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PEDIATRICS | CONFERENCE ABSTRACTS

11th Excellence in Pediatrics Conference – 2019 Book of Abstracts

ADOLESCENT MEDICINE

ID: 248/ADOLESCENT MEDICINE: 1

Oral Presentation

Healthcare Disparities among LGBT Teenagers—Perspective of Healthcare Providers

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Introduction: Despite the lack of research regarding health requirements of Lesbian, Gay, Bisexual, and Transgender (LGBT) teenagers, there is evidence of disparities in this group compared to their heterosexual and cisgender counterparts, which may lead to poorer health outcomes.

Purpose: To highlight factors that potentially contribute to health-care disparities among LGBT teenagers perceived by physicians in Viseu—Portugal.

Methods: Descriptive transversal study, using a questionnaire designed for physicians of primary care and hospital units, approved by an Ethics Committee.

Results: 11 units were enrolled in the study. Seventy-seven physicians answered our questionnaire (mean age: 38,7 years), all were cisgender, and 75 (97.4%) were heterosexual. Regarding sexual orientation, 59 physicians (78.7%) stated same-sex sexual behaviours are natural, 44 (57.1%) affirmed it is an inborn characteristic, 29 (37.7%) a voluntary choice or a result of social (29, 37.7%), family (22, 28.6%) or media influence (19, 24.7%); 33 (43.4%) said being transgender is a natural expression of sexuality. Regarding healthcare, 75 doctors (97.4%) said LGBT patients deserve the same healthcare quality as the general population; 22 doctors (28.6%) said LGBT rights are guaranteed in their country and they receive adequate care in their unit (69, 89.6%) with friendly environment (53, 68.8%). Discriminatory behaviours are perceived by 39 physicians (51.3%): 35 (45.5%) from their colleagues and 13 (16.9%) from themselves. Thirty-three physicians (43.4%) alleged sexual orientation and sexual identity are undetermined until 16 years of age, therefore should not be discussed until then (11, 14.5%). Seventy-one physicians (92.2%) perceived more bullying towards LGBT teenagers, 29 (37.7%) considered them at higher risk of sexually transmitted infections, and 19 (25.0%) consider them more promiscuous. Thirty-six doctors (47.4%) recognized the importance of this theme, and 67 (87.0%) agreed the current medical training is insufficient. Regarding heteronormative conducts, 36 doctors (46.8%) assumed their patients are heterosexual, 19 (52.8%) realized they were LGBT after revelation, 11 (30.6%) after questioning, and 10 (27.8%) just assumed it. Fifty-eight doctors (76.3%) stated LGBT teenagers lie about this theme, and 15 (75.0%) perceived their discomfort when addressing this, mainly due to fear of parents' reaction (34, 58.6%).

Conclusion: The discussion of sexuality on appointments is essential; however, there are still many barriers perceived by health-care providers regarding this theme. This highlights the importance of medical training and the role of the physician among LGBT teenagers as a privileged assistant for the acceptance of their own sexual orientation and gender identity.

ID: 249/ADOLESCENT MEDICINE: 2

Oral Presentation

Nonsuicidal Self-injury In Adolescence: A Cross-sectional Study

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Introduction: Nonsuicidal self-injury (NSSI) is more common in adolescents than previously thought. These behaviours are always signs of a pathological adolescent development, and, though they may vary in severity, they bring upon a sense of uneasiness that should not be overlooked by clinicians. The high prevalence and strong association with suicide attempt makes NSSI a natural target for intervention and prevention of dire consequences in this age group.

Purpose: The aim of this study was to characterize NSSI patterns, prevalence, and associated risk factors in a sample of adolescents, allowing for a better screening and follow-up of this population.

Material and Methods: A cross-sectional study was conducted by applying a questionnaire based on "Lifestyle and coping questionnaire" validated in Portuguese language and overall wellbeing of adolescents (WHO-5 Wellbeing Index). The study assessed health and lifestyle factors, life events, problems, and attitudes towards NSSI among young people. It also characterized episodes and means of self-harm. Adolescents aged 12 through 17 that attended an outpatient clinic or presented at the pediatric emergency department of a secondary-care Portuguese hospital, were asked to participate. A descriptive and bivariate analysis was performed using SPSS v.25, with a significant p-value <0.05.

Results: Preliminary data of the ongoing study included 79 eligible responses with a mean age of 15 years. Out of the 29,1% that reported having had NSSI, the majority were girls (69,6%). Our sample also mentioned cutting, hitting, scratching, and pinching themselves deliberately as the most used means of NSSI. Moreover, we showed that little over 60% of adolescents with NSSI had performed it more than once. Most are motivated by a wish to escape from a terrible state of mind (82,6%), and some say they have a wish to die (52,2%). In regard to depression, significantly higher rates were found in NSSI adolescents (35% vs. 14,5% p = 0.032). Similarly, there was a statistically significant association between NSSI and alcohol or drugs use, befriend less easily, have a history of bullying, seek online information on how to hurt themselves, among others.

Conclusion: NSSI is a widespread yet often overshadowed problem in adolescents that constitutes a serious public health issue. These findings enlighten the need for careful assessment of the youth in order to identify those who may be suffering from emotional difficulties and prevent self-harm and its consequences.

ID: 233/ADOLESCENT MEDICINE: 4
Oral Presentation
Energy Drinks Use And Relationship With Health Complaints Among Serbian Adolescents

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Introduction: Energy drinks are non-alcoholic beverages that typically contain high levels of caffeine and sugar in combination with other ingredients known to have stimulant properties. The scientific literature suggests a variety of health consequences related to consumption of energy drinks such as caffeine intoxication and withdrawal, sleep disruption and insomnia, disruptive, hyperactive and risky behaviour, and also long-term health consequences associated with excessive sugar intake such as overweight and obesity. Despite the growing evidence on the harmful physiological and psychological effects of energy drinks, data on prevalence and patterns of use of energy drinks is scarce, especially among European adolescents.

Aim: The aim was to explore the prevalence of energy drinks use among Serbian adolescents and concurrence of health complaints.

Method: Data were obtained from the Health Behaviour in School-aged Children Survey (HBSC) performed in spring 2018. According to the 2017/18 HBSC international study protocol study population included 11, 13, and 15-year-old, i.e., students of the fifth and seventh grade in the primary schools and students of the first grade of secondary schools in Serbia. The self-completion questionnaire was administered in 101 schools and completed by 4028 students (49.4% boys, 50.6% girls).

Results: Energy drinks are consumed daily by 4.5% of Serbian adolescents, 9.1% consume energy drinks once a week, 6.1% drink 2–4 days a week, and 60.7% never consume them. Boys significantly more often use energy drinks than girls as well as students of vocational secondary schools compared to gymnasium students and elementary school students. Students who consume energy drinks daily significantly more often report having health complaints almost every day than those who never consume them: 40.6% vs. 15.2% report feeling nervous, 24.3% vs. 6.8% have sleeping difficulty, 23.2% vs. 7.5% feel irritable and 14.8% vs.4.6% have a headache.

Conclusion: Increasing the marketing of energy drinks on one side and limited regulation on the other side have resulted in an environment where energy drinks could be a significant public health issue. There is an increasing need for further preventive interventions targeting adolescents aiming at the prevention of energy drinks use.

ID: 251/ADOLESCENT MEDICINE: 5

Oral Presentation

Immigration Status and Bullying Victimization: Associations across National and School Contexts

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Introduction: Several theories propose immigrant youth to experience more bullying victimization than their non-immigrant peers, which has been substantiated by empirical research. However, it remains an open question as to whether differences in bullying victimization between immigrant and non-immigrant youth depend on the country of residence and the school context. In addition, the interplay between developmental and immigration processes has not been addressed satisfactorily.

Purpose: In this study, we investigate the association between immigration status (distinguishing between immigrants of the first and second generation) and bullying victimization in a large, nationally representative, cross-national, school-based sample of young people. In doing so, we investigate whether the lower prevalence of bullying victimization at older ages occurs for first- and second-generation immigrants as for non-immigrants. Moreover, we study whether the national and school context of immigrant youth influences the association between immigration status and bullying victimization.

Materials and methods: Data were used from the 2013–2014 Health Behavior in School-Aged Children study among nationally representative samples of young people in 26 countries/regions.

Results: Multilevel logistic regression analyses showed that first- and second-generation immigrant youth were more likely to report bullying victimization than their non-immigrant peers. However, gaps in bullying victimization were more pronounced for first- than second-generation immigrants. For both immigrants and non-immigrants, bullying victimization was less prevalent at older ages. Strikingly, all immigration effects were similar across countries, while only differences in bullying victimization between second-generation immigrant and non-immigrant youth varied across schools. This variation was not related to a school-level classmate or teacher support.

Conclusion: Findings point to the vulnerability of immigrant youth for bullying victimization throughout Europe.

ID: 196/ADOLESCENT MEDICINE: 6

Oral Presentation

Learning from Success: The Implementation and Evaluation of a National Strategy to Reduce Alcohol Problem Drinking among Israeli Youth: A Nine-Year Follow-Up 2010–2019.

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Introduction: Renewed conceptual frameworks focusing on well-being, resiliency, and positive youth development, have caused a major shift in the focus of policy and intervention strategies aimed at reducing adolescent risk behaviours. The World Health Organization—Health Behaviour in School-Aged Children (WHO-HBSC) cross-national survey has monitored these changes throughout the past three decades in over 45 countries in Europe and North America.

Discussion: While Israel has usually shown relatively low and stable rates of adolescent smoking, drinking, and drug use, the rates of problem drinking increased dramatically during the 15-year period of 1994 till 2009. The rate of binge drinking in the past 30 days for 11–15 years-old teens tripled from 6.2% in 1994 to over 20.6% in 2009. Findings were cleverly disseminated to the press, the Israeli Parliament (Knesset), and targeted cabinet members. Consequently, the government-funded the development and implementation of a comprehensive, long-term national program to reduce problem alcohol drinking among young people. The program was funded and implemented in three consecutive stages—2010-2012, 2012–2014 and 2014–2016 and was coordinated by the Israel Anti-Drug Authority. Activities included: implementing a comprehensive national strategy, building and maintaining partnerships with all relevant national agencies and local authorities, developing consistent and coherent messages, implementing effective national media campaigns, developing, passing and enforcing a host of new legislation, implementing a wide variety of age-specific school-based programs, implementing comprehensive community-based intervention strategies at the local settings, and more.

Results: The impact of the national program on national rates of youth binge drinking was monitored by the HBSC survey throughout the program period and till the recent survey of 2019. Findings from the HBSC study show that as a result of this national intensive program, binge drinking is Israeli youth dropped from 20.6% in 2009 to 12.4% in 2011, to 10.7% in 2014, and finally in 2019 to 6.2%. All in all, binge drinking dropped to about one-third (!) of its magnitude in 2009, prior to the implementation of the national program.

Conclusion: The paper presents findings of the evaluation study that followed the program and discusses the unique characteristic of the program that led to this remarkable success in reducing rates of on a national level.

