizures triggered by breath-holding.

Case Presentation Summary: A two-year-old boy was initially brought to our pediatric outpatient department given sudden involuntary movement of right limbs with drowsy consciousness during a 10-min vigorous crying. Moreover, the distribution of Cafe au lait spots in the trunk and buttocks, motor developmental delay, and suspected ADHD were present. Brain MRI images revealed acute ischemic infarction of the left parietal lobe while the EEG was essentially normal. Subsequent brain MRA images showed segmental narrowing at both the distal internal carotid artery and the proximal M1 segment of the bilateral middle cerebral arteries (Figure 1(a)), which led to the diagnosis of Moyamoya disease. Nevertheless, episodes of the initial symptoms recurred despite the application of the Encephaloduroarteriosynangiosis (EDAS) surgery and anticonvulsants. The following brain MRI and EEG study respectively showed faint T2 hyperintensities in the right pons (Figure 1(a)) and left parietal sharp waves. The blood sample of the patient was analyzed by Next Generation Sequencing, and a heterozygous deletion of the guanine nucleotide in intron 30 of the NF1 gene (i.e., [c.4110+1delG]) was identified (Figure 1(b)), which has not been reported to be associated with NF1-related diseases.

Learning Points Discussion: In this case, the recurrent focal seizures are less likely to be merely associated with Moyamoya disease, given the prominently resolved seizure episodes after the EDAS procedure from previous studies. Therefore, we speculated that the intracerebral vasculopathy and the aforementioned abnormalities were all clinical manifestations of NF1, with which

Figure 1. CT-scan.



patients were subject to a higher prevalence of seizure compared to the general population. The aberrant function of neurofibromin caused by NF1 gene mutation has been shown to result in hyperactivation of the Ras-Raf-MEK-ERK pathway and excessive vascular smooth muscle cell proliferation, which are respectively correlated with the formation of the hyperexcitable brain and the NF1-related vasculopathy. Moreover, the proximity of the gene locus of NF1 (17q11.2) to the familial Moyamoya disease (17q25) is postulated to elucidate the concomitant occurrence of the two diseases. Interestingly, a single nucleotide mutation on the c.4110+1 position of the NF1 gene, which was speculated to be a donor splice site, was recently identified in the mainland Chinese population. Hence, the deletion variant in our case in the same position may also cause RNA splicing disruption. Unfortunately, we were unable to clarify the origin of the deletion since the patient's parents refused genetic testing. In conclusion, despite an unclear role of NF1 in the pathogenesis of seizures and vasculopathy, it is crucial that pediatricians recognize the diverse symptoms and apply genetic analysis for the early diagnosis of NF1.

ID: 317
Poster Presentation
Topics: RHEUMATOLOGY
Keywords: MIS-c, heart, children

Cardiac involvement in SARS-CoV-2-associated multisystem inflammatory syndrome in children: a monocentric experience

Trapani, Sandra[1]; Soli, Giulia[1]; Simonini, Gabriele[2]; Mastrolia., Maria Vincenza[2]; Calabri, Giovanni Battista[3]; Favilli, Silvia[3]
[1]Department of Sciences of Health, Meyer Children's Hospital, Italy; [2]Department of Neurofarba, Meyer, Children's Hospital, Italy; [3]Cardiology Unit, Meyer Children's Hospital, Italy

Background: A high rate of cardiac involvement has been reported in multisystem inflammatory syndrome in children (MIS-c), including ventricular dysfunction, coronary artery dilation or aneurysm, and arrhythmias. Patients with MIS-c, heralding with fever, rash and gastrointestinal symptoms, may rapidly deteriorate in hypotension and shock up to intensive care unit admission.

Methods: We performed a single-centre, retrospective cohort study of patients <18 years of age fulfilling criteria of MIS-c at Meyer Children's Hospital from October 2020 to June 2021. We enrolled children who developed cardiac involvement and reviewed their records.

Results: Among 22 patients with MIS-c, 18 (86%) had at least one abnormality in cardiac testing: abnormal electrocardiogram (9 cases) and/or abnormal echocardiogram (15 cases). Their median age was 7.7 years (range: 10 months-15 years). There was a male predominance (14 cases), with Caucasians being the largest ethnic group (12). Previous comorbidities, even combined, were present in 8 (allergic diseases in 4, obesity in 3, celiac disease in one and congenital dilatative cardiopathy in one). The echocardiographic features were: cardiac dysfunction in 12 cases, mild with ventricular ejection fraction (VEF) between 40-55% in 6, moderate with VEF between 30-40% in 5, and severe when VEF <30% in one; coronary dilatations in 5 cases (one with Z-score +7); left ventricular dilatation (3); pulmonary hypertension (1), minimal effusion (1), myocarditis (1), and minimal septal dyskinesia (1). All these patients needed ICU admission. The electrocardiographic abnormalities were: altered repolarization (5), ST-segment abnormality (2), and pulseless electrical activity (1). Eleven children had hypotension. Three children had only altered EKG. About laboratory findings, brain natriuretic peptide (BNP) and troponin (Ths) were high in 100% and 83.3%, with median values of 9349 pg/mL and 51.4.8 pg/mL/L, respectively. CRP and Procalcitonin (PCT) were elevated in all: median value of CRP was 21.4 mg/dL (range 7.25-40.17 mg/dL) and of PCT was 11 ng/ml (1.3-177 ng/mL). Significant correlations were found between cardiac involvement and haematological data: BNP, Troponin, CRP, and PCT. Treatment included intravenous

immunoglobulin and oral steroids in all; 11 received at least a pulse of methylprednisolone. Vasoactive amines were necessary for 11 patients. Other drugs were: anti-IL1 (10), heparin (8), acetylsalicylic acid (2), and antihypertensive drugs (2). Electrocardiogram and echocardiogram abnormalities resolved before discharge in 14 cases; over the 2-week

Conclusions: Cardiac screening tests should be performed in all patients with MIS-C during the acute phase, given the high rate of abnormal cardiac findings in our cohort. Management, based on expert consensus and including cardiac support, immunomodulators, and anticoagulation, has been able to obtain recovery in all our children.

ID: 294
Poster Presentation
Topics: RARE DISEASES, NEONATOLOGY
Keywords: Ring Chromosome, Genetics, Rare, Fallot

Case report: a unique case of Ring Chromosome 13

Higgins, Michael Patrick[1,2]; Boyle, Michael[1,2]
[1]Rotunda Hospital Dublin; [2]Royal College of Physicians Ireland

Background: Ring Chromosome 13 is an extremely rare chromosomal disorder affecting approximately 1 in 58,000 births. Ring Chromosome 13 syndrome is a chromosomal structural anomaly of chromosome 13 of unknown aetiology which results in unpredictable sporadic deletion and substitution mutations involving the telomeric ends of the chromosome. As with all ring chromosome syndromes, it manifests in a broad range of phenotypes. This is seen in the diversity of the cases of ring chromosome 13 described in the literature to date. Affected infants may exhibit a widely variable phenotype (ranging from mild to severe) principally characterized by intrauterine growth retardation, developmental delay, short stature, moderate to severe intellectual deficit, microcephaly, facial dysmorphism (i.e. upslanting palpebral fissures, hypertelorism, abnormal ears, broad nasal bridge, high arched palate, micrognathia, smallmouth, and thin lips), hands and feet anomalies, and genital abnormalities.

Case Presentation Summary: Our particular case of Ring Chromosome 13 presented a liveborn baby girl with extremely short stature and weight, a significant degree of microcephaly, along with a Tetralogy of Fallot. By the age of 2 years, the patient had made impressive progress on her developmental milestones, despite this potentially devastating and sometimes life-limiting diagnosis of Ring Chromosome 13.

Learning Points Discussion: We hope to raise awareness with this case report of the extremely rare presentation of Ring Chromosome 13, with a concomitant Tetralogy of Fallot. We will also highlight that the phenotype of this genetic disorder may be more benign than is traditionally described in the majority of literature. This case report will also show the importance of including the diagnosis of ring chromosome syndromes such as Ring Chromosome 13 in our differential diagnosis when evaluating a foetus/baby for Intra-Uterine Growth Restriction. We will also raise awareness of the cytogenetic techniques available for diagnosing rare chromosomal disorders such as these.

ID: 126
Poster Presentation
Topics: NEUROLOGY
Keywords: brain heterotopia, epilepsy, antiepileptic drugs

Characteristics of epileptic seizures in children with brain heterotopia – a study on 26 patients

Budisteanu, Magdalena[1,2,3]; Papuc, Sorina Mihaela[2]; Erbescu, Alina[2]; Iliescu, Catrinel[1]; Burloiu, Carmen[1]; Tarta-Arsene, Oana[1]; Barca, Diana[1]; Dica, Alice[1]; Motoescu, Cristina[1]; Anghelescu, Cristina[1]; Craiu, Dana[1]; Arghir, Aurora[2]
[1]Obregia Clinical Hospital of Psychiatry, Romania; [2]Victor Babes National Institute of Pathology, Bucharest, Romania; [3]Titu Maiorescu University, Faculty of Medicine, Bucharest, Romania

Background: Brain heterotopia represent a group of rare malformations with a heterogeneous phenotype, ranging from asymptomatic to severe clinical picture (resistant epilepsy, severe developmental delay). This paper presents the characteristics of epileptic seizures in a cohort of paediatric patients with brain heterotopia.

Methods: 26 paediatric patients with brain heterotopia were investigated by clinical examination, electroencephalographic studies, brain imaging, and genomic tests. We noted the age of onset of epileptic seizures, type of seizures, and the response to antiepileptic drugs.

Results: 25 patients with ages between 1 month and 14 years presented epileptic seizures. The age of onset of epileptic seizures was in most cases in the first 3 years of life (16 children). Most patients had complex partial seizures (22 patients), 2 children presented infantile spasms, and one child had atypical absences. Valproate was the most common used antiepileptic drug, alone or in combination with other antiepileptic drugs (levetiracetam, carbamazepine, lamotrigine, benzodiazepines). 14 children were seizures free at the last evaluation, whereas 11 patients have drug-resistant epilepsy, associated, in most cases, with a complex phenotype (intellectual disability, behaviour problems – autism, hyperkinesia, speech delay) and a severe brain malformation (band heterotopia, bilateral heterotopia, other brain malformations associated with heterotopia).

Conclusions: In our cohort, epilepsy was a common feature of brain heterotopia, and the most common type of seizures was the complex partial seizures. Over 50% din cases were seizures free with one or more antiepileptic drugs. Patients with resistant epilepsy presented a complex phenotype and a severe brain malformation.

ID: 296
Poster Presentation
Topics: COVID-19
Keywords: COVID-19, multisystem inflammatory syndrome, children

Clinical manifestations in children with Multisystem Inflammatory Syndrome associated with COVID-19 infection, case series

Pagava, Karaman[1,2]; Kutubidze, Tinatin[1,2]
[1]Department of Child & Adolescent Medicine, Tbilisi State Medical University, Tbilisi, Georgia; [2]G. Zhvania Pediatric Academic Clinic of Tbilisi State Medical University, Tbilisi, Georgia

Background: The pandemics caused by the novel infection named COVID-19 became a challenge for pediatricians as well. The management of this infection, particularly its severe forms, incl. multisystem inflammatory syndrome (MIS) stays as an urgent problem of modern pediatrics. Until now, we are in the stage of collection of data regarding clinical manifestations and clinical efficacy of the treatment.

Aim: The goal of our research was to analyze COVID-19 related MIS cases in children

Methods and Materials: There was analyzed medical documentation of 8 patients (age 16mo-15yy, gender- 6 girls, 2 boys) with COVID-19-MIS admitted to G. Zhvania Pediatric Academic Clinic of Tbilisi State Medical University in 2020-2021.

Results: 8 patients with PCR confirmed diagnosis of COVID-19 were presented with fever, rash, high ESR, CRP, high D-dimer; among them, 3 patients presented with polyserositis (pericardial, pleural, abdominal effusions), 2 patients were positive for ANA, and 1 patient tested positive for ANA (1:640) and ANF. One patient, 1-year-old, presented after 6 weeks of confirmed Covid-19, with positive IgG to SarsCov-2. She had fever>10 days, bilateral non-purulent conjunctivitis, periorbital edema, cervical lymphadenopathy, dry lips, red tongue, several erythematous rashes on the skin, hepatomegaly, mild leukocytosis, anemia, high ESR, CRP, high ferritin, aneurismal dilatation of the left coronary artery, Z score-7.82. Main treatment - corticosteroids (pulse therapy with methyl-prednisolone, DMARD); all patients were discharged with improved condition. Follow up confirmed the diminished Z scores. Patients continue to improve. The special interest was attributed to the presence of ANA and ANF. According to recently published data [Saad MA et al., COVID-19 and Autoimmune Diseases: A Systematic Review of Reported Cases. Curr Rheumatol Rev. 2021;17 (2):193-204] there is some association between COVID-19 and autoimmune diseases; there are similarities in the immune response in both disease conditions, and organ damage in COVID-19 appears to be largely immune-mediated, similar to autoimmune diseases. This may explain the success of treatment with corticosteroids and some Disease-modifying antirheumatic medications (DMARDS).