ID: 192/ADOLESCENT MEDICINE: 7

Oral Presentation

Sexual Behaviour in Adolescence, Far Beyond the Individual Choice: The Role Of Family, Peer and School Connection.

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Introduction: Dealing with young people's sexual health, in particular, increasing their commitment to timely and safe sex, has become an important issue for developed countries. While the majority of adolescents with an early sexual debut may be sexually competent, many are not. Although Sexual Intercourse (SI) is not in itself a risky behaviour, it can be a threat to wellbeing if it occurs at an early age and/or is associated with the use of inconsistent protective and contraceptive methods.

Purpose: The study aims to investigate first SI occurrences and the use of contraceptives in Italian adolescents discussing the role that family, peers, and school support can have.

Materials and Methods: Data were collected from the Italian 2014 Health Behaviour in School-aged Children (HBSC) study, a collaborative cross-national survey involving more than 45 countries. According to the international protocol, a representative sample of 47,912 students aged 11, 13, and 15 years were recruited from school classes in Italy. For the study aims, analyses included 15 -years-old students' responses, with a final sample of 13,611 youths. Data on age of first intercourse and the use of contraceptives in the very last SI, in relation to multidimensional scales for family, peers, and school support, were analysed through a multi-level adjusted logistic regression analysis, controlling for socio- and geographical-demographics.

Results: 24% of 15-yo have had SI, for the 37% of them it happened, prematurely, before the 15th year-of-age, being more frequent in males. Among those who had SI, 72% declared condom use (more frequently in males), 39% withdrawal (more frequently in females), and 12% pill with no gender differences. The 70% of youth reported high family and high peer support; high school support was only about 50%. Family (OR = 0.75; 95%IC 0.6; 0.9 for males and OR = 0.66; 95%IC 0.6; 0.7 for females) and school support (OR = 0.72; 95%IC 0.6; 0.8 for males and OR = 0.63; 95% IC0.5;0.7 for females) were positively associated with a less occurrence of SI while peer support showed an inverse association (OR = 1.64; 95%IC 1.3; 2.0 for males and OR = 1.18 non-significant for females). Students of both genders with high school support had a lower risk of reporting premature SI. Higher likelihoods of condom use for school support were significant only in the females (OR = 1.45; 95%IC 1.01; 2.1).

Conclusions: Sexual behaviours are only partly an individual issue, social relationships showed to have a role in adolescents' sexual choices, with notable differences between family or school support and peer support. Accordingly, Public Health initiatives dealing with sex education in communities should take into account a different approach, also involving community pediatricians because of their important connections with adolescents' families.

ID: 293/ADOLESCENT MEDICINE: 8

Oral Presentation

The Early bird Catches The Worm: Associations Between Adolescents' Sleep Chronotype, Sleep Duration and School Experience

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Introduction: Adolescents' subjective experience at school precedes health and wellbeing outcomes, including self-harm, depressive symptoms, and anxiety, and is associated with academic performance. As such, it is necessary to identify factors associated with school experience to inform intervention efforts. Sleep represents a plausible but relatively understudied factor in this context. This represents a salient knowledge gap given that adolescents are more likely to prefer to fall asleep and wake up at a later point in the day than at any other life stage.

Purpose: This study aimed to investigate the relationship between sleep (duration and chronotype) and indicators of the school experience.

Materials and Methods: Data were obtained from the 2014 Health Behaviour in School-aged Children (HBSC) Study in Scotland. This school-based cross-sectional sample of 10,839 Scottish adolescents (aged 11–15) collected self-reported bedtime and wake up time on school days and non-school days. These data were used to calculate typical school-day sleep duration and chronotype (mid-sleep point on non-school days). Indicators of subjective experience at school include: liking school, perceived schoolwork pressure, and load, perceived academic performance, perceived teacher and classmate support, and truancy. Design-adjusted logistic regression analyses were conducted to assess associations between binary school experience outcomes and sleep

duration/chronotype. Analyses were stratified by school grade and adjusted for potential confounds at school- and pupil-levels, including indicators of socioeconomic status, school roll, pupil: teacher ratio, travel time to school, and urban/rurality.

Results: Observed results broadly suggest that a greater amount of sleep on school nights and an earlier preferred sleeping rhythm (chronotype) are both independently associated with a more positive subjective experience at school. The observed effects are fairly substantial, particularly for adolescents aged 13 and 15 years. For instance, in these age groups, for each hour later, the individual's mid-sleep point (chronotype), there is a 20-30% reduction in the odds of liking school (similar effect sizes observed for sleep duration). The independence of the observed effects suggests that a later chronotype is negatively associated with subjective school experience even if one manages to get "enough" hours of sleep on a school night, and vice versa.

Conclusion: This study emphasises a need for young people, their families, and schools to be alert to the distribution, role, and impact of adolescents' sleep timing and duration on their experience at school. Special effort should be dedicated to maximising sleep duration and quality amongst night-owls. The potential malleability of chronotype warrants further investigation.

ID: 230/ADOLESCENT MEDICINE: 9

Oral Presentation

The Impact of Chronic Single-site and Multi-site pain on Adolescent Self-rated Health among Adolescents in 42 Countries and Regions

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Background: Among adolescents, chronic multi-site pain is more prevalent than localized specific pain. Gender differences in chronic pain prevalence are emerging, with girls reporting higher levels than boys. Previous studies suggest that different effects of multi-site and localized chronic pain on adolescent well-being might exist; however, larger studies providing cross-national comparisons are scarce.

Purpose: To assess the association with self-rated health for multi-site and localized single-site chronic pain among representative samples of adolescents across 42 countries/regions (Europe, Canada, and Israel).Materials and Methods: Data (n = 214,283) from the 2013/2014 Health Behaviour in School-aged Children (HBSC) study were used, including nationally representative samples of 11-, 13- and 15-year-olds from general schools in 42 participating countries. The associations with poor self-rated health (vs. excellent) for adolescents reporting weekly single-site (headache or stomach-ache, or backache) and multi-site (pain at least at two sites) pain during the previous 6 months were studied using multiple logistic regressions.

Results: In total, 20.6% of adolescents reported to have chronic multi-site, but 23.6% indicated any of the studied single-site pain. Different gender patterns for single-site and multi-site pain were found, but the most substantial gender difference was found for multi-site pain that was considerably more prevalent among girls across all countries. Overall, both adolescents with chronic multi-site pain (OR = 15.2) and single-site pain (OR = 4.2) were more likely to report poor self-rated health, but the association was stronger for multi-site pain. Significant interaction with sex and chronic pain for self-rated health was observed. Overall, age-adjusted results showed no significant sex difference for the association with poor self-rated health for single-site pain, but among adolescents with multi-site pain the odds of poor health increased by a factor of 11.02 (95%CI 9.67–12.56) for boys and by a factor of 15.42 (95%CI 13.52–17.58) for girls. However, substantial cross-country variation was found.

Conclusion: Adolescents with chronic pain are more likely to report poor health; however, significant heterogeneity in the associations was observed. Multi-site pain may have a more negative effect on adolescent self-rated health than single-site pain. Significant sex and country variation for the association between chronic pain and self-rated health suggests that not only individual

but also important cultural factors in pain experience and differences in chronic pain care for adolescents may exist in different countries.

ID: 217/ADOLESCENT MEDICINE: 10

Oral Presentation

The Moderation Role of Family Support on the Relationship Between Electronic Media Use and Peer Support

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Introduction: During adolescence, adolescents start a process of separation-individuation from their parents in order to establish their place in society. As part of this process, peer support is important for the purpose of establishing self-identity, emotional well-being, and success in school. Recent studies show the increasing use of electronic media communication (EMC) by adolescents, which helps them to maintain contact and position themselves in the peer group. However, parents continue to be significant and influential during this period. Yet while the importance of peer and parent support has been established, their interplay with EMC has been understudied.

Purpose: The goals of the present study were to examine the relationships between EMC, peer support, and family support and to understand to what extent low levels of parental support may encourage higher levels of EMC use as a means of gaining more peer support. As part of this, we also sought to explore what characterizes adolescents who have high peer support (in terms of gender, age, socioeconomic status, and origin).

Materials and Methods: This study was based on data from the 2014 Israeli HBSC survey. A total of 12,922 students aged from 12 to 18 years olds took part. The questionnaire included items relating to age, gender, origin (Jewish Immigrants; Jewish Non-immigrants; Arabs Non-immigrants), family affluence (FAS); parental monitoring, parental communication, ease of communication with parents; family support, EMC (texting, instant messaging), and peer support. We used hierarchical mixed-effects regression analysis for variables predicting peer support.

Results: Girls, older adolescents, non-immigrants, and adolescents with high FAS reported higher levels of peer support. Moreover, peer support had a significant positive correlation to EMC ($r = .229$, $p \leq .001$) and a significant positive correlation with family support ($r = .289$, $p \leq .001$). Analysis showed that family support moderated the association between peer support and EMC, such that for adolescents with lower levels of parental support, the relationship between EMC and peer support was stronger.

Conclusion: Adolescents use EMC to communicate with their friends, and it possible that this kind of communication helps them to gain more social support. Moreover, good communication and support from their family can be seen to be related to both peer support and EMC use. However, low family support can push adolescents to use EMC more in order to gain peer support.

ID: 189/ADOLESCENT MEDICINE: 11

Oral Presentation

The Positive Effect of Organised Leisure Time Activities Involvement for the Wellbeing of the Young Adolescents.

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Introduction and purpose: WHO invited an effective use of data to drive health interventions in adolescents, also focussing on the relationship between youth engagement and health. Recent researches showed that involvement in Organised-Leisure-Time-Activities (OLTA) could positively affect wellbeing. This study describes the relationships between OLTA participation and adolescents' life-satisfaction, physical activity, and risky behaviours, taking into consideration known contextual factors.

Methods: Data were collected from the Italian 2014 Health Behaviour in School-aged Children (HBSC) study, a collaborative cross-national survey involving more than 45 countries. According to the international protocol, a representative sample of 47,912 students aged 11, 13, and 15 years were recruited from school classes in Italy. For the study aims, analyses included only 13 and 15 -years-old students' responses, with a final sample of 27,749 youths. Life satisfaction, physical activity, and smoking, alcohol drinking, and drunkenness were analysed in relation to students' participation in four different clusters of OLTA: involved in Cultural-Activities, in Sport-Activities, in both cultural and sport activities, not involved in any. A multivariate model of analyses was used to explore the associations between OLTA involvement and outcome variables controlling for socio-demographics and geographic contexts.

Results: The overall rate of involvement was about 72%, with higher rates in 13-years-olds. Males showed higher levels of involvement. Being involved in both type of OLTA, sportive and cultural ones, showed overlapping results in 13- and in 15-years-olds with a reduced association for smoking (OR = 0.72 95%IC 0.6;0.9, 13yo and OR = 0.67 95%IC 0.6;0.8, 15yo), a slight higher level of alcohol consumption (OR = 1.26, 95%IC 1.8;1.5, 13yo and OR = 1.19 95%IC 1.1;1.3, 15yo); a strong positive association for physical activity (OR = 1.88 95%IC1.6, 13yo and OR = 3.14 95%IC 2.6;3.8, 15yo) and life satisfaction (OR = 1.60 95%IC 1.4;1.8, 13yo and OR = 1.45 95%IC 1.3;1.7, 15yo). Similar effect emerged for being involved in only sport-activities but not for cultural ones. Gender, socio-economic levels, and geographic contexts were related to all the variables and with the measured outcomes.

Conclusion: Being involved in OLTA showed a clear positive association with all the outcomes but alcohol consumption, although gender, socio-economic, and geographic contexts revealed to have an influence. Modern pediatricians, as public health professionals with a central role in facilitating children and parents towards healthier lifestyles, should take into account the importance of helping youth to be involved in out of school-structured activities, aware of the risk that participation may also lead to a slightly higher alcohol consumption.

ID: 235/ADOLESCENT MEDICINE: 12

Oral Presentation

Time Trends in Bullying Victimization across Countries in Europe and North America and the Evolving Role of Cyber-victimization

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Objectives: This explores recent cross-national trends over time (2002 to 2014) in the occurrence of victimization by bullying; then, it documents the overlap between cyber-victimization and traditional bullying in 2014 among adolescents in 37 countries.

Methods: Data from four cycles (2002, 2006, 2010, 2014) of the cross-national Health Behaviour in School-Aged Children (HBSC) study were included (N = 764,518). Trends in traditional victimization were evaluated using logistic regression models in 37 countries. The prevalence of cyber-victimization and the overlap between cyber-victimization and traditional victimization were estimated.

Results: Linear decreases in bullying victimization were observed in 21 countries among boys, and in 12 countries among girls. The prevalence of cyber-victimization was systematically lower than traditional victimization. Overall across all countries, 45.8% of those who reported cyber-victimization also reported traditional victimization (46.5% for boys and 45.3% for girls), but wide country variations were observed.

Conclusions: These indicate the need for a more holistic perspective to intervention and prevention that considers all expressions of bullying, traditional or online. Public health programmes and policies could focus on addressing bullying more broadly, rather than focusing on behaviours that happen in a particular context.

ID: 219/ADOLESCENT MEDICINE: 13

Oral Presentation

Comparative Aspects Of Vitamin D Deficiency In Children With Celiacia And Chronic Enterocolitis

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Actuality: Disorders of the small intestine are one of the urgent problems of pediatrics. Particularly difficult is the rehabilitation treatment of children with chronic intestinal diseases with a tendency to relapse and the formation of severe metabolic disorders, where vitamin D deficiency plays an important role.

Aim of the study was studying the comparative aspects of vitamin D deficiency in children with celiac disease and chronic enterocolitis.

Material and research methods: We examined 60 children with celiac disease at the age of 3–16 years, 60 children with chronic enterocolitis at the age of 2–6 years. The control group consisted of 31 healthy children. The diagnosis of diseases was verified on the basis of an anamnesis, a comprehensive clinical laboratory, immunogenetic and instrumental examination, including a general blood test, coprology, and an ultrasound examination of the digestive organs. For histological diagnosis of celiac disease during an endoscopic examination of the upper gastrointestinal tract, biopsy samples were taken from the mucous membrane of the anterior duodenal ulcer.

Results: Vitamin D deficiency was detected in 48 (80%) patients with celiac disease, with every fourth patient (15/25%) having extremely low numbers (below 10 ng/ml). An insufficient vitamin D content was detected in 12 patients with celiac disease (20%). In chronic enterocolitis, vitamin D deficiency was detected 1.4 times less often (34/56.7%) than in C. An insufficient vitamin D content was detected in 26 (43.3%) patients, which is 2.2 times more often, compared with patients with celiac disease. For every 10 patients with celiac disease, protein-free edema was detected as a result of exudative enteropathy syndrome. Vitamin D deficiency was found to be 1.4 times less likely in patients with chemotherapy (34/56.7%) than for celiac disease. Deficiency of vitamin D was found in 26 (43.3%) patients, which is 2.2 times more likely than with patients with celiac disease.

Conclusion: Vitamin D deficiency with celiac disease was detected in 80% of children, with chronic cholesterol—in 57% of children, in other cases—its insufficiency. In the group of children with vitamin D deficiency in all sections of the mucous membrane of the small intestine, dystrophic,

atrophic changes of both integumentary and glandular epithelium, as well as inflammatory changes in the form of lymphoid infiltration of both their own connective tissue stroma and submucosal connective tissue are detected.

ID: 237/ADOLESCENT MEDICINE: 14
Oral Presentation
Health Food Blogger: Friend or Foe

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Background: Over one-third of UK adolescents reports spending over 5 h a day on social media, and 95% claim to be influenced by the people that they follow online. The interactive food and beverage industry is increasingly targeting children and adolescents and utilise online platforms and bloggers to promote their products. The Scientific Advisory Committee on Nutrition (SACN) and the World Health Organisation (WHO) have recently updated nutritional guidelines to reduce sugar intake, which has resulted in an increased popularity of online health-food bloggers utilising "refined sugar-free" recipes and products.

Objective: This review looked to analyse recipes from popular online bloggers to validate the veracity of their "sugar-free" claims and assess their adherence to the recently amended nutritional guidelines.

Materials and Methods: Four bloggers were randomly selected from Amazon.co.uk top 10 healthy eating booklist, and their online blogs were consulted for a selection of recipes which were then nutritionally analysed in relation to their sugar and fat content. These values were then compared to national and international guidelines as well as a Mars® bar.

Results: Per serving, 40% of the recipes analysed contained over half of the recommended daily sugar intake, advised by SACN and WHO. Sixty percent of recipes contained more fat than a Mars® bar. None of the bloggers analysed used evidence-based approaches for the advice on their blogs.

Conclusion: Health food bloggers offer an invaluable platform to disseminate dietary advice to children, adolescents, and the wider public. It is imperative that the recipes that are being promoted align with current nutritional guidelines.

PEDIATRICS GP-1

ID: 186/PEDIATRICS GP-1: 1
Oral Presentation
Adverse Drug Reactions in Pediatric Patients: Are We Doing the Right Thing?

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Introduction: The risk of developing adverse drug reactions (ADRs) is high for pediatric patients. This is, among other reasons, due to the inevitable use of off-label and unlicensed prescriptions. Moreover, there is limited knowledge about ADRs in children, and adequate recognition might,

therefore, be problematic. The lack of dedicated studies and the voluntary nature of pharmacovigilance systems to get insight into the characteristics of ADRs is a disadvantage regarding this problem.

Purpose: The main goal of this study is to improve drug safety in pediatrics. The first two projects to achieve this goal were recently performed. The first project was designed to identify whether ADRs in pediatric patients are adequately recognized by the medical team in our university hospital. The second project was to demonstrate if education and creating awareness could increase ADR reporting.

Materials and Methods: Two researchers retrospectively analyzed independently the number of possible ADRs occurring in patients admitted to the pediatric medium care ward of the Radboudumc Amalia Children's hospital during 1 month. The same procedure was performed 1 year later, after education, how to recognize and report adverse drug reactions had taken place.

Results: For the first project, medical records of 315 patients were analyzed. Possible ADRs occurred in 81 patients, and in total 132 possible ADRs were found. Of these, only 45% were explicitly noted as such by the treating physician. None of the ADRs was reported to the national pharmacovigilance center. For the second project, we started with educating the pediatricians and residents. During the period of 1 month, we repeatedly educated the pediatricians to increase awareness of ADRs and the importance of reporting them. The medical records of 228 patients hospitalized during that month were analyzed retrospectively. In the medical records of 64 patients, we found evidence for possible ADRs. This concerned 101 possible ADRs, of which 60 (60%) were noted as such by the physicians.

Conclusion: Before training, recognition of ADRs by the medical team was suboptimal, and underreporting was extensive. In the second phase of the project, we demonstrated that education and creating awareness is helpful to increase ADR reporting by medical staff. There is an unmet need to gather information on ADRs in the pediatric population in a systematic way. In order to do this, the current voluntary pharmacovigilance system can be adapted to increase our knowledge of the prescribed drugs in pediatrics and thereby improve the safety of medical care.

ID: 260/PEDIATRICS GP-1: 2

Oral Presentation

Frequent Users of a Portuguese Pediatric Emergency Department: Our Last 5-Year Reality

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Introduction: Pediatric population has some particular features associated with frequent use of Pediatric Emergency Departments (PED). Overuse of these services is the result of, among others, excess of non-urgent episodes and a high percentage of frequent users (FU), and it is associated with increased mortality and morbidity of PED.

Aim: To characterize the population of FU of a Portuguese public PED

Methods: We conducted a retrospective analysis of FU visits' clinical records. FU were defined as having 4 or more visits to PED in 365 days, between 01/01/2014 and 31/12/2018. For those patients and visits, we analysed demographics (gender, age, municipality of residence) and clinical

(previous number of visits, origin, and date of admission, triage level, final diagnosis, discharge destination and length of stay) variables.

Results: Among the 391,132 analysed visits, 107,222 (27.4%) belong to 13,880 FU, who visited PED between 4 and 47 times a year. We observed a slight male predominance (52.2%), and the majority of them (50.4%) were up to 2 years old in the first visit. Between the studied period, there was a decrease in the number of visits related to FU (mean −5.47%/year), and those visits tended to occur mostly during Autumn (28.0%) and Winter (26.2%). According to the Canadian Paediatric Triage and Acuity Scale, 47% of FU visits were classified as Level 3, and 41.2% as Level 4. 90.1% of those visits are related to patients admitted from exterior. The most common diagnosis was Common Cold (7.6%), Acute Otitis Media (6.6%), and Gastroenteritis (6.3%). 3.6% of visits resulted in admission to the pediatric inpatient department.

Conclusion: PED visits are an increasing concern in terms of public health policies. The characterization of PED' FU represents a clarification of the population to which it is possible to apply measures in order to reduce its overuse.

ID: 142/PEDIATRICS GP-1: 3

Oral Presentation

Laryngeal Inflammation Secondary to Gastroesophageal Reflux in Laryngomalacia Patients

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Objectives: This study aims to quantify the incidence of arytenoid mucosa inflammation secondary to gastroesophageal reflux disease (GERD) seen on histological examination in children undergoing airway surgery (supraglottoplasty) for laryngomalacia. Correlations between the severity of disease, Laryngomalacia anatomy, and esophageal biopsies were also investigated.

Methods: In this retrospective chart review, patients that underwent direct laryngoscopy, bronchoscopy, supraglottoplasty, and laryngeal mucosa biopsy for laryngomalacia between 2016 to March 2018 were examined. Patients diagnosed with laryngomalacia that had undergone surgical supraglottoplasty with the removal of laryngeal mucosa were included. Patients over the age of 18, patients without a diagnosis of laryngomalacia, patients with known autoimmune disorders, and patients with laryngomalacia that have not undergone supraglottoplasty were excluded. Electronic medical records from 3 pediatric otolaryngologists were assessed. Biopsied laryngeal tissue was examined for objective measurements of inflammation, and markers for laryngopharyngeal reflux (LPR)/GERD were recorded.