Conclusions: There is a need for more high-quality pediatric COVID-19, incl. MIS research, looking for the mechanisms responsible for differences in symptomatology, susceptibility, and effectivity of treatment and factors modifying its development and outcomes as well.

ID: 242
Poster Presentation
Topics: PSYCHIATRY, ADOLESCENT MEDICINE, PUBLIC HEALTH
Keywords: Cognitive dysfunction, high school, digital screen time

Cognitive dysfunction among US high school students and its association with time spent on digital devices: A population-based study.

Singla, Puneet[1]; Satnarine, Travis[2]; Mistry, Ayushi[3]; Desai, Saral[4]; Sharma, Prerna[5]; Gadiwala, Salika[6]; Patel, Sejal[7]; Das, Bibhuti Bhusan[8]; Bakarr, Abdul Akim[9]; Chahal, Meher[10]; Stuart, Robert[11]; Telsem, Muna[12]; Pathrose, Rana Mercy[13]; Hsieh, Ya-Ching[14]; Patel, Saurabhkumar[15]
[1]Government Medical College, Patiala, Punjab, India; [2]Port of Spain General Hospital, Trinidad, WI; [3]Dr N. D. Desai Hospital and Research Center, Nadiad, Gujarat, India; [4]Brookdale University Hospital Medical Center, Brooklyn, NY, USA; [5]Government Medical College, Amritsar, Punjab, India; [6]B J Medical College, Ahmedabad, India; [7]Government Medical College, Surat, India; [8]Central New York Psychiatric Center, OMH, NYS; [9]St. George's University School of Medicine, Grenada; [10]Government Medical College and Hospital Sector 32, Chandigarh, India; [11]Poznan University of Medical Sciences, Poland; [12]Fulton State Hospital, Fulton, Missouri, USA; [13]IU Health Ball Memorial Hospital, Muncie, Indiana; [14]Icahn School of Medicine at Mount Sinai, New York, NY, USA; [15]University of Illinois Hospital & Health Sciences System, Chicago, IL, USA

Background: Cognitive dysfunction (CD), a broad term, mainly incorporates all the aspects of decline in a person's cognition. It mainly encompasses deficits in attention, language, memory, visual-spatial processing, executive function, processing speed, and motor functioning. Though age is the greatest risk factor of CD, it is also a hallmark feature of many psychiatric disorders. In adolescents, CD is associated with ADHD and MDD. Problematic internet use and increased screen time have led to detrimental changes in neuropsychological domains, sleep issues, and depression. We aim to study the prevalence and characteristics of cognitive dysfunction among US high school students and its association with time spent on digital devices.

Table 1. Prevalence of cognitive dysfunction among US high school students with daily digital screen time

	Cognitive Dysfunction N=3914 (37.9%)	No Cognitive Dysfunction N=6403 (62.1%)	Total N=10317 (100%)	P-Value
Current Video Game/Non-Work-Related Computer Use				<0.0001
No playing video/ computer game	617 (15.9)	1138 (18.0)	1755 (17.2)	
< 1 hour per day	365 (9.4)	671 (10.6)	1037 (10.2)	
1 hour per day	277 (7.2)	723 (11.4)	1001 (9.8)	
2 hours per day	531 (13.7)	1139 (18.0)	1670 (16.4)	
3 hours per day	561 (14.5)	1001 (15.8)	1562 (15.3)	
4 hours per day	432 (11.1)	595 (9.4)	1027 (10.1)	
5 hours or more per day	1096 (28.2)	1065 (16.8)	2161 (21.2)	
Current TV Use				0.002
No TV on use	1135 (29.2)	1721 (27.1)	2857 (27.9)	
< 1 hour per day	774 (19.9)	1383 (21.8)	2157 (21.1)	
1 hour per day	499 (12.8)	987 (15.5)	1485 (14.5)	
2 hours per day	647 (16.7)	1084 (17.1)	1732 (16.9)	
3 hours per day	361 (9.3)	604 (9.5)	966 (9.4)	
4 hours per day	190 (4.9)	250 (3.9)	440 (4.3)	
5 hours or more per day	278 (7.1)	316 (5.0)	594 (5.8)	

Methods: We performed a cross-sectional survey using YRBSS 2019 data of US high school students in grades 9-12. CD was defined as difficulties in recall, concentration, and decision making due to emotional, physical, or mental problems. Digital screen time included daily time spent on TV, computers, tablets, and phone. Univariate and multivariable survey logistic regression analysis was applied to identify the prevalence of CD and its association with time spent on digital devices. Variables such as age, sex, race/ethnicity, grades, substance abuse, sleep duration, sadness, and self-reported CD were included in the study.

Results: Out of 10,317 participants, 37.9% reported CD. The prevalence of CD was higher in females compared to males (46.0% vs 29.9%). Compared to participants with no CD, participants having substance abuse such as alcohol (35.8% vs 26.6%), marijuana (28.3% vs 17.6%), cigarette (8.1% vs 4.7%), and illicit drugs (18.9% vs 9.0%) had a higher prevalence of CD. (p<0.0001) In regression analysis, daily video game/internet use for non-work-related activities for 4 hours (aOR:1.27; p=0.03) and >=5 hours (aOR:1.70; p<0.0001) had higher odds of having CD, compared to participants with no daily use, as summarised in Table 1.

Conclusion: The prevalence of CD is high in US high-school students, and excessive digital time is associated with higher odds of cognitive dysfunction. Those who played video games/used computers for non-work-related activities for four hours or more per day were at higher odds of reporting CD. We found no association between TV use and CD.

ID: 203
Poster Presentation
Topics: INFECTIOUS DISEASES, COVID-19
Keywords: COVID-19, pneumonia, neuroblastoma

COVID-19 pneumonia in a child. A surprise finding

Almendra, Margarida[1]; Silva, Tiago[1]; Constantino, Cláudia[2]; Brito, Maria João[1]
[1]Infectious Diseases Department, Hospital Dona Estefânia, Centro Hospitalar Universitário Lisboa Central, EPE, Portugal; [2]Paediatrics Department, Instituto Português de Oncologia de Lisboa

Background: Coronavirus disease 19 (COVID-19) tends to be milder in children, but severe cases have been reported. We described a case report of a toddler admitted to our department with additional findings, highlighting the importance of assessing the patient as a whole.

Case Presentation: A previously healthy, 15-month-year-old girl presented with fever and dry cough for 10 days, respiratory distress and PCR SARS-CoV-2 was positive. At admission, she presented with hypoxemia (SpO2 89-90% in room air), global retraction and bilateral bronchospasm. She was treated with bronchodilators, methylprednisolone, remdesivir and also amoxicillin/clavulanic acid. Her complete blood count revealed leucocytosis 16,160x109/L, 41% lymphocytes, C-reactive protein 57,9 mg/L, procalcitonin 0,13 ng/mL, sedimentation rate 44 mm/h, ferritin 218,4 ng/mL. Chest computed tomography (CT) scan revealed bilateral peripheral areas of ground glass, coexisting consolidation areas at inferior lobes but also revealed a 6 cm supra-renal mass. Abdominal ultrasound and CT confirmed an heterogeneous right supra-renal gland mass of 5,5cm along the greatest diameter with diffuse calcifications, evolving the inferior vena cava and the renal vascular pedicle, no signs of liver, bone, cutaneous or ganglionic metastization. These features were suggestive of neuroblastoma in stage L2. Vanillylmandelic acid, normetanephrine/creatinine ratio and metanephrine/creatinine ratio were elevated. The metaiodobenzylguanidine (Mibg) scan showed a localized disease. The total excision of the tumour mass was performed, and the histology confirmed neuroblastoma with no N-myc oncogene amplification, nor other bad prognosis chromosomal abnormalities. She is currently under oncological surveillance, with no signs of recurrence.

Learning Points Discussion: Neuroblastoma is the most common extracranial solid tumour of childhood. It is known for its broad spectrum of clinical behaviour and outcome. In this case, although this toddler was admitted due to COVID-19 pneumonia, it allowed to identify a localized tumour, perform excision and due to the favourable biology tumour, she has a very good chances of being cured and free of disease.

ID: 362
Poster Presentation
Topics: ALLERGY, IMMUNOLOGY & RESPIRATORY, HAEMATOLOGY / ONCOLOGY
Keywords: myelosuppression, giant cell myocarditis

Cyclosporine and allopurinol - A forgotten potentially severe drug interaction

Gonçalves, Catarina[1,2]; Almendra, Margarida[1]; Trigo, Conceição[3]; Batalha, Sara[4]; Neves, João Farela[1]; Estrada, João Falcão[1]
[1]Paediatric Intensive Care Unit, Hospital Dona Estefânia, Centro Hospitalar Universitário Lisboa Central, EPE, Portugal; [2]Paediatrics Department, Child and Women Health's Department, Hospital do Espírito Santo de Évora, EPE, Portugal; [3]Paediatric Cardiology Department, Hospital Santa Marta, Centro Hospitalar Universitário Lisboa Central, EPE, Portugal; [4]Haematology Department, Hospital Dona Estefânia, Centro Hospitalar Universitário Lisboa Central, EPE, Portugal

Background: One of the goals of immunosuppressive therapy is to diminish the immune response at the time of transplantation to prevent organ rejection. The need for polypharmacy increases the potential for serious drug interactions. They can involve changes in drug absorption, distribution, metabolism or excretion (pharmacokinetic interactions) or involve effects on drug concentration (pharmacodynamic interactions).

Case Presentation: A 17-year-old teenager with a personal history of GCM for two years, under immunosuppressive therapy (cyclosporine, Azathioprine, and prednisolone) since diagnosis and allopurinol which was started three months before admission, presented with dizziness, diffuse headache and asthenia for 10 days. Two days before admission, a right buttock tumefaction and fever were noted. At admission, he was pale and tachycardic and had an infected pilonidal cyst. There were no signs of blood dyscrasia. Complete blood count revealed severe pancytopenia (severe anemia (Hb 4 g/dL); neutropenia 170/uL and thrombocytopenia 16.000/uL), elevated reticulocytes 10,5%, low folic acid level and elevated c-reactive protein. Electrocardiogram and echocardiogram revealed no "de novo" changes. He was admitted to the pediatric intensive care unit, transfused (red blood cell and platelets), and started on broad-spectrum antibiotics with a good outcome. Azathioprine was suspended on day 2 of admission with gradual improvement pancytopenia. A pilonidal cyst was drained, and he completed 14 days of antibiotics. He also started folic acid supplementation.

Learning Points Discussion: Immunosuppressive treatment in GCM includes cyclosporine, which has been associated with prolonged transplant-free survival. This case report describes myelosuppression probably due to drug interaction (Azathioprine and allopurinol). The pathway responsible for the metabolism of Azathioprine is xanthine oxidase which is inhibited by allopurinol. Allopurinol has been reported to potentially lead to higher levels of cyclosporine, leading to life-threatening myelosuppression. Current recommendations stated that doses of Azathioprine should be reduced by 50 to 75 per cent when administered concomitantly with allopurinol. In our case, after suspending Azathioprine, there was a clinical and gradual laboratory improvement, and the adolescent was dismissed clinically well. The follow up showed complete regression of pancytopenia after one month, and there was no worsening of cardiac status.

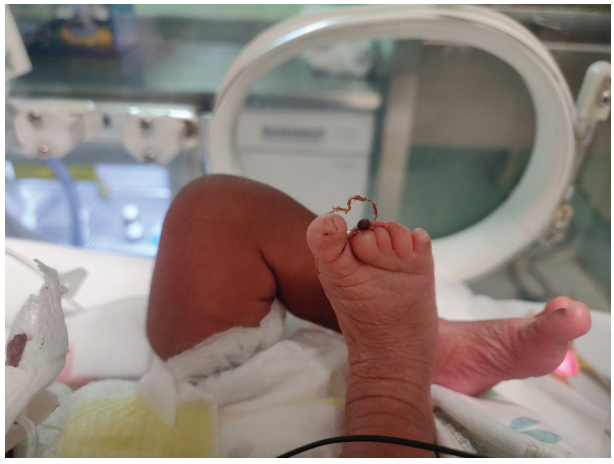
ID: 363
Poster Presentation
Topics: RARE DISEASES, NEONATOLOGY
Keywords: Amniotic band sequence, congenital defect

Amniotic Band Sequence– A case report of a rare but severe entity

Lira, Joana Terroso; Pereira, Isabel Ayres; Reis, Joana Soares; Gomes, Anabela
CHVNGE, Portugal

Background: Amniotic band sequence is a rare entity that comprises a broad spectrum of congenital defects with an estimated prevalence of 1.08 per 10,000 births. Despite lack of scientific evidence on risk factors, it is believed to result from rupture of the amnion in early pregnancy resulting in multiple loose strands (amniotic bands) that adhere to or entangle the fetus, affecting normally developed structures. The newly formed constriction rings can, in severe cases, lead to vascular disruption and subsequent partial autoamputation of the involved structure. Nonmidline body is predominantly affected, but craniofacial and spinal defects can also occur. The diagnosis may be suspected as early as the late first trimester. Selected cases could have an indication for in-utero lysis.