Results: 39 patients with LM underwent supraglottoplasty with arytenoid a mucosa biopsy. Of these patients, 51% (20/39) had inflammatory changes seen on pathology consistent with LPR/GERD associated edema. Of these particular patients, 20%(4/20) had esophageal biopsies indicating co-existent esophagitis, and 15% (3/20) of patients had both arytenoid mucosal changes and esophagitis.

Conclusion: This study quantifies the correlation between LPR/GERD, laryngomalacia, and associated supraglottic inflammation. Over half of the patients who required airway surgery for their laryngomalacia had airway swelling of their laryngeal tissues secondary to GERD/LPR

ID: 147/PEDIATRICS GP-1: 4

Oral Presentation

Relationships among Gender, Foot Size, Static and Dynamic Balance in Preschool Children

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Introduction: There are both modifiable and non-modifiable factors which may affect the development of balance in early childhood. However, no adequate study has investigated to determine this factors.

Purpose: This study aims to analyse the relationships among gender, foot size, balance in preschool children.

Materials and Methods: Preschool children between 3 and 5 years old within the normal borders of body mass index were included. Foot sizes were recorded by using anthropometric measurements for the distance between the posterior aspect of the heel and the distal aspect of the longest toe. Single-leg standing on the dominant leg was used for static balance, and Timed-up, and Go (TUG) test was used for dynamic balance. All tests were conducted as a barefoot condition.

Results: 108 children (Boy: 54, Girl: 54) aged 4.08 ± 0.78 years were assessed. The mean value of foot sizes were 27.22 ± 1.79. Pearson Product-Moment Correlation test was used for examining the correlation. There were no significant differences between the foot sizes of boys and girls ($p > 0.05$). Balance is also not significantly different according to gender. A significant positive correlation was found between foot size and single-leg standing duration ($r = 0.305$, $p = 0.001$), while a significant negative correlation was found between foot size and TUG test ($r = -0.378$, $p < 0.001$).

Conclusion: This paper indicated that foot size is an important factor for both static and dynamic balance of preschool children.

ID: 242/PEDIATRICS GP-1: 5

Oral Presentation

How Far are We in Evaluating Development of the Vocal Folds in Children

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Introduction: The development of voices in children has anatomical as well as physiological/hormonal challenges. With phonetograms (voice profiles measuring the voicing area in decibels and hertz), the acoustical change can be measured and compared with pediatric development, including androgen and estrogen status.

Discussion: High-Speed Digital Imaging (HSDI) shows the surfaces of the vocal folds (combined with electroglottograms (EGG)) of the tone generated. Still, there is a constant need for endoscopic imaging tools that can directly capture the three-dimensional surface motion of the vocal folds in real-time. Optical Coherence Tomography (OCT) is a viable candidate for this. OCT is an interesting new tool, which has already given interesting results in how the layers of the vocal ligament changes with age. Ultra-High Resolution (UHR) OCT, until now usable in the oral mucosa (Figure 1, Figure text: Picture published in MAVEBA Proceedings 2019, in press). The next step for us is to use the UHR OCT for an online diagnosis of the phonating larynx in adolescence.

ID: 282/PEDIATRICS GP-1: 6

Oral Presentation

BIODREPA Study—Early Biomarkers of Renal Involvement in a Pediatric Population with Sickle Cell Disease

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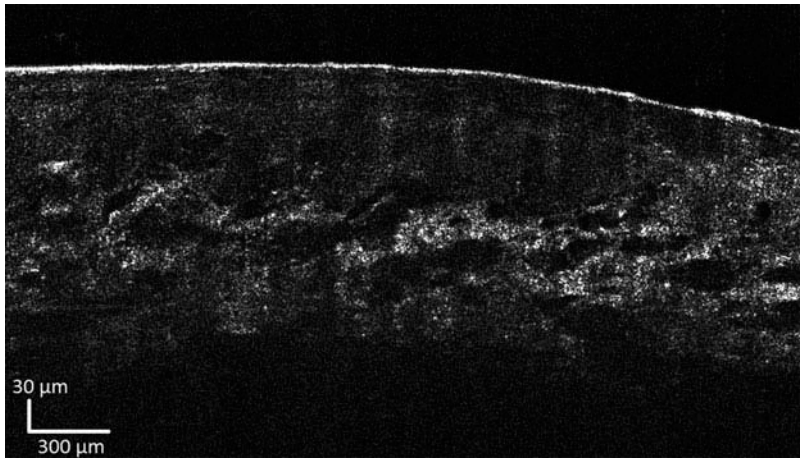
Figure 1.



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Introduction: Sickle cell disease (SCD) is one of the most common haemoglobinopathies in Europe. Due to improvements in comprehensive care, the survival of paediatric patients with SCD into adulthood currently exceeds 93%. Nevertheless, lifespan is still shortened by 20 to 30 years. Sickle cell nephropathy (SCN), which refers to the spectrum of SCD-related abnormalities in the kidney, contributes substantially to premature deaths accounting for 16–18% of mortality. The traditional biomarkers of renal involvement, glomerular filtration ratio (GFR), and the urine albumin/creatinine ratio (uACR), become altered only in advanced SCN. Non-invasive biomarkers of tubular injury may improve the ability to detect the early onset of SCN.

Purpose: The main goal of the BIODREPA study is to evaluate the usefulness of alpha-glutathione S-transferase (a-GST), neutrophil gelatinase-associated lipocalin (NGAL) and kidney injury molecule-1 (KIM-1) biomarkers in the early diagnosis of renal involvement in children with SCD.

Materials and Methods: Multicentric case-control prospective study with a cross-sectional and longitudinal component. The primary renal outcome was a composite of decreased glomerular filtration rate (GFR), defined as a GFR <90 mL/min/1,73m2; abnormal urinary albumin-to-creatinine ratio (uACR), defined as an uACR >20 mg/g; or the presence of abnormal findings in kidney ultrasound.

Results: We report the preliminary results of the first 60 SCD patients included in the cross-sectional component of the BIODREPA study. The median age was 9 years (range: 2–18; P25-P75: 5–13), and 67% were female. Median GFR was 129,7 mL/min/1,73m2 (P25-P75: 112,6–146,9), and the prevalence of decreased GFR was 12%. The prevalence of abnormal uACR was 8%, and that of abnormal findings in kidney ultrasound was 62%. The primary renal composite outcome was achieved by 54% of the study population. The median (P25-P75) urinary levels of a-GST, NGAL, and KIM-1 (normalized to urinary creatine) in ng/dL, were: 10.6 (6.1–18.8), NGAL 1.9 (0.8–3.4), and KIM 2.0 (0.8–3.5). In the logistic regression model adjusted for age and sex, the a-GST was the best predictor of the primary renal composite outcome (p = 0.04).

Conclusion: In the preliminary results of the BIODREPA study, the prevalence of renal involvement among children with SCD was 54%. The α-GST may be the most promising of the biomarkers studied for the early detection of SCN.

ID: 263/PEDIATRICS GP-1: 7
Oral Presentation
Factors related to β-cell residual function at Diabetes Type 1 diagnosis

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Introduction: Type 1 diabetes mellitus (T1DM) is characterized by the destruction of insulin-producing pancreatic β-cells. Greater residual β-cell function, measured by C-peptide level, is associated with enhanced glycemic control, and consequently, with a reduction of acute and chronic complications' risk. Therefore, therapeutic interventions to preserve β-cell function may be clinically important. Individuals with higher C-peptide levels are most likely to respond to therapies that prevent pancreatic damage. Clinical factors associated with C-peptide level at T1DM diagnosis are still not fully established.

Purpose: This study aimed to identify factors associated with C-peptide levels at T1DM diagnosis.

Materials and Methods: A retrospective review of the clinical processes of patients with newly diagnosed T1DM admitted to a Portuguese reference centre between August 2010 and July 2019 was conducted.

Results: The current study included 109 subjects, 64 boys and 45 girls. The mean age at T1DM diabetes diagnosis was 8.6 (0.76; 17.33) years, and 29.4% of patients had already puberty development. The mean body mass index z-score was 0,09. Subjects presented a median fasting C-peptide level of 0.46 (<0.01; 1.99) ng/ml and a median hemoglobin A1C (HbA1C) of 10,85% (7.2; 17%). Diabetic ketoacidosis was found in 22% of the patients. A positive correlation was observed between fasting C-peptide level and age at diagnosis ($p < 0.001$), and body mass index z-score ($p = 0.041$). Higher C-peptide levels were noted in overweight/obese children ($p = 0,008$) and in pubertal subjects ($p < 0.001$). C-peptide levels were correlated with serum bicarbonate ($p = 0,005$), but not with venous pH, HbA1C, or previous symptoms duration. No statistical differences were recorded in fasting C-peptide levels when considering gender, diabetes autoantibodies, T1DM family history, and seasonality.

Conclusion: Older patients, pubertal subjects, and overweight/obese children presented higher C-peptide levels. Their better residual β-cell function makes them better candidates to therapies that preserve islet pancreatic cells, currently under investigation. T1DM diagnosis is more difficult in younger patients, and their residual β-cell function is lower. An improved screening and diagnostic approach are important in this group in order to improve the chances for therapeutic intervention.

ID: 270/PEDIATRICS GP-1: 8
Oral Presentation
Vitamin D and Serotonin in Relationship to Blood Pressure Regulation in Obese Children

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Background: Obesity and hypertension represent serious health issues affecting the pediatric population with increasing prevalence. Vitamin D inhibits RAAS and NF-κB signaling pathways that lead to increased production of pro-inflammatory factors and oxidative stress resulting in

damaging podocytes and contributing to increased blood pressure (BP). Hypovitaminosis D is associated with higher rates of hypertension and metabolic syndrome. Serotonin by stimulating NOS causes a long-term decrease in BP. The biological mechanism by which vitamin D specifically regulates serotonin synthesis was recently described.

Patients and methods: There were 91 children with obesity and 36 children with a normal weight between 5 and 18 years of age enrolled in this study. We evaluated anthropometric data, BMI, systolic and diastolic BP, serum levels of vitamin D and serotonin in all children. We used IBM SPSS 23.0 statistical software.

Results and conclusion: We found a high prevalence of both vitamin D deficiency and elevated/high blood pressure, with higher prevalence in obese children in comparison to lean children (55,8% to 24,2%). Differences in chosen anthropometric parametres, systolic, and diastolic blood pressure are shown in the table. We confirmed the relationship between hypovitaminosis D and hypertension. We found a 9.21-fold higher risk of hypertension onset in obese boys than in obese girls. We found lower serum serotonin concentrations in obese children in comparison to lean children and a positive correlation of serotonin with diastolic BP. We also confirmed significant correlations of monitored cardiometabolic parameters with blood pressure. A better understanding of the effects of vitamin D and serotonin on the pathomechanism of onset of obesity and hypertension requires more detailed research.