Case Report: A 33 weeks preterm female weighing 1945g was born to a 28-year-old gravida 2 para 1 mother with chronic B Hepatitis. Pregnancy was surveilled in Angola, with two ultrasounds performed at 12 and 23 weeks reported as normal. An emergent cesarean section was performed due to severe fetal bradycardia in the context of maternal sepsis. She was born depressed and was immediately intubated, with a good response (AI 2/5/7) being off mechanical ventilation 1 hour later. Her clinical examination revealed multiple distal deformities in all four limbs, being possible to observe syndactyly and amputation phenomena. Small constricting strings were visible, attached to the distal extremities. On day 1 she was observed by a pediatric surgeon that excised



the constricting bands in some of the fingers. She was discharged from the hospital on day 24, and currently, at 3 months, she has a normal development and is followed by a multidisciplinary team that includes an orthopaedic surgeon (Figure).

Discussion: Amniotic band sequence is a poorly known entity that can severally affect an otherwise normally developed baby. Efforts should be made to both understand its risk factors in a way that can lead to its prevention and to make the earliest possible detection so proper management can be ensured. Serial ultrasound examination is crucial so that timely in utero lysis of constriction rings can be offered before severe vascular compromise to restore normal perfusion and prevent amputation.

ID: 305
Poster Presentation
Topics: RARE DISEASES
Keywords: Gaucher disease, treatment

Different treatment outcomes in Gaucher disease type 1: case studies

Sinchuk, Nataliya Ivanivna; Dudnyk, Veronika Mykhailivna
Vinnytsia Pirogov Memorial Medical University, Ukraine

Background: The initial diagnosis of Gaucher disease (GD) is based on the β-glucosidase enzyme activity. However, similar levels of enzymes are not a predictor of treatment outcomes in different patients.

Case Presentation Summary: Patient A, male born in 2003, and patient B, a female born in 2004, diagnosed with GD type 1 (GD1) at the age of 1 year 9 months and 6 years, respectively, due to hepatosplenomegaly, anaemia, thrombocytopenia and ecchymoses. Enzyme testing revealed undetectable levels of β-glucosidase activity in both patients. DNA analysis showed two different mutations, one of which was homozygous G377S/G377S mutation. Both patients have been receiving imiglucerase 60 units/kg IV every other week. Patient A started his therapy at the age of 2 years 11 months while patient B – at 7,5 years. After treatment initiation, both patients displayed positive dynamics with significant improvement of laboratory haematological values, fading of hemorrhagic rashes. The spleen size was reduced by one third in patient A and returned to normal in-patient B. At age 9, patient A underwent an interruption in ERT that was followed by poor treatment compliance. The consequent period of irregular therapy received by patient A resulted in retardation of clinical and laboratory pictures. Patient B continued to display favourable

overall status. BMI, height and hematologic values are within the reference range. Liver and spleen sizes remained normal. Opposite to this, patient A had not demonstrated the reduction of spleen size. The patient developed spleen calcifications and osteoporosis of the hips. From 14 years of age patient's behaviour changed; he stopped talking, demonstrated autistic behaviour.

Learning Points Discussion: Two patients with GD1, who had undetectable enzyme levels, similar disease onset, and progression, display dramatic differences in treatment outcomes. Thorough evaluation brought to the assumption that treatment interruptions may lead to irreversible complications and affect the efficiency of the treatment. We conclude that discontinuation of ERT without medical reasons should be avoided because the beneficial clinical effects are soon lost when treatment is interrupted.

ID: 142
Poster Presentation
Topics: PSYCHIATRY, PUBLIC HEALTH, COVID-19
Keywords: Covid 19, school, mental health, remote learning

Exploring the impact of school closures on the mental health of children in grades K-12 in the United States during the COVID-19 pandemic

Danisi, Jacqueline[1]; Maningat, Alexandra[2]; Jonas, Margaret[2]; Woods-Reinicke, Victoria[2]; Slater, Natalie[3]
[1]OMS-III, University of the Incarnate Word School of Osteopathic Medicine, United States of America; [2]OMS-IV, University of the Incarnate Word School of Osteopathic Medicine, United States of America; [3]MD, FAAP, University of the Incarnate Word School of Osteopathic Medicine, United States of America

Background and Objectives: In March 2020, approximately 57 million children were affected by massive school closures in the wake of the SARS-CoV-2 pandemic. Many child advocates expressed concerns about the impact of physical school closures and transition to virtual learning on school-aged children's mental health and well-being, particularly those who utilized resources, such as counselling or special education, within the school system. This systematic review was done to identify a) the effect and impact of school closures on the mental health of children in grades K-12, if any, and b) to guide future research on the topic.

Methods: A systematic review focused on published articles addressing the effect that COVID-19 related school closures and transition to virtual learning had on school-aged children's and adolescents' mental health. Inclusion criteria included: human studies, scholarly papers, school-aged children, SARS-CoV-2 research, mental health impacts, an article written in English, and research- based in the United States. Exclusion criteria included: not human studies, studies not available in English, individuals over 18 years old, and SARS-CoV or MERS-CoV research. The search was conducted between March 20, 2021, and April 18, 2021. Articles were further screened utilizing the PRISMA flow diagram. Once screened, included articles were reviewed by one member of the research team and a PICO-style analysis was used for each article. After the initial review, a total of 11 articles were included in this systematic review.

Learning Points Discussion: We identified several areas of a child's life that school closures limited access to, such as reduced-cost meals, mental health services, and special education. Since the school closures and subsequent transition to online schooling, these resources became unavailable or limited by virtual technology. Children from lower socioeconomic backgrounds and marginalized communities were particularly vulnerable to negative mental health changes due to school closures and decreased access to school- based resources. These individuals belonging to a lower socioeconomic class are more likely to have inadequate computers to utilize in-home

learning, have more unstable internet connections, and are less likely to have a caregiver that can stay home to help with their distanced learning. This research will be vital in understanding any adverse effects on children and shaping the future development of school-based programs and their funding.

ID: 304
Poster Presentation
Topics: NEUROLOGY
Keywords: Hypothalamic hamartomas, psychomotor regression, surgery

Hypothalamic hamartomas and refractory epilepsy: the importance of surgery

Curval, Ana Rita; Gomes, Sara; Fonseca, Jacinta; Melo, Cláudia; Sampaio, Mafalda; Alves, Dílio; Sousa, Raquel
Centro Hospitalar Universitário de São João, Portugal

Background: Hypothalamic hamartomas (HH) are rare hypothalamus histopathologically benign malformations. Pedunculated lesions typically manifest with precocious puberty, whereas sessile lesions do so with epilepsy. Although gelastic seizures are the most common, about 5% are presented with epileptic spasms and can evolve to refractory epilepsy with developmental delay.

Case Presentation Summary: 4-year old child manifested brief episodes of a sudden stop of activity with tonic limb posture and ocular supraversion, head drop and chewing movements at 11 months, about 3-4 times a day. The electroencephalography (EEG) revealed bilateral fronto-temporal paroxysmal activity, and the brain MRI identified a pedunculated hypothalamic hamartoma. We decided to start valproic acid and clobazam. At 13 months, the child presented psychomotor regression with persistence of crisis but no focal neurological signs and no signs of precocious puberty. The psychometric evaluation confirmed a global development delay, predominantly in speech and communication (QGD 66). At 14 months, the child presented a cluster of brain epileptic spasms, and the correspondent EEG showed slow, single or multiple, wide and global activity. At 15 months, due to refractory epilepsy, a transcranial HH receptive surgery was performed. A gradual reduction of crisis enabled the start of the progressive suspension of antiepileptics. Currently under valproic acid, with no signs of crisis for 14 months, the patient maintains development delay; however, its prognosis is favourable. The GLI3 gene study didn´t show any signs of potentially pathogenic variables.

Learning Points Discussion: The presentation of pedunculated HH, preceded by epileptic spasms, is very rare. In this case, the surgical intervention allowed an almost immediate stop of epileptic spasms and a favourable neurocognitive evolution until the 3-year follow-up. We would like to highlight the possibility of surgical removal of the pedunculated HH and the benefits of early diagnosis and intervention.

ID: 105
Poster Presentation
Topics: NEUROLOGY
Keywords: Imaging, skull base

Imaging of pediatric skull base lesions

Dyer, Spencer C; Kalina, Peter
Mayo Clinic, United States of America

Objective: To describe the imaging characteristics of several skull base lesions in children.

Table 1. Frequency of dental disturbances according to age, treatment protocol and risk grouping

	Teeth, *n (%)*	Not determinable, *n (%)*	D0 *(R/C>1,6)*	D1 *(R/C>1,2-1,6)*	D2 *(R/C>0,9-1,1)*	D3 *(R/C>0,9)*	D4 *(Microdontia)*	D5 *(Hypodontia)*
TOTAL	4347	30.4% (1323)	96.2% (4180)	3.3% (142)	0.4% (18)	0.2% (7)	4.1% (177)	0.6% (26)
Age group *(%,n)*								
0-5.9 years	68.7% (2987)	82.7% (1094)	95.9% (2866)	3.4% (101)	0.5% (14)	0.2% (6)	5.7% (169)	0.5% (15)
6-16.9 years	31.3% (1360)	17.3% (229)	96.6% (1314)	3% (41)	0.3% (4)	0.001% (1)	0.6% (8)	0.8% (11)
Adjusted p-value			0.46	0.64	0.64	0.55	<0.001*	0.46
Protocol *(%,n)*								
NOPHO ALL-92	27.7% (1204)	31.8% (421)	95.9% (1155)	3.2% (39)	0.5% (6)	0.3% (4)	3.6% (43)	0.6% (7)
NOPHO ALL-2000	27.6% (1198)	20.6% (272)	95.2% (1141)	3.8% (46)	0.8% (10)	0.1% (1)	2.8% (33)	0.2% (2)
NOPHO ALL2008	19.1% (828)	26.4% (349)	98.3% (814)	1.7% (14)	0	0	7.2% (60)	0.8% (7)
Miscellaneous protocols	20.6% (894)	18.7% (248)	96.3% (861)	3.2% (29)	0.2% (2)	0.2% (2)	4.6% (41)	1.1% (10)
Relapse patients	5.1% (223)	2.5% (33)	93.7% (209)	6.3% (14)	0	0	0	0
Adjusted p-value			0.002*	0.01*	0.07	0.55	<0.001*	0.07

Material and Methods: Several interesting and illustrative cases will be highlighted utilizing multi-modality imaging, including CT, MRI, Angiography, and radiographs. This will include neoplastic, infectious, inflammatory, vascular, and congenital etiologies.

Results: While some of the described lesions are straightforward, others will have a differential diagnosis.

Conclusion: The imaging specifics of skull base lesions are important to the pediatrician, neurologist, and surgeon for treatment options, intra-operative considerations of complex skull base anatomy, and post-treatment follow-up considerations.

Poster Presentation

Topics: HAEMATOLOGY / ONCOLOGY

Keywords: Defect, dentition, development, leukemia, survivor

Late adverse effects of childhood acute lymphoblastic leukemia treatment on developing dentition

Immonen, Egle[1,2]; Nikkilä, Atte[1,3]; Peltomäki, Timo[2,4,5]; Aine, Liisa[2,4]; Lohi, Olli[1,3]

[1]Tampere Center for Child, Adolescent and Maternal Health Research, Faculty of Medicine and Health Technology, Tampere University, Tampere, Finland; [2]Department of Ear and Oral Diseases, Tampere University Hospital, Tampere, Finland; [3]Tays Cancer Center, Tampere University and Tampere University Hospital, Tampere, Finland; [4]Faculty of Medicine and Health Technology, Tampere University, Tampere, Finland; [5]Institute of Dentistry, University of Eastern Finland, Kuopio, Finland

Background: Childhood cancer survivors show a variety of late adverse effects on dental health. The purpose of this study was to examine the prevalence and severity of dental abnormalities in permanent dentition in childhood leukaemia survivors.

Materials and Methods: Retrospective analysis of panoramic radiographs was performed for 178 childhood leukaemia survivors aged below 17 years at the time of diagnosis. Sex, age at diagnosis, interval between ALL diagnosis and the follow-up radiograph, treatment protocol, and risk grouping were recorded. Abnormalities of tooth development and defect index were used to assess the frequency and severity of dental abnormalities.

Results: One hundred eight (61%) patients had no dental abnormalities at follow-up examination at a median of 6.1 years after diagnosis. Microdontia was more frequent in children under 6 years of age at the time of diagnosis (5.7% vs 0.6%, $p < .001$). Significant differences were noted between distinct ALL treatment protocols with more common microdontia in patients treated according to the NOPHO ALL2008 protocol. Tooth agenesis was more frequent in patients who underwent therapy according to high- risk arms compared to intermediate- or standard-risk arms (3.8% vs 1.4%, $p = .01$). Patients under 6 years of age at diagnosis had a significantly higher average defect index score than older patients (7.0 vs 2.8, $p = .01$).

Conclusions: Children and adolescents who received ALL treatment were at risk for dental damage. Young age and high-intensity therapy were associated with the severity of dental abnormalities.

ID: 301

Poster Presentation

Topics: NEONATOLOGY

Keywords: Neonatology, Home Oxygen, Late Preterm, Term

Late preterm and term home O2 therapy study

Gracie, Kirsty[1]; Gopalakrishnan, Palghat[2]
[1]NHS Greater Glasgow & Clyde, United Kingdom; [2]NHS Lanarkshire, United Kingdom

Background: Little evidence is published relating to home oxygen therapy in the late-preterm or term neonatal population. There is an ongoing debate amongst neonatologists as to what the lower limit target Sp02 during an oxygen saturation study should be. Currently, the majority of neonatal units in Scotland target Sp02<94% for <5% of the total duration of the study. We sought to describe characteristics of neonates born at 30 weeks gestation and above, who, over a 5-year period, were discharged from our tertiary unit on home oxygen. Based on their earliest available saturation study, we also sought to determine which babies may not have met the criteria for home oxygen if currently accepted saturation limits were altered.

Methods: Babies were identified from community liaison nurse records. Required data was obtained from BadgerNet and Clinical Portal and collated in an Excel spreadsheet.

Results: Thirty-four babies were included, of which 76% were male. Gestation at birth ranged from 30+0 to 39+4 weeks. Forty-one per cent of mothers resided within the top 20% most deprived postcodes in Scotland. The majority of pregnancies (79%) were not affected by PROM. Sixty-five per cent of mothers received a complete course of antenatal steroids. Over half of the babies were delivered by the emergency section. Seventy-one per cent of babies were managed with non-invasive support only at delivery. Regarding maximal respiratory support during admission, 32% of babies required conventional ventilation, while 29% received non-invasive support. Sixty-two per cent had a diagnosis of RDS, and 35% were diagnosed with late-onset sepsis during admission. Three babies in the study had trisomy 21. Length of admission ranged from 26 to 116 days. Two-thirds of babies were discharged in 0.1 or 0.2 litres. Fifty per cent no longer required oxygen by 20 weeks post-discharge, and 74% by 30 weeks. If SpO2<92% for <5% of the study was acceptable, 50% of the babies would not have qualified for home oxygen based on their earliest available study. If Sp02<90% for <5% was acceptable, 71% would not have qualified.

Conclusions: This cohort study suggests that the male gender is a risk factor for home oxygen therapy in the late-preterm and term population. Avoidance of intubation and ventilation does not guarantee discharge without home oxygen. The majority of these infants no longer require oxygen at 30 weeks post-discharge. Targeting SpO2<90% for <5% of total analysis interval could significantly reduce the number of late-preterm, and term babies discharged home on oxygen.

ID: 331
Poster Presentation
Topics: HAEMATOLOGY / ONCOLOGY
Keywords: methotrexate, neurotoxicy, leukoencephalopathy, leukemia

Methotrexate-Induced Neurotoxicity and Leukoencefalopathy in an Adolescent with Acute Lymphoblastic Leukemia - a case report

Stella, Lorena[1]; Borges, Joana[1]; Almeida, Ana Isabel[2]; Martins, Cristiana[1]; Maia, Íris[1]
[1]Pediatric Service, Portuguese Institute of Oncology, Porto, Portugal; [2]Neuroradiology Department, Centro Hospitalar Universitário de São João, EPE, Porto, Portugal

Introduction: Acute lymphoblastic leukaemia (ALL) is the most common childhood cancer. Methotrexate (MTX) is an essential drug in the treatment of ALL, not only in systemic control of leukaemia but also in treatment and prophylaxis of the central nervous system (CNS). However, MTX can cause significant neurotoxicity.

Case report: A 14-years-old girl diagnosed with Philadelphia positive ALL, CNS negative, had had lumbar puncture (LP) syndrome during induction. At the end of it, she had a septic shock that required 2 days of pediatric intensive care unit admission, with a diagnosis of iliac thrombosis, and started enoxaparin. After this, she restarted headaches, so she had magnetic resonance imaging (MRI) that showed cerebral thrombosis (superior longitudional and transverse sinus) and also bilateral frontoparietal subdural collections that were reabsorbed posteriorly. According to EsPhALL (2015), she proceeded with IB, and two LP with intratechal MTX have been performed. Nine days after her second LP, the teenager began with headache, dysarthria and aphasia. On neurological examination, she was awake and alert with emotional lability, bilateral mydriasis, hemiparesis that progressed to tetraparesis and dysmetria. The cerebral angioCT (computed tomography) was normal without any signs of vascular stroke. The cerebral magnetic resonance imaging (MRI) depicted bilateral and symmetrical restricted diffusion and slightly hyper signal on T2/FLAIR WI of centrum semiovale, suggesting acute MTX induced leukoencephalopathy. She was admitted for close neurological monitoring in the observation room, recovery from aphasia and paresis between 24 to 48 hours later. Nowadays, she has a normal physical and neurological examination. MRI 22 days after showed almost complete resolution of previous findings.

Conclusion: MTX-induced neurotoxicity usually occurs between 2 and 14 days after intrathecal or high-dose IV-MTX, and neurological symptoms, stroke-like, are reported in 1 to 4.5% of patients. Its pathophysiology and treatment are not well established. These events are usually transitory, and the majority of patients are rechallenged with MTX without recurrence of symptoms. We believe that in addition to pediatric oncologists, emergency department and intensive care providers should be aware of the potential neurotoxicity of methotrexate and include it in the differential diagnosis when treating a patient with neurological symptoms in the setting of recent MTX treatment.

ID: 143
Poster Presentation
Topics: PSYCHIATRY
Keywords: motor development, autism spectrum disorders, phenotype severity

Motor development in children with autism spectrum disorders

Budisteanu, Magdalena[1,2,3]; Linca, Florentina[1]; Andrei, Emanuela[1]; Glangher, Adelina[1]; Ioana, Doina[1]; Mateescu, Laura[1,4]; Dobrescu, Iuliana[1,4]; Rad, Florina[1,4]
[1]Obregia Clinical Hospital of Psychiatry, Bucharest, Romania; [2]Victor Babes National Institute of Pathology, Medical Genetics Laboratory, Bucharest, Romania; [3]TituMaiorescu University, Faculty of Medicine, Bucharest, Romania; [4]Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

Introduction: Autism spectrum disorder (ASD) is a common childhood developmental disorder. The ASD scientific community described different particularities in children with ASD regarding gross and fine motor skills, muscle tone, coordination, posture, balance. This paper will present our results regarding motor development in a cohort of children with ASD.

Material and Methods: the study included 273 patients (206 boys and 67 girls) with ages between 2 and 18 years. A complete clinical evaluation was performed, including neurological examination focusing on psychomotor development, psychiatric examination and psychological evaluation with specific ASDs tests (ADOS, ADI-R). We studied motor development in correlation with the birth type (vaginal or caesarian section), birth problems, ASD severity, and cognitive development.

Results: 173 patients had motor developmental delay: 136 patients had a global delay of motor development, and 37 children had only gross motor developmental delay. There was a statistically

significant relationship between the motor milestones, postnatal adaptation, and the existence of muscular hypotonia, p<0.05. Children with ASD and delayed motor development had postnatal distress, a low IQ score and hypotonia, p<0.05. There were significant differences between participants who had severe symptoms and the rest of the participants in terms of the development of gross motor skills, p>0.05. There were significant differences between patients with severe symptoms and patients with mild symptoms in terms of self-service skills.

Conclusions: Motor development disorders were observed in a significant number of ASD cases in our cohort (over 63%). There was a statistically significant correlation between motor development delay and the presence of some birth problems, a severe type of ASD and a severe or moderate intellectual disability. Thus, physical therapy and occupational therapy should be included in the management plan of patients with ASD.

ID: 170
Poster Presentation
Topics: INFECTIOUS DISEASES, NEONATOLOGY, NEUROLOGY
Keywords: neonates, meningitis, crp

Neonatal bacterial meningitis: a comparison between home-born and hospital-born neonates

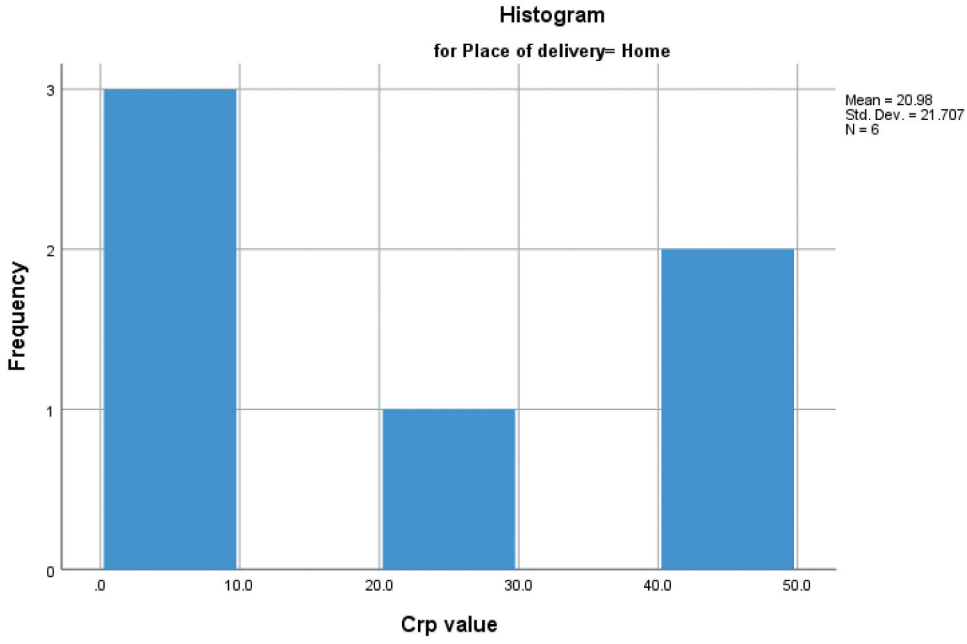
Mohamed Abdelaziz Dafalla, Ansam; Abdelghyoum Mahgoub Mohamed, Ahmed
Faculty of Medicine, Alneelain University, Khartoum, Sudan

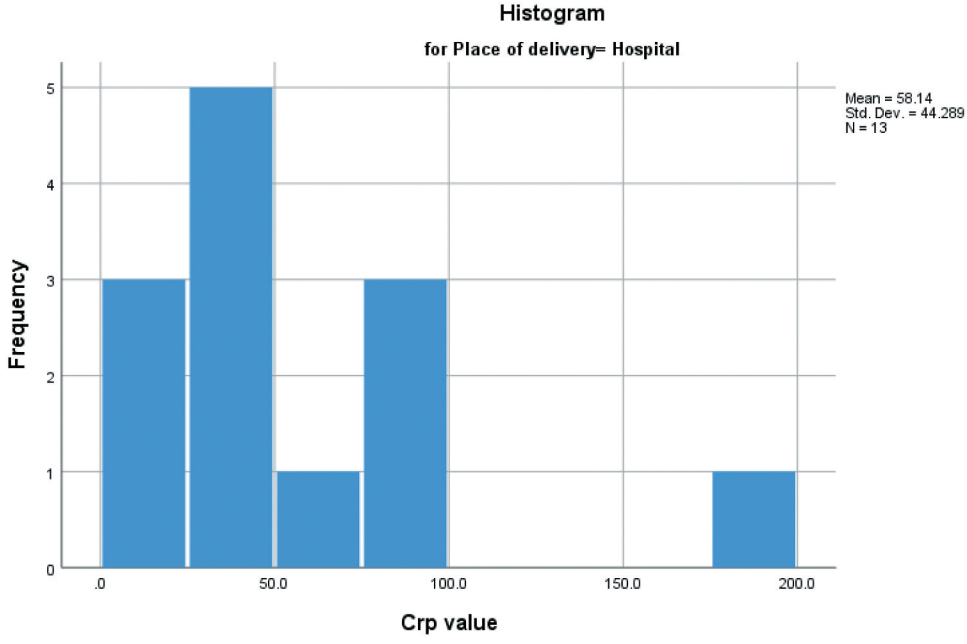
Background: Bacterial infections account for 26% of newborn fatalities in developing countries and are considered the second greatest cause of mortality in the neonatal age. Meningitis is a major cause of neonatal death and a significant burden. The purpose of this study is to compare the bacterial profiles and clinical characteristics between home-born and hospital-born neonates diagnosed with meningitis and admitted to a tertiary hospital in Khartoum, Sudan.

Methods: This descriptive cross-sectional study included 24 neonates aged <28 days, diagnosed with bacterial meningitis and admitted to the NICU of a tertiary hospital in central Sudan between January 2018 and July 2021. According to the place of delivery, cases were divided into two subgroups: home-born and hospital-born. Clinical symptoms and signs were used to establish the diagnosis of meningitis. All neonatal and perinatal data were collected, including Blood and CSF test findings, antibiotics administered, and outcome. The P-value was fixed at 0.05. The SPSS 26 package was used for analysis.