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ID: 277/PEDIATRICS GP-1: 9
Oral Presentation
An Analysis on the Efficacy of Anti-rotavirus Vaccine on a Level II Hospital

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Introduction: Rotavirus infection is an important cause of acute gastroenteritis worldwide and has significant morbidity and mortality rates, especially amongst children under 5 years of age. The introduction of anti-rotavirus vaccines has been associated with a decrease in these numbers and a better outcome. In Portugal, the anti-rotavirus vaccine is not part of the National Immunization Program, so its uptake is dependent on parent’s alertness and economic status. It is commercialized since 2006, and data from 2016 show a vaccination coverage of around 45%.

Purpose: To review patients with acute rotavirus gastroenteritis admitted to our hospital in the last 5 years, and to compare their outcome, mainly the need for hospital stay and/or IV fluid, to their vaccinal status.

Materials and Methods: An observational, longitudinal, retrospective, 5 years’ study was conducted by reviewing data of children from 6 weeks to 17 years old with acute rotavirus gastroenteritis in a level II Hospital. We assessed the need for a hospital stay and/or IV fluid for hydration and the vaccine status, establishing a relation between the first two and the last, using SPSS 24.

Results: This study enrolled 281 pediatric patients (121 female, 160 male); the [6mo-24mo[group was the one in which the rotavirus infection was more prevalent; the younger age groups—[2mo-

	Obese children	Controls	p
Number (boys/girls)	91 (39/52)	36 (18/18)	NS
Age (years)	13,3 ± 2,7 (7–17)	11,0 ± 3,6 (5–18)	**0,001**
Height (cm)	164,6 ± 11,4 (139–185)	150,9 ± 21,3 (112–177)	**0,001**
Weight (kg)	92,2 ± 20,2 (53,9–156,3)	46,4 ± 16,1 (18,5–70,6)	**0,0001**
BMI (kg/m^2)	33,9 ± 6,4 (25,1–65,1)	19,8 ± 3,3 (13,6–24,3)	**0,0001**
BMI SD	5,6 ± 2,5 (1,6–17)	0,7 ± 1,5 (−1,14–4,36)	**0,0001**
Systolic BP (mmHg)	124 ± 11,2 (101–150)	112,2 ± 10,6 (88–139)	**0,0001**
Diastolic BP (mmHg)	71,9 ± 8,3 (56–104)	70,1 ± 8,3 (47–85)	NS

Data are shown as X̄±SD (min.-max.) or as number

6mo[and [6mo-24mo[- represent 55% of total subjects. In older age groups, rotavirus infection was less prevalent. Those vaccinated had less need for hospitalization (p < 0.01; OR 2,73x (IC 95% 0,184–0,731)) and IV fluid; there is a higher need for IV fluid when not vaccinated, in all age groups (p < 0.01; OR 3,6x (IC 95% 0,145–0,536)).

Conclusion: Out of the patients admitted in a level II Hospital with acute rotavirus gastroenteritis, those with rotavirus vaccine immunization had a better outcome, with statistic significance.

ID: 275/PEDIATRICS GP-1: 10

Oral Presentation

Food Allergy, Borderline Between FPIES and IgE-Mediated Food Allergy

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Introduction: Food allergy is an increasing health-care concern with cow's milk protein allergy (CMPA), mostly prevalent in infants (2-3%). Overall, neonatal cow's milk allergies are non-IgE mediated and present with gastrointestinal symptoms. Food protein-induced enterocolitis syndrome (FPIES) is an uncommon and potentially severe form of non-IgE mediated food allergy that usually displays profuse vomiting, diarrhoea, lethargy, dehydration, and shock. Symptoms and signs associated with IgE-mediated CMPA may involve different organ systems, mostly the skin and the gastrointestinal and respiratory tracts.

Case Description: A full-term male newborn, with adequate somatometry for gestational age, remained in hospital after birth due to maternal sepsis. At 16 days of age, his mother needed triple antimicrobial therapy, and breastfeeding was withheld. One hour after cow's milk-based infant formula intake, he started vomiting after each feed. Vital signs were normal. On physical examination, he was hypotonic, prostrated, and moaning. Blood analysis revealed mild anemia, leukocytosis with eosinophilia, and severe metabolic acidosis. Feeding was suspended, intravenous fluids initiated, and needed bicarbonate correction. A few hours later, he presented aqueous diarrhoea without blood or mucus. Sepsis was ruled out (serial negative infection markers), and inborn errors of metabolism excluded. Blood culture, viral, and bacteriological stool tests were negative. CMPA was suspected, and an amino-acid-based formula was initiated with clinical and laboratorial improvement. Total IgE and cow's milk specific IgE (casein, alpha-lactalbumin, and beta-lactoglobulin) were high. The mother underwent dietary elimination of cow's milk proteins, and breastfeeding was resumed. At the age of 3 months, he performed skin prick tests (SPT) with positive results. Family history was negative for allergic disease.

Conclusion: Diagnosing a less common form of cow's milk allergy in a newborn infant requires a high degree of suspicion. This clinical case report raises questions about the most likely diagnosis. The initial gastrointestinal symptoms accompanied by lethargy and severe metabolic acidosis in the absence of respiratory and skin manifestations are typical of PFIES with symptoms

starting 1–3 h after ingestion. On the other hand, positive skin tests and raised specific IgE antibodies to cow's milk protein strongly suggests and IgE-mediated allergy. However, there are some reported cases of PFIES with later evidence of IgE antibodies to CMPA, which reinforces the diagnostic doubt.

ID: 116/PEDIATRICS GP-1: 11

Oral Presentation

Nutritional Management of Reflux among 0–12 months old infants in the Philippines

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Introduction: Gastroesophageal regurgitation (GER) is one of the most common digestive problems in the first months of life. There are several approaches in managing GER during infancy, including providing a special formula with added functional ingredients.

Purpose: To describe the clinical course of Filipino infants (0–12 months) with infantile GER, after changing to a special infant formula designed to relive GER.

Methods: Information on frequency and volume of regurgitation, progression of the disease, and other complaints were collected via questionnaires from mothers of 0–12 months old infants with GER. A total of 129 eligible infants joined the study, 89 of them were younger than 6 months, and 40 were 6–12 months old. The data were gathered at the baseline, and 1 month after the special infant formula containing carob bean gum (CBG), galacto-oligosaccharides (GOS), and partially hydrolyzed protein was given.

Results: At baseline, the most frequently reported amount of regurgitation was half of the total feed (33% in 0–6 months and 43% in 6–12 months) followed by a mouthful (29% and 30%, respectively). For a few infants, mothers reported that all of the feed was regurgitated (15% and 5%). The reported baseline frequency of regurgitation was 1–3 times a day (51% and 53%), 4–6 times a day (37% and 35%), and 7–9 times a day (12% and 13%). After 1 day of product consumption, 18% of younger infants and 20% of older infants had no more regurgitation. No study participants reported to have 7–9 regurgitation per day.

After 14 days of product use, on the average, 70% of study participants had no more symptoms (64% of infants 0–6 months and 78% of 6–12 months old). Among infants who still had GER episodes, 64% reported decreased frequency, and 59% reported reduced volume of regurgitation. Seven percent of the infants did not show any improvement, and for 1%, the amount of regurgitated feed was increased. There were decreases in the percentage of parent-reported sleep disturbance, especially among older infants (37% and 63%) and decrease in incessant crying (51% and 65%). Additionally, an increase in bowel movement (54% and 60%) and feeding time were reported (30% and 33%).

Conclusion: Special formula designed for management of regurgitation with CBG, GOS, and partially hydrolyzed protein effectively improved regurgitation symptoms and patient's quality of life within 14 days. Further information on underlying conditions among infants who still had symptoms after 14 days may be warranted.

ID: 264/PEDIATRICS GP-1: 12

Oral Presentation

Pediatric Intestinal Failure, The Experience of a Third Line Hospital

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Introduction: Intestinal failure (IF) is defined as a critical reduction in the functioning intestinal mass below the amount necessary for adequate absorption of fluids, electrolytes, or nutrients required for normal growth and survival if no long-term parenteral nutrition is provided. IF is an uncommon and complex condition, and the impact on the individuals and family is enormous.

Purpose: This study analyzed patients followed at a specialized Nutritional Unit in a third line pediatric hospital, between 2015 and 2019.Material and Methods: Retrospective and descriptive study of 29 patients with IF. Demographic and clinical data, complications, treatments, and evolution are presented.

Results: This study included 29 children with IF. The main cause was short bowel syndrome (SBS, n = 22), the majority of them secondary to midgut volvulus, intestinal atresia, gastroschisis, and necrotizing enterocolitis; intestinal pseudoobstruction (n = 3), Mitchell Riley syndrome (n = 2), Hirschprung's disease (n = 1) and inflammatory bowel disease (n = 1). The median of surgery was 3/children, 10 having performed serial transverse enteroplasty (STEP), and longitudinal intestinal lengthening and tailoring (LILT). In SBS children, the median of residual short bowel length was 24 cm, three of them removed the colon and 18 the ileocaecal valve. The median of central venous catheter (CVC) sepsis was 2,3/1000 days of CVC, the majority due to Staphylococci coagulase-negative and Gram-negative bacteria. Other complications were: CVC fractures (n = 14), CVC-related venous thrombosis (n = 3), food allergy (n = 3) and pancreatitis (n = 2). IF associated liver disease (IFALD) occurred in 48% of cases. One patient underwent intestinal transplantation (IT). Three deaths occurred because of CVC sepsis, IFALD, and one after IT.

Conclusion: We report a particular group of patients, dependent on parenteral nutrition, who have an increased risk of complications, parenteral nutrition-associated, and others. Moreover, they may need surgical rescue procedures to improve functioning gut and promote adaptation. IT should be offered as a last line strategy. IF centers of excellence and medical-surgical cooperation play a vital role.

ID: 257/PEDIATRICS GP-1: 13

Oral Presentation

Symptomatic Meckel's diverticulum in children: a 12-year survey

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Introduction: Meckel's diverticulum (MD), the most common congenital abnormality of the gastrointestinal tract, is usually asymptomatic but may be associated with various clinical manifestations, including severe complications that require the pediatrician awareness.

Purpose: The present study aimed to assess the clinical and diagnostic features of symptomatic MD in children, the relationship between age and presence of ectopic mucosa versus clinical presentation, as well as the accuracy of 99mTc-pertechnetate scintigraphy.

Materials and Methods: All symptomatic MD in paediatric patients treated between 2007 and 2018 at a tertiary center were retrospectively reviewed. Demographics, clinical picture, imaging, surgical outcome, and histopathology were recorded.

Results: There were 47 patients with a median age of 4.31 years and 94% of males. The clinical presentation was: digestive bleeding (n = 25, 53.2%); intestinal obstruction (n = 12, 25.5%; 7 of

them with intestinal intussusception); and diverticulitis (n = 10, 21.3%). The patients with digestive hemorrhage were younger than those with intestinal obstruction or diverticulitis (2.76 vs. 6.02, p = 0.156). All patients with digestive hemorrhage underwent scintigraphy that revealed ectopic gastric mucosa in 23 (sensitivity, 92%; PPV, 100%). In the conclusive anatomopathological exams (n = 41), ectopic mucosa (gastric and/or pancreatic) was detected in 34 (82.9%); the cases presenting diverticulitis or intestinal obstruction had ectopic mucosa in 60% and 41.6%, respectively. There was no mortality; with a median follow-up of 7.2 years, there were no major complications.

Conclusion: Symptomatic MD predominates in males, the digestive bleeding occurring at younger ages. Scintigraphy demonstrated high accuracy in the detection of the ectopic gastric mucosa. Overall symptomatic MD's usually have ectopic mucosa, a feature that may have a pathogenic relationship. The surgical outcome is excellent; thus, severe complications of MD should be kept in mind.

ID: 206/PEDIATRICS GP-1: 14

Oral Presentation

An Easy Clinical Sign to Help with the Screening and Diagnosis of Childhood Obesity. Preliminary Results from the PESCA Study.

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Introduction: Prevention and early diagnosis should be capital tools to cut down childhood obesity epidemy worldwide and probably the best way to avoid the rising rates of related cardiovascular diseases: Hypertension, Type II Diabetes, Metabolic Syndrome, and others. Involving schools, family, and health providers in promoting Physical Activity and healthy Nutrition in children seems to be a main priority in public health. PESCA program, which design was presented in 10th EiP, has begun to work in these two directions in Spain.

Purpose: To present results from a very wide data set from the first-year PESCA study, describing the Orange Skin Sign (OSS) as a clinical exploration tool which may be useful for an easy obesity screening in children and adolescents.

Materials and Methods: Our first-year sample includes 618 children and adolescents (aged 3 to 17, 301 girls) from three schools in Madrid and Toledo. Data were collected from October 17, 2018 to January 29, 2019. There are no inclusion or exclusion criteria, and every student parent had to agree upon participation. Subjects underwent a physical examination, anthropometric measurements, and assessment of body composition and physical fitness: stadiometer, bioimpedance (BIA), and dynamometer. They also carried out a questionnaire on the child's and family's cardiovascular health data. We define "Orange Skin Sign" (OSS) as the abdominal-located cellulitis appearing like an «orange peel» due to underlying fat deposits.

Results: In our cohort of children ages 2.9 to 17, 10.52 % were overweight, and 5.99% were obese. BIA was assessed from primary school second grade (aged 6.9 and older): 16.58% had overfat, and 16.32% had an obese fat percentage. We found that 7.77% had OSS. From those who had OSS, 61.29% were overweight compared to only 8.53% of children without OSS that were overweight (RR = 7.18); Furthermore, 58.62% of children with OSS were obese compared to only 3.87% of obesity among children without OSS (RR = 15.14). When using BIA to assess body composition, we

found that 50% of children with OSS had an overfat BIA; 20.38% of children without OSS had overfat BIA (RR = 2.45); 82.35% of children with OSS had an obese BIA while 13.52% of children without OSS had an obese BIA (RR = 6.08) (Figure 1).

Conclusion: In our cohort, we found a significant relation between the presence of "Orange Skin Sign" in a physical examination and a higher fat average in BIA, and this relationship grows stronger when we take into account BMI. Orange Skin Sign may be used as an easy clinical marker for overweight and obesity diagnosis and screening and in children.

ID: 231/PEDIATRICS GP-1: 15

Oral Presentation

Care for children's health in Slovenia

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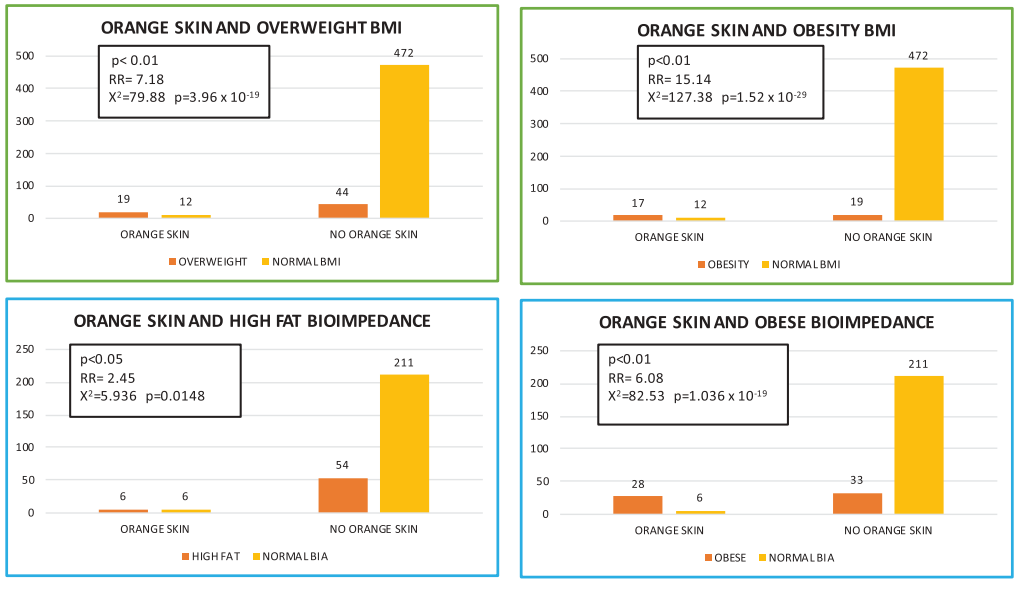
Introduction: Health is one of the fundamental human rights and values. In the primary care system in Slovenia, all people have available several free preventive checks-up and programs. Through various preventative activities and good health promotion, we improve the health of children and families.

Purpose: The purpose of the survey was to identify differences in parental familiarity with importance of children´s preventive checks-up.

Materials and Methods: We used a quantitative research approach. Instrument research was a structured questionnaire. In research, the sample was included 72 parents of preschool children. To determine statistically significant differences between variables, we used descriptive statistics and x2 test. We verified the statistical significance level of 5% of the risk ($p \leq 0.05$).

Results: We found out statistically significant differences in informing parents about the importance of preventive examinations of children by the age of the parents ($p = 0.021$) and level of education ($p = 0.045$) just in two of the six claims. Parents are well-informed on preventive checks-up of children.

Figure 1.



Conclusions: Children's health is one of the primary goals of the health-care system. Quality health care for children at the primary level provides excellent support for parents who provide good conditions for healthy growth and development of the child.

PEDIATRICS GP-2

ID: 232/PEDIATRICS GP-2: 1
Oral Presentation
Improving the Personal and Family Experience of Children with Medical Complexity

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Introduction: Children with medical complexity (CMC) are an important and challenging population within our tertiary Paediatric hospital. By virtue of their complexity, they tend to have longer and/or more regular hospital stays and are often cared for by multiple teams. Recognition of their complex care needs and exemplary communication is needed to ensure these patients have the most positive experiences possible.

Purpose: To investigate the experiences of CMC and their families in an inpatient setting and to assess the effect of previously implemented measures to improve their care.

Materials and method: A first cycle of this audit was performed in 2018. We used this information to implement changes, including introducing a CMC "flag" at handover, encouraging improved communications between teams, and ensuring all CMC had monthly multi-disciplinary team meetings with all involved teams in attendance. We performed the second cycle of an audit by surveying patients/carers who had been inpatients under the care of multiple medical teams admitted for > 7 days to Mountain Ward at the Evelina Children's Hospital. We surveyed all eligible patients over a 3-week period.

Results: The second cycle of this audit showed improvement across all parameters evaluated. In cycle 1, 14% of carers/CMC felt they knew the management plan all of the time. This improved to 50% in cycle 2. In cycle 1, 28% of carers/CMC felt the information was given to them in an easy to understand way all of the time. This improved to 50% in cycle 2. In cycle 1, 14% of carers/CMC felt that medical teams communicated well with each other all of the time. This improved to 40% in cycle 2. In cycle 1, 71% of carers/CMC reported that they felt being under more than 1 team was a problem. This improved to just 25% in cycle 2.

Conclusion: CMC is an important and challenging subset of inpatients within our tertiary Paediatric centre. It appears that the measures we have implemented so far have improved the personal and family experience of their hospital stays.

ID: 156/PEDIATRICS GP-2: 2
Oral Presentation
Hybrid Adenomatoid Odontogenic And Odontogenic Fibroma Associated With An Unerupted Tooth In An Adolescent boy: A Rare Case

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Introduction: Facial swellings are common in children. The causes of facial swellings range from a dental abscess, dental source, trauma, allergic reactions, congenital, and neoplasms. Some can indicate a medical emergency and require urgent surgical intervention. It is well known that unerupted teeth can form cysts, and subsequently, swelling develops. In this case, according to

the clinical and radiographic assessment, a differential diagnosis of odontogenic cyst was given; however, the histology results revealed otherwise.

Case report: A rare case of a hybrid odontogenic cyst associated with an unerupted lower right canine in a 15-year-old boy Afro-Caribbean boy. He initially presented at the Emergency Department with a 2-month history of right-sided facial swelling with no respiratory distress. On examination, the right buccal sulcus and the floor of the mouth was raised with bunco-lingual bony expansion but no signs of infection. Radiographically, there was a well defined, well corticated, expansile, radiolucent lesion around the crown of the impacted lower right canine with a gross displacement of the lower LR2, LRC, LR4, and LR5 teeth as well as extensive root resorption of the LR5 and LR6 teeth. Otherwise, he is medically fit and well. The CBCT scans confirmed the presence of 45x42x41mm lesion in the right anterior mandible, consistent with the OPG radiograph. Due to his ethnic background, our provisional diagnosis include ameloblastoma and dentigerous cyst. The patient had enucleation of the cyst and multiple teeth extraction under general anesthesia. He recovered well postoperatively—the tumour presented as a 48x40x27mm solid mass macroscopically. The oral pathologist described a benign neoplasm with combined features of adenomatoid odontogenic tumour and probable odontogenic fibroma. This case is a first reported of its kind, and we are still awaiting a specialist opinion to review this for a definitive diagnosis.

Discussion: There are many known causes of facial swellings. It is important that all facial swellings, especially in a pediatric patient, must be treated with caution and urgency. Given the clinical manifestation and radiographic findings, a diagnosis was assumed given the presence of an unerupted tooth before histology results. The histology results revealed rare findings that were not reported in the literature previously. The author aims to highlight that it is important to keep an open mind on the rare causes and unreported diseases.

ID: 265/PEDIATRICS GP-2: 3

Oral Presentation

Prenatal Diagnosis of Cleft Lip and Palate of a Specialized Centre and the Role of Family History

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Introduction: Cleft lip and palate (CLP) has a multifactorial and complex etiology, comprising environmental and genetic factors, with family history playing a major role and a crucial aspect in the approach of patients. The prenatal diagnosis (PD) is also an essential component of the clinical work-up. Bi-dimensional ultrasound (US) screening became universally used in Portugal in 2001 by governmental guidelines and in 2007 four-dimensional US became available, both taking part and essential for diagnosis in this field.