Results: Of 565 admissions, 24(4.2%) were diagnosed with bacterial meningitis, 17(70.8%) and 7 (29.2%) from hospital and home deliveries, respectively. Fever 18(75%), refusal to feed 15(62.5%), and seizures 14(58.3%) were the most common clinical manifestations with no significant difference across the subgroups. Crp(C-reactive protein) test was found to be positive in 4(57%) home-born and 13(76.5%) hospital-born neonates; the difference is not significant across the subgroups. The mean CRP level for neonates delivered at home was 21 mg/dl and for neonates born in hospitals was 58 mg/dl, with a significant difference (p=0.044). The male gender had a substantially higher CRP result (p=0.007). Blood cultures were found to be positive in 1 (14.3%) and 10 (58.9%) of the neonates born at home and in the hospital, respectively. The most prevalent isolates were Pseudomonas (n=4) and Klebsiella (n=2). No significant differences were observed between the groups in terms of positive blood cultures, disease onset, or mortality rate (Figure).

Conclusion: The majority of admissions had a negative blood culture, most isolates were gram-negative bacteria, and laboratory findings differed in some tests between home and hospital born neonates. Further research with a larger sample size is needed to demonstrate better the influence of delivery place on the presentation of meningitis and its outcome in neonates.





ID: 348

Poster Presentation

Topics: GENERAL PEDIATRICS, PUBLIC HEALTH

Keywords: schoolchildren, obesity, overweight

Overweight and obesity among primary schoolchildren in Kazakhstan during COVID-19 pandemic

Abdrakhmanova, Shynar[1,2]; Aringazina, Altyn[3]; Adayeva, Assel[1,2]; Slazhnyova, Tatyana[1]

[1]National Center of Public Health of the Ministry of Health, the Republic of Kazakhstan; [2]Kazakhstan's medical university "Kazakhstan School of Public Health", Almaty, Kazakhstan; [3]Caspian International School of Medicine, Caspian University, Almaty, Kazakhstan

Introduction: Childhood overweight and obesity remain serious public health problem. In the Republic of Kazakhstan, few studies have quantified overweight rates among children. To assess overweight and obesity in primary school children based on measured intercountry comparable data, a cross-sectional survey was implemented in 2020 based on the World Health Organization (WHO) European Childhood Obesity Surveillance Initiative (COSI) protocol.

Material and Methods: The study was conducted on a national representative sample of 6851 children of 2-3 grades in October- December 2020. The anthropometric variables were measured by standardized equipment to calculate body mass index. Prevalence of overweight and obesity was determined for 6-9-year-old children by gender using WHO growth reference 2007. The prevalence of weight categories was compared for 8-year-olds with the 2015 COSI survey.

Results: 20,6% of children aged 6-9 years old were overweight, and 6,6% were obese. Among boys, the prevalence of overweight and obesity was higher, 23,6% and 8,7%, respectively, compared to girls 17,6% and 4,6%, respectively ($p < 0.001$). The prevalence of overweight among children living in urban areas was 23.1%, significantly higher than children from rural areas - 17.5% ($p < 0.001$). The same trend is observed for obesity both by gender and by place of residence. The prevalence of obese children is higher in urban areas (8.0%) compared with the proportion of obese children in rural areas (5.2%). During the period between two surveys (2015- 2020) the prevalence of overweight among 8-year-old boys increased from 18.7% in 2015 to 24.2% in 2020 and for obesity from 6.6% in 2015 to 9.6% in 2020, although non-significantly. No changes in these indicators were found in girls.

Conclusion: Thus, one-fifth of Kazakhstan children 6-9 years of age were overweight or obese. The results of the child surveys from 2015 and 2020 demonstrate the trend for a plateau in overweight and obesity prevalence. The survey results demonstrate the need for actions to mobilize policy and society to tackle the childhood obesity epidemic and the need for continuous monitoring trends to better understand the progression of childhood overweight and obesity.

ID: 335

Poster Presentation

Topics: ADOLESCENT MEDICINE, PUBLIC HEALTH

Keywords: hospital school, hospital teacher, medical personnel, students' wellbeing

Polish hospital school teachers' perception of the role of cooperation with medical personnel

Gajda, Maja[1]; Małkowska-Szkutnik, Agnieszka[1]; Kleszczewska, Dorota[2]

[1]University of Warsaw, Faculty of Education, Poland; [2]Institute of Mother and Child Foundation, Poland

Background: The functioning of children and adolescents who suffer from chronic conditions may be limited by the severity of the disease, treatment, and hospitalization. Hospital schools have a role in counterbalancing some of the negative outcomes. The study aimed to define the role of hospital teachers in supporting young patients' wellbeing and recovery. The following data is presented with a focus on the importance of cooperation between hospital school teachers and hospital personnel in helping children cope with a lifelong illness and preparing them for the transition from hospital to mainstream school.

Methods: The presented data is part of an international project, Back to School. The research was funded by ERASMUS+, grant number 2019-1-PL01-KA201-065602. The data from qualitative research conducted on 21 Polish hospital school teachers was included in the analysis. A semi-structured interview method was chosen. The study received a positive opinion from the Bioethical Committee of the Institute of Mother and Child (number 23/2020, 21 May 2020). The data obtained in the study was analyzed with descriptive analysis and a two-step coding procedure. Atlas, a program assisting qualitative data analysis, was used. Nineteen detailed descriptive codes were defined for hospital teachers' perception of their role in supporting students' wellbeing. Additionally, fifteen descriptive codes were defined concerning the subject of hospital teachers' cooperation with medical personnel.

Results: The majority of interviewed teachers perceived their role in hospital school as important in helping students accept limitations, find new passions, build mental strength, self-esteem, and resilience. Several teachers said they tried to help students develop skills necessary to function with a lifelong chronic disease. Also, the interviewees expressed their appreciation of the medical staff's work and highlighted the importance of cooperation with doctors and nurses to support students' wellbeing and recovery fully. However, at the same time, they sometimes felt that their role in the hospital environment was underestimated by medical personnel. Several of the interviewed teachers expressed concern that doctors and nurses had difficulty in accepting and understanding the importance of their work in a hospital. Also, several teachers perceived mutual respect as a key element of working in the same workplace.

Conclusion: Some teachers feel that their work with students in a hospital setting is undervalued by medical personnel. The lack of recognition and acceptance from doctors and nurses is likely to make teachers feel frustrated and unmotivated. Thus, there seems to be a need to strengthen the cooperation between hospital school teachers and medical personnel and to raise awareness of the importance of the role schools located in hospitals have.

ID: 336
Poster Presentation
Topics: ADOLESCENT MEDICINE, PUBLIC HEALTH
Keywords: adolescents, social media use, problematic users

Prevalence of social media problematic use among adolescents in Kazakhstan

Adayeva, Assel[1,2]; Abdrakhmanova, Shynar[1,2]; Ng, Kwok[3,4]; Slazhnyova, Tatyana[1]; Kausova, Galina[2]
[1]National Center of Public Health of the Ministry of Health, the Republic of Kazakhstan; [2]Kazakhstan's medical university "Kazakhstan School of Public Health"; [3]University of Eastern Finland, Finland; [4]Physical Activity for Health Research Cluster, Health Research Institute, Department of Physical Education and Sport Sciences, University of Limerick, Ireland.

Introduction: Communication via electronic media is becoming increasingly common among the population, including adolescents. Such communication could have health risks: physical activity reduction, mental health issues and other consequences.

Purpose: To identify the nature of adolescents' use of social media and specify problematic users and compare different respondent categories' indicators.

Materials and Methods: The data were obtained from the 2018 Health Behavior in School-aged Children (HBSC) study in Kazakhstan. According to the HBSC international study protocol, a survey was conducted among adolescents aged 11- 15 years (n= 4 731, 50.6% of boys, 55% of urban schoolchildren). Nine item Social Media Disorder Scale measured the problematic social network use: constant thoughts about social media use; dissatisfaction with the limited time spent at social

networks; feeling bad when not using social media; attempts to spend less time on social media, but failed; regular neglect other things (sports, hobbies) in favour of social media; regular disputes with others about the use of social media; regular deception of parents or friends about the time spent on social media; the use of social media to escape from negative emotions; serious conflicts with family due to use of social media. A problematic social media user was considered as someone who responded positively to 5 or more items on the scale, with at least one of the following items positively marked: neglect of sports, hobbies, disputes with others and conflicts with family.

Results: Signs of problematic social media use were found among 6.9% of Kazakhstan adolescents. Overall, there were more problematic social media users among boys (8.2%) compared to girls (5.6%, $\chi 2 = 10.7$, $p<0.01$) with high gender difference was observed among 11-year-olds. Among all age groups (11, 13, 15 year olds) problematic social media users were equally common (6.5%, 6.5%, 7.5%, respectively, $\chi 2 = 1.4$, $p>0.05$). Despite the better access to the Internet in cities compared with rural areas, it is alarming that rural adolescents have the same prevalence level of problematic social media use compared to their urban counterparts (6.5% and 7.3%, respectively, $\chi 2 = 0.9$, $p>0.05$). No association was found between the level of family affluence and the prevalence of problematic use of social networks.

Conclusion: Findings show that adolescents improper use and dependence on social media could become a serious public health issue. The study indicates the need to develop and implement measures to equip adolescents with knowledge and skills for self- regulation of social media use.

ID: 104
Poster Presentation
Topics: INFECTIOUS DISEASES, PUBLIC HEALTH, EMERGENCY PEDIATRICS
Keywords: meningitis, pseudomonas, animals

Pseudomonas aeruginosa meningitis in a previously healthy boy - case report

Chisnoiu, Tatiana[1,2]; Mihai, Cristina Maria[1,2]
[1]Constanta Clinical Emergency Hospital, Pediatric Department, Romania, Romania; [2]Pediatric Department, Ovidius University Constanta

Introduction: Acute bacterial meningitis is a severe condition, accompanied by a high degree of mortality or irreversible sequelae, or even death of the patient. Pseudomonas aeruginosa is a Gram-Negative bacillus, frequently incriminated in nosocomial infections, but meningitis caused by this microorganism is very rare.

Case description: We report a case of Pseudomonas aeruginosa meningitis in an 8-year-old boy previously healthy, who lives in a rural area about 100 km from the hospital, that presents to the Emergency Department with high fever, vomiting, headache. Laboratory tests at admission revealed leukocytosis (white blood cell (WBC) count of 25.4 × 109/L reference range 4.5–13.5), neutrophils of 15.2 (reference range 1.8–8), elevated C-reactive protein (CRP) -17.07 mg/dL (reference range <0.5 mg/dl), ESR 50 mm/h (reference range <10 mm/h). Nose and throat cultures, urine and stool cultures, as well as blood cultures were negative. The HIV antibody screen was negative. Lumbar puncture showed hyperproteinorraquia (620 mg/l), with cellularity of 6728 elements/mmc. Pseudomonas aeruginosa was identified on culture in the cerebrospinal fluid. Computed tomography scan of the brain and chest radiography was normal. He started treatment with ceftazidime, and after receiving the result of the lumbar puncture, he started treatment with meropenem (40 mg/kg/dose in 3 administrations per day IV) and vancomycin (15 mg/kg/dose every 6 hours IV), maintenance IV fluids and anticerebral edema measure. The evolution was favourable, with the remission of neurological symptoms in 2 days, but the patient was discharged after receiving 15

days of intravenous treatment with double antibiotic therapy. At home, the patient received treatment with cefpodoxim for 2 weeks.

Conclusions: Although Pseudomonas meningitis is often associated with a history of hospitalization/surgery, it is unusual for this Gram-negative to occur in a patient who has never been hospitalized. We correlate the isolation of a rare Pseudomonas aeruginosa meningitis from animals, given that the patient lives in rural areas and has animals (goats).

ID: 258
Poster Presentation
Topics: ALLERGY, IMMUNOLOGY & RESPIRATORY
Keywords: Negative pressure pulmonary edema, anesthetic induction

Pulmonary edema in cancer patient after anesthetic induction

Mota, Barbara[1]; Curval, Ana Rita[1]; Silva, Sónia[1]; Ferraz, Catarina[1]; Azevedo, Inês[1,2,3]
[1]Pediatrics Department, Centro Hospitalar Universitário São João, Porto, Portugal; [2]Department of Pediatrics, Faculty of Medicine, Porto University, Porto, Portugal;; [3]EPIUnit – Institute of Public Health, University of Porto, Porto, Portugal

Background: Negative pressure pulmonary edema in the context of anesthesia is a rare condition, although pediatric patients are at higher risk. It is a form of non-cardiogenic pulmonary edema, which is generally self-limited and is treated only with respiratory optimization with supplemental oxygen and NIV.

Case Presentation Summary: A 12-year-old boy with a history of medulloblastoma, who had undergone surgery in 2013 and nowadays is in remission, with no previous history of pulmonary pathology, is admitted to the emergency room due to respiratory distress and hypoxemia during anesthetic induction for scheduled MRI. He was previously asymptomatic and negative for the

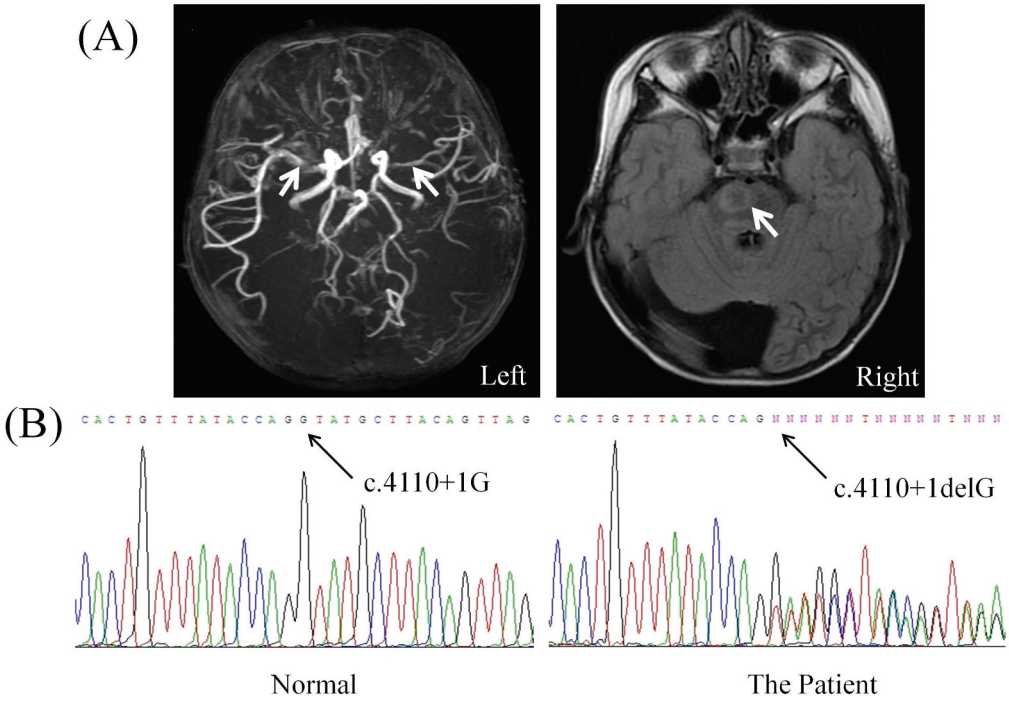


Figure 1. (a) Brain MRI images showed poor blood flow at proximal M1 segment of bilateral middle cerebral arteries (Left) and the unidentified bright objects in the right pons (Right). (b) The c.4110+1delG deletion variant in NF1 at the first base downstream of the 3' end of exon 30 in the patient.

SARS COV2 test. As he did not improve his condition with bronchodilators, he started NIV and was transferred to the pediatric intensive care unit. He then performed a chest X-ray that revealed a diffuse bilateral infiltrate and a pulmonary CT scan (Figure 1) that showed "cottony consolidations dispersed throughout all lung fields, with greater volume and with air bronchogram in the left lung, of indeterminate nature". As the child began showing clinical improvement with a progressive reduction of the need for oxygen, he was transferred to the pediatric ward where he carried out an analytical study and cultural examinations, with research for Koch's bacillus, without any significant result. After a multidisciplinary discussion of the case, it was determined that it had been a pulmonary reaction with edema to anesthetic induction. One week later, he was discharged without the need for supplementary O2 or respiratory symptoms. The child was then followed up later, having undergone a new control pulmonary CT scan approximately two months after the event, revealing significant improvement and remaining asymptomatic.

Learning Points Discussion: This case stands out for the severe respiratory clinic that quickly developed in a patient with cancer history whose radiological and clinical presentation suggested multiple differential diagnoses, including tumour recurrence with metastasis or pulmonary tuberculosis. NPPE (Negative pressure pulmonary edema) is a well-described but probably underrecognized clinical syndrome that occurs after intense inspiratory effort against an obstructed airway (such as upper airway infection, tumour, or laryngospasm). As very negative airway pressures are generated, there is an augmentation of transvascular fluid filtration and interstitial and alveolar edema development. NPPE usually has a favourable prognosis, but pediatricians should be aware of this complication.

ID: 138

Poster Presentation

Topics: HAEMATOLOGY / ONCOLOGY

Keywords: Caphosol, mucositis, prevention, randomized, saline

Randomized controlled and double-blinded study of Caphosol versus saline oral rinses in pediatric patients with cancer

Immonen, Egle[1,2]; Aine, Liisa[2,3]; Nikkilä, Atte[1]; Parikka, Mataleena[2,3]; Grönroos, Marika[4]; Vepsäläinen, Kaisa[5]; Palmu, Sauli[1,3]; Helminen, Mika[6,7]; Peltomäki, Timo[2,3,8]; Lohi, Olli[1,9]
[1]Tampere Center for Child Health Research, Faculty of Medicine and Health Technology, Tampere University, Tampere, Finland; [2]Department of Ear and Oral Diseases, Tampere University Hospital, Tampere, Finland; [3]Faculty of Medicine and Health Technology, Tampere University, Tampere, Finland; [4]Department of Pediatrics, Turku University Hospital, Turku, Finland; [5]Department of Paediatrics, Kuopio University Hospital, Kuopio, Finland; [6]Research, Development and Innovation Centre, Tampere University Hospital, Tampere, Finland; [7]Faculty of Social Sciences, Health Sciences, Tampere University, Tampere, Finland.; [8]Institute of Dentistry, University of Eastern Finland, Kuopio, Finland.; [9]Tampere University Hospital, Tays Cancer Centre, Tampere, Finland

Background: Oral mucositis (OM) is a significant side-effect of cancer treatment. The purpose of this study was to compare topically administered Caphosol to saline oral rinses in the prevention of mucositis in pediatric cancer patients undergoing chemotherapy.

Procedure: A controlled, double-blinded and randomized clinical study recruited patients between 2 to 17.99 years of age who were diagnosed with a malignancy and were receiving either high-dose methotrexate, anthracycline or cisplatin chemotherapy (NCT0280733). All patients received two seven-day cycles of mouth rinses, i.e. one cycle of Caphosol and one cycle of saline in a randomized order. Oral changes and symptoms were evaluated using the World Health Organisation (WHO) toxicity scale and the Children's International Mucositis Evaluation Scale (ChIMES) scale. The primary endpoint was the frequency and severity of OM and oral symptoms.

Results: A total of 56 patients were recruited to the study, of whom 45 were randomized, with a median age of 6.5 years (range 2.1 to 17.1 years). No cases of severe OM were observed. Grade ≥3 oral symptoms were present at least once in 6 (13%) patients during the Caphosol cycle and 13 (29%) patients during the saline cycle (p=0.12). The peak of symptom scores was evident at around day 4 to 7 after administration of the chemotherapy, with no marked differences between the rinse solutions (Figure). Multivariable regression analysis did not indicate a benefit of using Caphosol over the saline solution.

Conclusions: Caphosol rinse was not superior to saline in preventing OM or associated symptoms.

ID: 322
Poster Presentation
Topics: ADOLESCENT MEDICINE, PUBLIC HEALTH
Keywords: Health-related quality of life, Self-efficacy, sense of unity, adolescents.

Self-efficacy and sense of unity in Spanish adolescents as predictors of health-related quality of life: an application of moderation analysis.

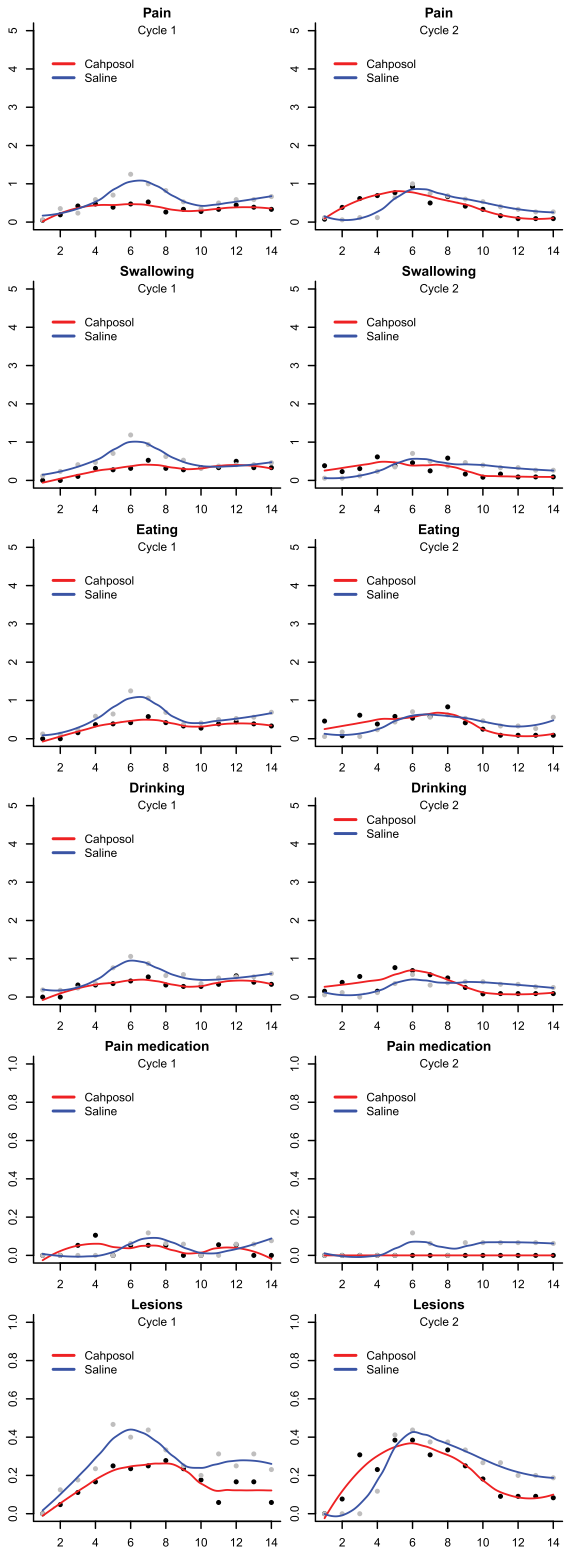
Salado, Vanesa[1]; Moreno-Maldonado, Concepción[1]; Gaspar, Tânia[2]; Rivera, Francisco[1]
[1]University de Sevilla, Spain; [2]University of Lusíada, Lisboa, Portugal

Background: The quality of life is understood as the subjective perception that people have about their physical, mental, and social health. Understanding factors that promote it during adolescence helps us to foster interventions to enhance health and wellbeing during this developmental stage as well as during the entire life cycle. The concept of self-efficacy is referred to beliefs that people have about their abilities to organize and carry out actions that affect their lives. On the other hand, sense of unity refers to the positive feeling of being part of a larger social structure. Both factors, self-efficacy and sense of unity, have been recently related to adolescents' health and well-being. This research aims to explore how they can contribute to the quality of life of Spanish adolescents.

Methods: Data has been collected in the 2018 edition of the Health Behaviour in School Aged Children (HBSC) study in Spain. The present study includes 16,797 adolescents aged between 13 and 18 years and with a balanced representation by sex –8,553 (50.9%) were girls, 8,244 (49.1%) were boys-. The instruments used were the health-related quality of life scale (Kidscreen -10), the social self-efficacy scale, and the sense of unity scale. The analyzes performed were descriptive statistics, moderation analysis, and linear regression model.

Results: There were significant differences in adolescents' quality of life associated to their self-efficacy and sense of unity. Therefore, adolescents with higher self-efficacy and a stronger sense of unity showed higher levels of health-related quality of life. In addition, both, self-efficacy and sense of unity showed to be significant predictors of adolescent–s quality of life. However, in the moderation analysis, adolescents– health-related quality of life showed not being influenced by the interaction between self-efficacy and a sense of unity (p = .082)..

Conclusions: This study suggests that social self-efficacy and a sense of unity will promote the health perception of Spanish adolescents. However, the effects of self-efficacy and a sense of unity on adolescent health appear to be independent. Interventions aimed at promoting adolescent health will improve their impact by considering social aspects such as adolescents' beliefs about their abilities and their sense of belonging to society.