Objectives: Analyse the PD usage frequency in children born before 2001, between 2001 and 2007 and after 2007 and evaluate the role of family history and prevalence in patients with CLP.

Materials and Methods: Cross-sectional study of all patients with CLP followed by the transdisciplinary team of CLP of a reference hospital between January 1992 and June 2019.

Results: 638 patients with CLP were identified. Of the children born before 2001 (n = 244) 16.1% had PD of CLP; of those born between 2001 and 2007 (n = 159) 26.9% had CLP diagnosed in utero; those born after 2007 had CLP diagnosis increased (n = 235) to 57%. Since the year of bi-dimensional screening implementation in Portugal, n = 37 (53.6%) of type I—Cleft lip (CL), 103 (75.7%) of type II—CLP, n = 18 (10.6%) of type III—Isolated cleft palate (CP) and n = 1 (16.6%) of

type IV (atypical clefts) were diagnosed in prenatal period. The prevalence of a family history of CLP was 25.8%; of these 29.7% had an identified syndrome.

Conclusion: Since the universal bi-dimensional screening implementation in Portugal, more cases were diagnosed in the prenatal period, with a significant statistical association ($p < 0.001$) between PD and CLP. It was also found an association between the type of CLP and PD, with higher diagnosis accuracy for the CL and CLP ($p < 0.001$). In the sample group, 1/4 of the children had a positive family history for CLP. In the group with DP of CLP, there were no statistically significant differences in the frequencies of associated syndromes and identified genetic anomalies during the years (before 2001, 2001–2007 and after 2007), as expected. The implementation of universal bi-dimensional and four-dimensional US screening in Portugal brought positive results, increasing PD accuracy in patients with CLP.

ID: 109/PEDIATRICS GP-2: 4
Oral Presentation
Rare Diseases are not Orphans in Israel

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Background: The big change in Israel occurred in 1995 with the “National health insurance law”. Since then, every citizen is initialed to be insured in one of the four health insurance companies. The law defines our basket that includes over 3,000 therapeutics. The cost is about 11 billion Euros. We update our Basket every year, and everybody can apply. We add new orphan drugs to our basket almost every year. For example, it was approved in 2007, the drug Meyozyme for 21 patients with Pompe. The cost was almost 150 thousand Euros for each of them. We do not have a price limit for a drug per person, as our law demand “mutual assistance”.

Challenges: The frequency of rare diseases in Israel is slightly higher than the frequency in Western countries because of the high incidence here of marriages between cousins in some of the populations. We discussed many aspects of the subject, including definition and whether we need a special law for rare diseases. We agreed about the need for a register and the minister of health office support and pay for it. We found that there is a big problem with genetics examinations; also, it is in our basket since 1995. We found that because of the high price of the new exams, the health insurance companies are not very happy to provide them. We can not pay the insurance companies for what we already paid and included in our Basket. As we understand that diagnosis is the basis for everything, the government decided to give an extra 9.5 million Euros a year for this purpose, and we pay directly to the laboratories. We have some specialized medical services, especially for rare and unique diseases. We found that much fewer patients than expected come to these clinics. The peripheral areas where we know we have more patients are missing. We decided to finance 3 new clinics for rare diseases: 2 in the peripheral areas of the country and one in the center. Those clinics are not for one disease but for all the patients. They are multidisciplinary clinics with Drs. Nurses, therapeutic teams, social workers, and genetic consultants.

Conclusion: The health insurance companies must pay and send there every patient that known to have or has a question on having a rare disease and wants to be diagnosed or treated there.

ID: 190/PEDIATRICS GP-2: 5
Oral Presentation
Spectrum of the CFTR Gene Mutations in the Kazakhstan Population

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Table 1. Distribution by ethnicity

	%	abs
Kazakh	55	33
Russian	35	21
Ukrainians	3	2
Uighurs	2	1
Korean	5	3

Table 2. Age distribution

	%	abs
<5 years	10	6
5 – 10 years	40	24
10–18 years	38	23
18 years and older	12	7

Table 3. Analysis of mutations detected in patients diagnosed with CF

	Mutations
Patient 1	*delF 508/2184insA*
Patient 2	***delF 508/delF 508***
Patient 3	***delF 508/delF 508***
Patient 4	***delF 508/delF 508***
Patient 5	*delF 508/Q290X*
Patient 6	***delF508/delF508***
Patient 7	***delF508/delF508***
Patient 8	*Fdel508/R553X*
Patient 9	***delF508/delF508***
Patient 10	*delF508/G542*
Patient 11	***delF508/delF508***
Patient 12	*delF 508/c.2818_2819delAC*
Patient 13	*delF 508/S1196X*
Patient 14	*delF 508/N1303K*
Patient 15	*Fdel508/185G>T*
Patient 16	*delF 508/3849G>A*
Patient 17	*Del F508/CFTRdele2.3 (21kb)*
Patient 18	*delF 508/3667ins4*
Patient 19	*delF 508/3667ins4*
Patient 20	*Del F508/CFTRdele2.3 (21kb)*
Patient 21	*delF 508/1677delTA*
Patient 22	*delF 508/p.ser18lle*
Patient 23	***delF508/delF508***
Patient 24	*fdel508/W1282R*
Patient 25	*fdel508/fdel508*
Patient 26	*fdel508/2143delT*
Patient 27	*fdel508/2143delT*
Patient 28	*fdel508/G542X*
Patient 29	*fdel508/R1066C*
Patient 30	*fdel508/2184insA*

Table 4. Other mutations: 31% (21), three mutations in the homozygous state, the rest in the compound heterozygous state

	Mutations
Patient 1	***1677delTA/1677delTA***
Patient 2	*dele2.3/2184insA*
Patient 3	*E831X/K163T*
Patient 4	*3849 + 10kbC/R1066C*
Patient 5	*Y1092/R1066C*
Patient 6	*1898 + 2T>C/c.1175T>G*
Patient 7	*c.1175T>G/c.1175T>G*
Patient 8	*R 1066 C/1677 del TA*
Patient 9	*R 334/Q290X*
Patient 10	*1677delTA/V392G*
Patient 11	*M1101K/Del 2.3(21kb)*
Patient 12	***E92K/E92K***
Patient 13	*R1066C/c.4111_4113dupGAA*
Patient 14	*R1066C/c.4111_4113dupGAA*
Patient 15	*Y1092/c.4111_4113dupGAA*
Patient 16	*R1066C/c.4111_4113dupGaa*
Patient 17	*3849 + 10kbC>T/R668C*
Patient 18	***Q290X/Q290X***
Patient 19	*M1101K/N*
Patient 20	*1898 + 2T>C/V392G*
Patient 21	*1811 + 1G>A/V392G/K68B complex allele?*

Introduction: Cystic fibrosis (CF) is a monogenic-inherited disease characterized by the presence of mutations in CFTR gene. Mutation of the gene leads to dysfunction of the transmembrane regulator of cystic fibrosis (CFTR), and disrupt the normal function of the epithelial sodium channel, break the movement of water in tissues. Secrets become viscous, and its evaluation is difficult. Nowadays, more than 2,000 mutations of the CF gene are known, the majority of which are rare or even unique. There are just a few scientific surveys concerning the frequency and spectrum of the CFTR gene mutations in different ethnic groups of Kazakhstan.

Purpose: The purpose of the study is the analysis the CF mutations, most specific for the Kazakh population.

Methods: The study included 58 patients with a diagnosis of Cystic Fibrosis, based on clinical symptoms. The diagnosis was confirmed by sweat test (the concentration of chloride in the sweat is more than 80 mmol/ml) and decreased the level of pancreatic elastase in the feces. To study the geno-phenotypic correlations and the possible effect of the identified mutations on the clinical picture of cystic fibrosis, all patients underwent molecular genetic analysis by the method of genome sequencing (New Generation Sequence).

Results: According to the results in 40% of cases, cystic fibrosis was diagnosed at the age of 5–10 years old and in 38%—at the age 10–18 years, thus revealed the significant problems with early diagnosis of the disease. During the study, 28 mutations specific for cystic fibrosis were identified. Most common among the European population delF508 mutation was detected in 30 patients (51.7%), besides, in 9 cases (30.0%) in a homozygous state, and 21 patients (70.0%) in a heterozygous state. Obtained data indicate the predominance of the delF508 mutation in a cohort of patients with cystic fibrosis, regardless of ethnicity. In the Kazakh population, the delF508 mutation was determined in 43% (13 patients), among representatives of the Russian nation in 47% (14), in other nationalities—in 10% (3 patients). During investigation, other mutations except for

DelF508 were revealed in 31% (21 patients), three mutations in the homozygous state, the rest in the compound or heterozygous state. It should be noted that so-called "severe mutations" were detected in 78% (22 patients), and "soft" mutations—in 22% (6 patients). A mutations E92K (p. Glu92Lys, c.274G>A) and Q290X were identified for the first time in the Kazakh population, each of them in one case and homozygous state (Tables 1, 2, 3, 4).

Conclusion: Analysing the different complications of the digestive system, it is necessary to say, that much smaller amount of digestive organs complications (liver cirrhosis, diabetes) were the result mostly of "soft" genotypes prevalence (R 334, E92K, 3849 + 10kbC, E831X, M1101K).In patients with unidentified mutations of 12% (7) of the CFTR gene, the disease was manifested mainly by pulmonary symptoms with gradual lesions of the other organs.

ID: 176/PEDIATRICS GP-2: 6

Oral Presentation

The Effects of Exercise Training on Pulmonary Function, Respiratory Muscle Strength and Functional Capacity in a Case with Brown-Vialetto-Van Laere Syndrome

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Introduction: The Brown-Vialetto-Van Laere Syndrome (BVVLS) is a rare neurological disorder characterized by progressive pontobulbar palsy associated with sensorineural deafness.

Purpose: It was aimed to evaluate the effects of 8-week aerobic and respiratory exercise training on pulmonary function, respiratory muscle strength, and functional capacity in a 14-year-old case with BVVLS.

Case description: A 14-year-old boy diagnosed with BVVLS was referred to the Pediatric Physiotherapy Rehabilitation Training and Research Laboratory. Demographic, clinical data, and pulmonary function test results; forced-vital-capacity (FVC), forced-expiratory-volume-in-one-second (FEV1), FEV1/FVC ratio, 25-75% of forced-expiratory-flow (FEF25-75), peak-expiratory-flow (PEF) were recorded. Respiratory muscle strength was evaluated by measuring maximal inspiratory and maximal expiratory pressures (MIP-MEP) with portable mouth-pressure-measuring-device. In order to reduce the learning effect, the tests were repeated 3 times, and the best-measured values were recorded. Functional capacity was evaluated by 6-min-walking-test (6MWT), and % predicted 6-min-walking-distance (6MWD) was recorded. Before and after the test, O2 saturation, heart rate, and blood pressure were measured, Borg Dyspnea and Borg Fatigue scales were questioned. A program including aerobic-exercise-training and respiratory-exercise-training was planned. Elliptical bike, treadmill, and exercise bike were used randomly during sessions. One of three aerobic exercise equipment was allowed to be preferred in each session for motivation in the exercise program. The training was aimed to continue for 20 min in 50-85% of maximum-heart-rate. After aerobic-exercise-training session, diaphragmatic-breathing-exercises were performed for 10 min. Exercises were continued twice-a-week with physiotherapist for 8 weeks. Measurements were repeated at the end.