Pain
Cycle 1
Cahposol
Saline
Pain
Cycle 2
Swallowing
Cycle 1
Swallowing
Cycle 2
Eating
Cycle 1
Eating
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Drinking
Cycle 1
Drinking
Cycle 2
Pain medication
Cycle 1
Pain medication
Cycle 2
Lesions
Cycle 1
Lesions
Cycle 2

ID: 239

Poster Presentation

Topics: DERMATOLOGY, ALLERGY, IMMUNOLOGY & RESPIRATORY, NEUROLOGY

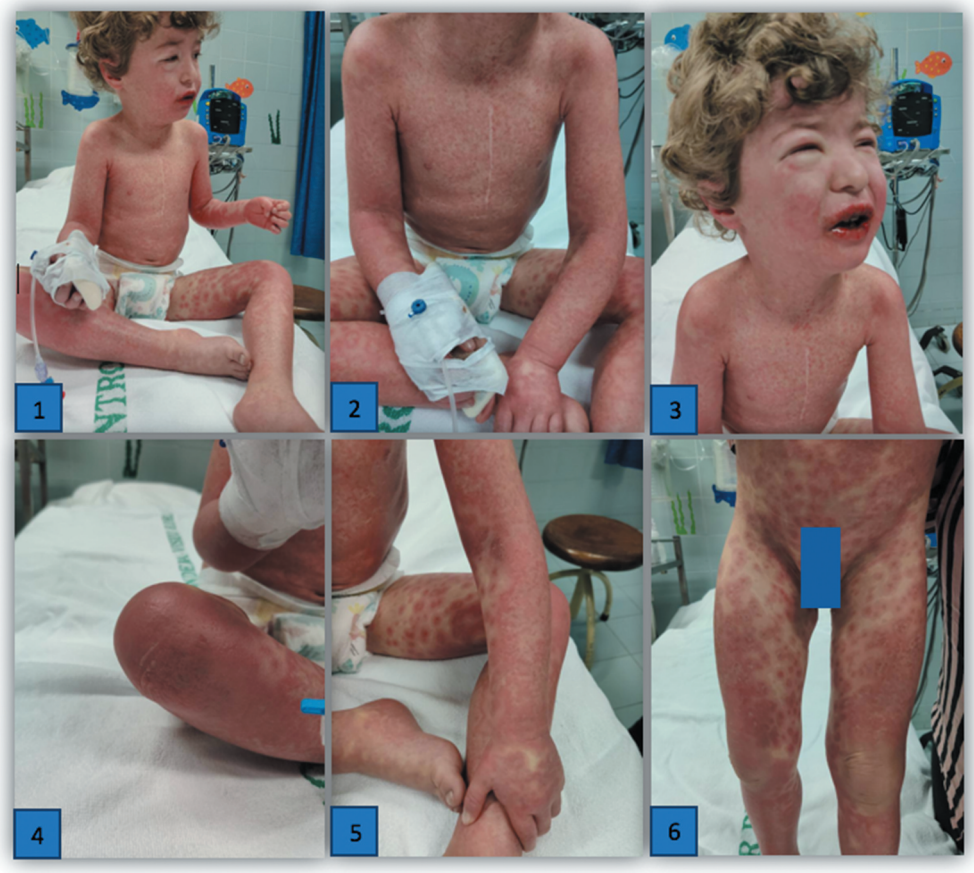
Keywords: Stevens–Johnson syndrome, antiepileptic drug, ethosuximide

Stevens-Johnson Syndrome triggered by ethosuximide...not so common after all

Cardoso, Sandra Soares[1]; Belinha, Flávia[2]; Rato, Margarida[3]; Pimenta, Joana[1]; Dias, Andrea[2]; Pereira, Cristina[4]; Ramos, Leonor[5]; Laranjo, Gabriela[1]; Salgado, Manuel[2]

[1]Pediatrics Department, Centro Hospitalar Tondela-Viseu, Portugal; [2]Pediatric Intensive Care Unit, Hospital Pediátrico, Centro Hospitalar e Universitário de Coimbra, Portugal; [3]Dermatology Department, Centro Hospitalar Tondela-Viseu, Portugal; [4]Child Development Center, Hospital Pediátrico, Centro Hospitalar e Universitário de Coimbra, Portugal; [5]Dermatology Department, Centro Hospitalar e Universitário de Coimbra, Portugal

Background: Stevens-Johnson Syndrome (SJS) is a rare but life-threatening mucocutaneous disease induced by drugs in about 60%-90% of cases. Children aged 11-15 years recorded the highest incidence. Antiepileptic drugs (AED) are known to cause SJS, but only a few ethosuximide SJS induced cases have been reported.



Case Presentation Summary: A 4-year-old boy was brought to a level 2 pediatric emergency service with a 2-day history of high fever associated with prostration and anorexia.From personal history to highlight: epilepsy and generalized myoclonic encephalopathy, ostium secundum atrial septal defect, surgically corrected without a residual shunt, global development delay, poor stature-weight progression, microcephaly and hypotonia. Followed in neurology consultations since age 2, he was medicated with sodium valproate, clonazepam and levetiracetam; he started ethosuximide 9 days before the onset of the symptoms due to epileptic seizures refractory to AED. On physical examination, he presented a macular rash (mostly at the face, palms and soles). Laboratory findings without changes, except C-reative protein 3,94 mg/dL. He was admitted for surveillance, maintaining a high fever and rash worsening associated with prostration. On D3 of hospitalization, cheilitis appeared, and the case was discussed with the dermatology and neuropediatrics teams. Due to the suspicion of toxicodermia associated with ethosuximide, he discontinued this therapy. On the fifth day of fever, he presented with coalescing maculopapular rash, very confluent and target and bullous lesions, swollen bleeding lips, bilateral eyelid edema and oliguria. He started intravenous immunoglobulin (2g/kg), and due to the worsening of the general condition and evolution to toxic epidermal necrolysis (Figure 1), he was transferred to a Pediatric Intensive Care Unit (level 3 hospital). He remained apyretic and hemodynamically stable. Daily topical application of fusidic acid and betamethasone to skin lesions and a 10- day course of methylprednisolone (10mg/kg) gradually improved the rash and crusted cheilitis lesions. The ocular pseudomembranes were removed every 2days. The regular antiepileptic therapy was suspended, only keeping clonazepam at the usual dose without worsening the seizures. He did an electroencephalogram with no record of paroxysmal activity—laboratory evaluations without significant changes and always with negative inflammatory parameters. Serologies didn't show active infections. He was discharged 34 days after the onset of illness, only medicated with clonazepam. Resumption of myoclonic absence crises approximately 2 weeks after discharge-the dose of clonazepam was adjusted to twice, and months later, he started a ketogenic diet with improvement in seizure control. A skin patch test confirmed allergy to ethosuximide, and the genetic study identified a variant of uncertain significance in the POLG gene in heterozygosity, probably pathogenic.

Learning Points Discussion: When drug-induced SJS is suspected, a skin patch test can be helpful in confirming allergy to ethosuximide. In our case, this drug was started 9 days before the onset of the illness (described period of 1 to 4 weeks). Identification of the causative drug is essential because its early withdrawal can improve the prognosis. In addition, it helps to prevent re-exposure in patients recovering from SJS. The rarity of SJS makes it difficult to establish an optimal treatment strategy due to the lack of well- designed clinical trials on outcomes.

ID: 209

Poster Presentation

Topics: ADOLESCENT MEDICINE

Keywords: Alcohol, tobacco, drug, adolescents, Georgia

Trends of alcohol, tobacco and drug abuse in adolescents: a repeated cross-sectional study in the country of Georgia

Pagava, Karaman[1]; Shengelia, Lela[2,3]; Phagava, Helen[1]; Chirakadze, Sophio[3]; Zedgenidze, Iulia[3]; Getia, Nana[3]

[1]Tbilisi State Medical University, Georgia; [2]University of Georgia; [3]Georgian National Center for Disease Control and Public Health

Objectives: Alcohol, tobacco and drug abuse still remain the most important health-related risky behavior problems in adolescents. We aimed to compare their frequency and changes over the period of 2005-2018 in adolescents in Georgia.

Design and Methods: Comparative Analysis of Repeated cross-sectional study, carried out in whole Georgia in 2005 and 2018. Both studies were done by self-administered questionnaires. The first study was performed in the frame of the Georgian-Swiss Scientific project (sponsored by Swiss National Scientific Foundation SCOPES 7GEPj065646), the second one in the frame of the international Health Behaviour in School-Aged Children (HBSC) project supported by the WHO Europe. There were compared data received from the adolescents - first sample (mean age 15.5±1.1) – 9490 (61.4% females, 39.6% males); second one (aged 15 years) – correspondingly 1345 (51.3% and 48.7%). Primary outcome measures: demographic characteristics, alcohol (different beverages), tobacco and drug (cannabis) consumption at least once in the life (ALOITL) and during the last 30 days (DLTD).

Results: Alcohol. I sample: 30.0% answered positively to being drunk over the lifetime (female 22.4%, male 41.9% male), among them 17.5% 1-2 times, and 4.9% - 3-9 times, 4.9% - more than 10 times. Mostly vine was consumed. II sample: mainly vine (female 11%, male 22%) and bear (female 9%, male 19%) were consumed. Having drunk ALOITL – 46% (female 44%, male 47%), DLTD – 21% (9%, 32%), being drunk DLTD – 21% (9%, 32%). Tobacco. I sample: 6.7% smoke irregularly (female 3.7%, male 11.2%) and 3.7% smoke regularly (female 0.8%, male 7.5%). Number of cigarettes per day was 14.4±11.8 (female 13.2±11.6, male 14.7±11.9). II sample: ALOITL – 17% (female 9%, male 23%), DLTD – 10% (4%, 16%). Drugs. I sample – cannabis use was reported in 6.8% (female 1.3%, male 14.7%). II sample - Cannabis ALOITL – 2.6% (female 0.7%, male 4.5%); DLTD – about 2%.

Conclusions: It was established that practically all types of risky behavior were more frequent in males; over the studied period (2013- 2018), there was seen a statistically significant ($p<0.05$) increase in risky behaviour in school-aged children in Georgia.

ID: 368
Poster Presentation
Topics: NEONATOLOGY
Keywords: micrognathia, gloss ptosis, and cleft palate

Pierre Robin Sequence: a structured clinical approach

Khurshid, Sundas; Kumar, Alok
University hospital Kerry, Ireland

Background: Pierre Robin syndrome is a triad of micrognathia, gloss ptosis, and cleft palate. It has multiple mechanism. Most cases are thought to result from hypoplasia of the mandible that occurs before the ninth week of development. It may present as isolated abnormality and associated with other syndromes. Complications include respiratory compromise, failure to thrive and feeding problems.

Case Study: A newborn, 37 weeks old boy was born by CS due to decreased foetal movements. The APGARS was 4 at 1st minute,6 at 5th minute and 8 at 10th minute. Baby transferred to NICU in a prone position with 40% O2 in head box. Anomaly antenatal scan was normal, and US scan at 37-week showed polyhydramnios. Mother, primigravida, 42-year-old, has schizoaffective disorder and was on olanzapine in 3rd trimester. Clinical examination revealed small chin, cleft palate, bilateral talipes and hypertonia in upper limbs, which resolved. The baby was shifted to the tertiary care centre for multidisciplinary care. Oral feeds were established via Haberman bottle and NG tube on elevated side-lying position. Ophthalmology review rules out stickler syndrome. Echo and microarray CGH were normal.

Discussion: Antenatal scan give limited information for cleft palate, but cleft lip can be visualized. Micrognathia can be seen on scan in the early 2nd trimester. Management of PRS includes looking for feeding difficulties and upper airway obstruction. A multidisciplinary approach including a neonatologist, respiratory team, plastic surgeons, SLT, plastic surgeons, genetic team, ophthalmology, and hearing assessments should be made. Parental education regarding NPA insertion and care is effective. The mortality associated with the Pierre Robin sequence is generally related to airway compromise and is higher when associated with prematurity. Mortality rates in term infants with Pierre Robin sequences range from 1.7 to 11.3 per cent. However, the reported mortality rate increases to 26 per cent when other anomalies are present

ID: 351

Poster Presentation

Topics: NEUROLOGY

Keywords: Optic disc drusen, papilledema, pseudopapilledema

Papilledema or pseudopapilledema? A diagnostic challenge

Sousa, Jessica[1]; Pimenta, Joana[1]; Monteiro, Madalena[2]; Palavra, Filipe[3,4]
[1]Serviço de Pediatria, Centro Hospitalar Tondela-Viseu, Viseu, Portugal; [2]Serviço de Oftalmologia, Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal; [3]Centro de Desenvolvimento da Criança – Neuropediatria, Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal; [4]Instituto de Investigação Clínica e Biomédica de Coimbra (iCBR), Faculdade de Medicina, Universidade de Coimbra, Coimbra, Portugal

Introduction: Optic disc drusen (ODD) consists of calcified hyaline deposits within the optic nerve head or on its surface. They are present in about 0,4% of children and 0,3-2% of the general population. ODD may be found incidentally in asymptomatic patients or during workup for headache and optic nerve head elevation.

Description: An 8-year-old-male was referred to the emergency department with a suspicion of bilateral optic disc edema and decreased visual acuity after an ophthalmology observation in another healthcare facility. The patient reported decreased visual acuity for about 2 months and occasional temporal headache. He denied any other neurologic or ophthalmologic complaints. On physical examination, he was alert, blood pressure was normal, and the neurological exam did not reveal any focal deficits. To exclude some causes of papilledema, a cranioencephalic (CE) computed tomography was performed and was normal. The child was referred to a centre with Pediatric Neurology for observation. A CE and orbit magnetic resonance (MR) was carried out and revealed a discrete widening of the optic nerve sheaths in the intra-orbital portion. On the ophthalmological examination, he presented vision acuity 10/10 in both eyes; right eye fundoscopy showed optic disc with blurred edges and left eye with a slight elevation of the nasal side of the optic disc, unaltered retinal vessels, and no spontaneous venous pulse was seen in both eyes. Optical coherence tomography (OCT) was suggestive of ODD.

Discussion: ODD in children is often bilateral and is an important cause of optic disc pseudoedema. Its diagnosis is challenging, as it may be difficult to distinguish from papilledema based on the fundoscopic appearance alone. Suspicion of a papilledema implies an exploration of secondary causes of increased intracranial pressure, such a brain mass or pseudotumor cerebri syndrome. A careful history, a neurological and ophthalmological examination are essential. However, they may not be enough to make the correct diagnosis. Ancillary testing, like ultrasonography and OCT are helpful. The prognosis of ODD is usually good, patients may develop visual field defects with age, but a loss of central visual acuity is rare. There is currently no treatment for ODD, but patients should be monitored.

ID: 345
Poster Presentation
Topics: PUBLIC HEALTH
Keywords: physical activity, children, sleep, recommendations, web aplication

Development of the multimedia app for children and adolescents to communicate and learn the 24-hour movement guidelines - Your move

Nalecz, Hanna; Dzielska, Anna
Department of Child and Adolescent Health, Institute of Mother and Child, Poland

Background: Bridging the research-policy and practice gap is one of the burning issues these days. Many studies focused on children and adolescents using modern mobile technologies to make professional actions attractive for them. The study aimed to adapt the 24 hour recommendations on movement behaviour to develop an algorithm for a web application for educating, tracking, controlling and optimizing individual daily movement behaviour for children and adolescents and test the prototype app in 5-17-year-olds.

Material and methods: In phase I - the query was conducted on the latest recommendations for physical activity (moderate-to-vigorous and vigorous), sedentary behaviour and sleep. And the app algorithm was developed. In phase II - the group of the 60 children and adolescents – testers were randomly recruited from 3 age classes: 5-8 (parent-kid pairs), 9-13, and 14-17-year-olds completed the test-questionnaire contained questions about physical activity, sleep, and sedentary behaviours, and work with the newly developed tool for 7 or 14 days. At phase III – the users will complete the retest questionnaire and app-evaluation form. As the study is ongoing, the final sample size and final results are still open.

Results: Based on a query, a basic app algorithm was developed, in which cut-off points for individual categories were determined. A “Your move” web application for children was coded with an educational part - familiarization with age-appropriate recommendations, a test part - a module to be filled in for children for 14 days, and then current messages that allowed daily behaviour control and comprehensive feedback - giving a summary after 7 and/or 14 days intervals. Especially in an educational aspect, children and parents were reported the need for such information and the usefulness of child-friendly and attractive tools for children and youths. The spontaneous changes in children’s behaviours were observed while using the Your move App and getting knowledge about recommendations, and verifying their activities with the requirements. The test-retest study is still ongoing.

Conclusions: The 24-hour movement behaviour app for children and adolescents is a good tool to communicate, learn, and adapt to physical activity, sedentary behaviour, and sleep behaviour. The educational aspect of this tool seems to be the most beneficial, both for kids and for parents.

ID: 373
Poster Presentation
Topics: GENERAL PEDIATRICS, PUBLIC HEALTH, COVID-19
Keywords: COVID-19, Surveillance, Screening

COVID-19 screening indications and characteristics for acute paediatric admissions in a single centre: A retrospective chart review

Burke, Eleanor; Joyce, Robert; Ward, Amy; Balfe, Joanne
Children’s Health Ireland at Tallaght, Dublin

Background: Whilst the Irish Health Service Executive (HSE) currently recommends COVID-19 screening for all adult hospital admissions, current guidelines state that the screening of asymptomatic paediatric admissions is not necessarily required. However, clinically determining who requires testing can be difficult and subject to inter-carer variability. We sought to audit our acute admissions and swab results to determine rates of testing, characteristics of those being tested, and rates of positivity in a busy Irish tertiary paediatric unit.

Methods: We reviewed the charts of 122 patients admitted acutely to our unit over the course of July 2021 to determine whether or not they had undergone COVID-19 screening using a nasopharyngeal PCR test and the clinical indication for testing. The clinical presentation of these admissions was analysed to try to determine positive predictive factors for COVID-19 screening and better streamline surveillance criteria.

Results: A total of 122 admissions were analysed, with 74 (60.7%) having had a COVID-19 PCR test performed at the point of admission. Of these, 1 patient was found to be COVID-19 positive, giving an overall positivity rate of 0.8% amongst admissions analysed and 1.4% for admissions screened. The patient who returned a positive result was febrile at presentation but did not have any respiratory symptoms. Respiratory symptoms were documented for 45 of the 122 admissions (36.9%), and 42 of these underwent COVID-19 screening (93.3%). All swabs were negative. A total of 59 out of 122 were febrile at presentation, 55 (93.2%) of whom underwent screening. As above, 1 case tested positive. Of the afebrile patients, 19 out of 64 underwent COVID-19 screening. COVID- 19 screening was performed in 12 patients who did not have a fever or respiratory symptoms at the time of presentation. In terms of non-respiratory presentations, screening was performed in 12 out of 14 (85.7%) presenting with gastritis/gastroenteritis, and 9 out of 12 (75%) presenting with a history and examination consistent with a UTI/pyelonephritis. Of 18 patients who were admitted with primarily psychiatric presentations, none had either a fever or respiratory symptoms at presentation, and none underwent COVID-19 screening.

Conclusion: Our results reflect the existing data that COVID-19 appears to be less pathogenic in paediatric populations than in adult ones. Our low positivity rate compared to a high swab rate has repercussions in terms of bed allocation and isolation status. There is variation in terms of clinical criteria being viewed as sufficient to justify screening. Further study is required to determine consensus guidelines for COVID-19 surveillance in acute paediatric hospital admissions.

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Poster Presentation
Topics: GENERAL PEDIATRICS
Keywords: autism spectrum disorder, M-CHAT, developmental disability

Screening autism spectrum disorder through m-chat – a retrospective study

Soares, Joana[1]; Figueirinha, Joana[2]; Soares, Diana[3]; Madureira, Cristina[3]; Pena Fernandes, Teresa[3]; Santos, Helena[3]; Maia, Catarina[3]
[1]Centro Hospitalar do Tâmega e Sousa, Portugal; [2]Centro Hospitalar do Médio Ave, Portugal; [3]Centro Hospitalar de Vila Nova de Gaia/Espinho, Portugal

Background: Diagnosing children with autism spectrum disorder (ASD) is still a medical challenge. Awareness of this condition, its risk factors, and its appropriate screening tools among general practitioners and paediatricians is essential to allow the timely referral to a specific consultation.

Methods: A retrospective observational analysis included children referred to a Developmental Paediatrics consultation between December 2015 and November 2019 with a Modified Checklist for Autism in Toddlers (M-CHAT) score of three and higher or score of two and higher in critical

items. The study reviewed the M-CHAT scores and known prenatal, perinatal and postnatal risk factors associated with ASD. ASD was diagnosed according to the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM- 5) criteria and the Autism Diagnostic Observation Schedule (ADOS), and Autism Diagnostic Interview-Revised (ADR) tests results.

Results: 43 children were included in this study, with ages between 39 and 107 months. 79% (N=34) were male, and ASD was diagnosed in 53% (N=23). Within this group, the majority (65%, N=15) scored eight or higher and 87% (N=20) scored at least two critical items. All children with ASD had at least one risk factor for the disorder, being male gender (83%, N=19) the most prevalent. The mean M-CHAT score in the ASD group was 9.61 (SD 4.887) and in the non-ASD group was 7.45 (SD 4.407). There was no statistically significant difference in M-CHAT scores between children with and without ASD; however, all of them had neurodevelopmental impairment.

Conclusion: Although there was no significant difference between M-CHAT scores of those with ASD and other children, all children had a developmental disability and needed medical or pedagogical intervention. Therefore, M-CHAT is a useful test to identify red flags in neurodevelopmental behaviour in need of intervention. Future studies with larger samples are required to identify which of the M-CHAT items are more specific to ASD.

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Poster Presentation

Topics: GENERAL PEDIATRICS, INFECTIOUS DISEASES, GASTROENTEROLOGY

Keywords: Tuberculosis, Hepatotoxicity, Anti-TB drugs

Pulmonary tuberculosis in children - When treatment does not go as expected

Soares, Joana; Ferreira, Manuel; Soares, Joana M; Vieira, Lucília; Rodrigues, Joana; Ferraz, Rita
Centro Hospitalar do Tâmega e Sousa, Portugal

Introduction: Tuberculosis (TB) is a public health problem worldwide. In 2015, the World Health Organization reported 1 million cases of pediatric TB and 169,000 deaths. Clinical manifestations are variable and non-specific, rendering the diagnosis in the pediatric age is difficult. Pulmonary tuberculosis is the most frequent form of presentation in children. First-line treatment in pediatric patients is comparable with the adult. It consists of short-course multidrug regimens under directly observed therapy with Isoniazid, Rifampicin, Pyrazinamide, and Ethambutol. The treatment of TB is associated with adverse drug reactions (arthralgias, allergic reactions, hepatotoxicity, neurological and gastrointestinal alterations). In the pediatric demographic, the incidence of adverse drug reactions is smaller. Hepatotoxicity secondary to isoniazid, rifampicin, and pyrazinamide is the most frequent, with a frequency ranging from 3% and 10%. Patients can have a range of different presentations, from asymptomatic to fulminant disease with acute liver failure.

Case description: 13 years old, female, previous history of SARS-CoV-2 infection in November 2020. She was diagnosed with pulmonary tuberculosis in April 2021 and started treatment with Isoniazid, Rifampicin, Pyrazinamide and Ethambutol. On the tenth day of treatment, she was observed in the pediatric emergency department due to persistent nausea and vomiting since the previous day. She had no fever, gastrointestinal or urinary symptoms. Physical examination was unremarkable. Laboratory tests revealed elevation of transaminases (TGO 685 UI/L, TGP 275 UI/L) and alteration of the coagulation study (INR: 2.03; TP 22.2 s, APTT 50.1 s). Viral serologies (hepatitis A, B, C, D, E; HIV1/2; CMV; EBV) were negative. Due to suspicion of anti-TB-induced hepatotoxicity, treatment was suspended. Serial analytical control was carried out with progressive improvement after anti-TB drugs discontinuation. A progressive introduction of anti-TB drugs

(Isoniazid, Rifampicin, Ethambutol), one drug at a time, was tolerated. However, there was an analytical worsening about three weeks after reintroduction.

Conclusion: With this clinical case, the authors mean to emphasize the risk of hepatotoxicity secondary to treatment with anti-TB drugs. In most cases, this kind of hepatotoxicity reverts after discontinuation of treatment. There are no guidelines for this situation. However, the American Thoracic Society and British Thoracic Society recommend progressive reintroduction of drugs. Although rare, a relapse of hepatotoxicity can occur. Therefore, the reintroduction of anti-TB drugs should be considered individually. Standardized guidelines would be important in the management of these patients.

ID: 157

Poster Presentation

Topics: INFECTIOUS DISEASES, ALLERGY, IMMUNOLOGY & RESPIRATORY, EMERGENCY PEDIATRICS

Keywords: dyspnea, asthma, hiv, pneumocystis

Cough and Dyspnea in 2021: a Case of Asthma, COVID-19, or...?

Branco Caetano, Francisco[1]; Labrusco, Miguel[1]; Rios, Joana[1]; Costa Lima, Sofia[1]; Prata, Filipa[2]; Oom, Paulo[1]

[1]Pediatrics Department, Hospital Beatriz Ângelo, Loures, Portugal; [2]Pediatric Infectious Diseases Unit, Centro Hospitalar Universitário Lisboa Norte, Portugal

Background: COVID-19 has changed the perspective through which medical staff look at dyspnea and hypoxemia cases. Epidemiological links are frequently missing, and clinical and imagological findings are often unspecific, overlapping substantially with other respiratory infections.

Case summary: We report the case of an 11-year-old girl with a known history of asthma who had recently moved from Guinea-Bissau with her mother. Although the mother reported being Ag HBs positive, no serologic studies had ever been performed on the child. The patient was admitted to the Emergency Room after 4 days of cough and the feeling of thoracic oppression, without fever. No contact with suspected or confirmed individuals infected with SARS-CoV-2 or other respiratory viruses was reported. She presented with peripheral oxygen saturation of 90%, costal retractions and a prolonged expiratory phase. After an unsuccessful course of bronchodilators and prednisolone, she was admitted to the Pediatric Intermediate Care Unit because of a sustained need for oxygen therapy. Polymerase chain reaction analysis for SARS CoV-2 came back negative. A chest radiograph displayed a bilateral reticular infiltrate, and therapy with azithromycin was started. Due to a deterioration of the dyspnea, a chest tomography was eventually performed, revealing an exuberant and bilateral ground glass-like densification suggestive of alveolar injury. Echocardiogram and e electrocardiogram were both normal. After a positive serologic result for HIV, the patient was transferred to a Level III hospital, and Pneumocystis jirovecii was identified in bronchoalveolar lavage. T cell count was 12/mm3. Highly active antiretroviral therapy and cotrimoxazole were started, prompting clinical and analytical recovery.

Discussion: Pneumocystis jirovecii can cause fatal pneumonia in immunocompromised children. Even though an asthma exacerbation and atypical bacterial or viral infections, namely COVID-19, present as more usual causes of dyspnea, a low suspicion index is warranted in children coming from HIV-endemic countries, particularly those who are unresponsive to conventional bronchodilator and antibiotic therapy.

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