Results: Pre- and post-treatment values were FVC (2.33 l; 2.37 l), FVC% (85%; 86%), FEV1 (1.29 l; 1.53 l), FEV1/FVC (54.4%; 65.4%), FEV1/FVC% (64%; 77%), FEF25-75 (1.03 l/sec; 1.21 l/sec), PEF (1.53 l/sec; 1.83 l/sec), PEF% (31%; 37%), MIP (38 cmH2O; 67 cmH2O) and MEP (47 cmH2O; 62 cmH2O). 6MWD (450 m; 501 m) and % predicted 6MWD (64.48, 71.79).

Conclusion: In this case report, improvements were observed in pulmonary functions, respiratory muscle strength, and functional capacity with aerobic and respiratory exercise training. We think that exercise training programs are important in individuals with BVVLS.

ID: 247/PEDIATRICS GP-2: 7

Oral Presentation

Cleft Lip and Palate and 22q11.2 Deletion Syndrome

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Introduction: The cleft lip and/or palate (CLP) is a frequent congenital anomaly and may be associated with 22q11.2 deletion syndrome. This syndrome is the most common chromosomal microdeletion disorder and has great phenotypic variability, including, among others, spectra previously described as DiGeorge syndrome and velocardiofacial syndrome.

Purpose: Epidemiological and phenotypic characterization of a cohort of patients with 22q11.2 deletion syndrome followed in a transdisciplinary group of CLP.

Materials and Methods: Retrospective analysis of the clinical information of a cohort of 617 patients followed in the CLP consultation between 1992 and 2018. Twenty-seven cases (4.4%) with 22q11.2 deletion were identified.

Results: Of the 27 patients, 15 (55.5%) are female. The average age is 12.7 years (3–26 years). Five patients (18.5%) had a family history of CLP. None had a prenatal diagnosis of CLP. Type III (post-foramen) cleft is present in 77.7% of cases, type II (trans-foramen) in 11.1%, and type I (pre-foramen) in 7.4%.

Cardiac malformations were diagnosed in 59.3% of cases: 56.2% ventricular septal defects, 31.2% tetralogy of Fallot, 11.1% auricular septal defects, and 7.4% truncus arteriosus, among others. They also present dysmorphic facial features (70.3%), ocular (33.3%), cranioencephalic (29.6%), genitourinary (22.2%), and gastrointestinal (14.8%) anomalies. Nine patients have developmental delay, and 25.9% have immunodeficiency.

Conclusion: The clinic of 22q11.2 microdeletion syndrome includes a broad spectrum of phenotypic presentation that includes congenital anomalies as congenital heart disease, palatal, gastrointestinal and renal abnormalities, and later-onset conditions, such as immunodeficiency, autoimmune disease, variable cognitive delays, behavioral phenotypes, and psychiatric illness. As described in the literature, the most common structural anomalies were facial and cardiac, so their association with CLP makes the assessment of chromosomal constitution mandatory.

It is emphasized that the management of these patients requires a multidisciplinary approach, multiple interventional therapies, and genetic counseling.

ID: 115/PEDIATRICS GP-2: 8

Oral Presentation

The Impact Of Training In Primary Health Care Centers On Medical Students Pediatrics Clinical Skills

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Background: Many studies highlighted the importance of implementing a pediatric training program for medical students in primary health-care centers. It is well documented that medical

students receive their best training at primary care centers because of many factors such as small group sessions and the presence of real patients for hands-on training, which helps medical students to improve their communication and clinical skills.

Objective: To determine the effectiveness of the pediatrics clinical skills module in the primary health-care center in improving students' clinical and communication skills.

Methods: One hundred medical students were involved in this study. A 1-month community pediatrics training program in a primary care center was developed for these medical students, and a self-assessment and clinical exam were conducted at the beginning and end of the program.

Results: The study showed that students benefited greatly from this community pediatrics training program at a primary care center, with significant differences between their pre-existing known skills and clinical skills acquired by the end of the program.

Conclusion: A pediatric clinical skills module at a primary health-care center enables medical students to achieve more of their important pediatric clinical skills and should be mandatory training for all medical students.

ID: 158/PEDIATRICS GP-2: 9

Oral Presentation

The Gingival/Mucosal Soft Tissues of the Child's Mouth in Health and Disease

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Introduction: The establishment of the oral soft tissues, initially in the primary dentition and later in the permanent dentition can be a dynamic reflection of the health of the child. In particular, the primary immune deficiencies, gastrointestinal illness, hematological disease, and numerous syndromes have dramatic and diagnostic oral manifestations.

Discussion: This presentation will review the usual development of the oral soft tissues from birth, through the establishment of the primary dentition, shedding of the primary teeth during the mixed dentition through to the establishment of the permanent dentition in adolescence. The two main soft tissues of the mouth, oral mucosa, and gingivae are complemented by the significant muscle and salivary gland tissues present. The recognition of the usual parameters of oral soft tissue health —size, shape colour, and contour—will be explored in health and disease. The importance of the recognition of variations from the accepted norms will be highlighted in the recognition of local and systemic disease. In summary, this presentation will illuminate an important area of pediatric health that is often neglected and demonstrate the importance of putting oral health into health.

ID: 291/PEDIATRICS GP-2: 10

Oral Presentation

Five Years of Kawasaki Disease: A Single-Center Study

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Introduction and objectives: Kawasaki disease (DK) is the most common cause of pediatric acquired heart disease in developed countries. It is usually self-limiting, but complications with significant morbidity and mortality may occur. The aim of this study was to characterize pediatric patients observed with the diagnosis of KD in the last 5 years.

Methodology: Retrospective descriptive study, 1 January 2014, to 31 December 2018, of children observed in a central hospital with KD, according to AHA criteria. Statistical analysis with SPSS®.

Results: There were 25 cases of KD, 8 of which were incomplete, 2 Kawasaki shocks, and 1 macrophage activation syndrome. Median age of presentation 27 months (min 5 months, max 14.5 years), 14 < 5 years, and 15 males. Sixty percent admitted in fall-winter. Median fever days at diagnosis of 6 days (min 4, max 14). The most common classic criteria were rash (n = 23), mucosal (n = 22) and ocular (n = 3) changes. Sixty-eight percent with gastrointestinal manifestations. Ten patients with changes in the initial echocardiogram, 2 maintained aneurysms during follow-up. All received combination therapy with immunoglobulin (Ig), and ASA. Six received second dose of Ig and eight corticosteroids (CTC) in first or second line. Five patients were at high risk for Ig resistance according to Kobayashi criteria, but only two had a fever after 36h.

Conclusions: The small sample size and diverse patient follow-up do not allow us to infer a causal relationship between coronary sequelae and Ig or CTC therapy. Prognosis depends fundamentally on early diagnosis and assertive treatment. The standardization of the therapeutic approach and tools for identifying high-risk patients are urgent

ID: 271/PEDIATRICS GP-2: 11
Oral Presentation
Classified therapy of Kawasaki disease

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Introduction: Kawasaki disease (KD), a systemic vasculitis affecting coronary arteries, is the most prevalent acquired heart disease of children in developing countries. A standard therapy of KD is intravenous immunoglobulin (IVIG) and percutaneous aspirin. Ten to 20% of KD is resistant to IVIG, and additional IVIG or other therapy (steroid, an immunosuppressive drug, or infliximab) are selected. Some clinical scores are used to know the resistance to IVIG. On the other hand, some cases of KD are self-limited without therapy. Previously we used 1g/kg IVIG for the therapy of KD and added 1g/kg IVIG if the first 1g/kg IVIG is not effective. From these experiences, we confirmed the score to detect 1g/kg IVIG effective.

Purpose: In this study, we confirm the usefulness of the score of 1g/kg IVIG effective compared to the score of the resistance to 2g/kg IVIG.

Materials and Methods: We examined retrospectively the medical records of 303 patients of KD who were admitted to our hospital for 3 years. They were divided into three groups by the scores (the score of 1g/kg IVIG effective and the score of the resistance to IVIG) and treated with 1g/kg IVIG, 2g/kg IVIG or 2g/kg + steroid, respectively. We compared the hitting ratio of the two scores. Statistical analysis was performed using $\chi 2$-test, and $P < 0.05$ was significant.

Results: 81 patients were treated with 1g/kg IVIG, and 20 patients of them were resistant to the therapy. Ninety-eight patients were treated with 2g/kg IVIG, and 29 patients of them were resistant to the therapy. All of the patients resistant to the first therapy were treated with additional therapy, and no one had coronary diseases. The hitting ratio of the 1g/kg IVIG score is the same as that of the 2g/kg IVIG score.

Conclusion: This datum suggests that the 1g/kg IVIG score is useful as 2g/kg IVIG score, and we can practice the classified therapy of KD by using these scores.

ID: 281/PEDIATRICS GP-2: 12
Oral Presentation
Tall Stature: Experience of a Pediatric Endocrinology Unit

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Introduction: Tall stature, although as common as short stature, is a rare reason for children or their families to seek medical attention, probably due to greater social acceptance. The vast majority of tall children are healthy; however, it is crucial to identify children in whom tall stature is a sign of an underlying disorder.

Purpose: To characterize clinical features, epidemiology, approach, and underlying etiology of children with tall stature in a pediatric endocrinology clinic (PEC).Materials and Methods: Retrospective study enrolled in a Portuguese PEC, from September 2018 to August 2019, which included only patients with a height z-score for age (ZH/A) greater than two.

Results: A total of 31 cases were identified, and 58% were males. The majority of tall stature patients sample were referred by motives other than height (80.7%), with only 3.2% referred on account of high stature, 12.9% of overgrowth, and 3.2% of macrosomia. Most referrals were made by the primary health-care physician (77%).

At the first consultation, mean age was 8 ± 3.98 years (min 1; max 15), 54.8% prepubertal, and 6.5% in tanner stage V. Dysmorphic features were found in 9.7%. Target height z-score was 0.75 ± 0.78 (min −0.86; max 2.21). 22.6% had a family history of endocrine pathology, and 16.1% reported a familiar background of tall stature.

Etiological investigation was adjusted to individual assessment, and the most frequently requested exams were: laboratory analysis (n = 24), followed with bone age (BA) determination (n = 11 patients, 45.5% with advanced BA) and genetic study (n = 7).

In our sample, 29.1% had normal growth variants, 41.9% had exogenous obesity, and 16.1% had endocrine causes (early puberty in all cases). One child had Klinefelter's Syndrome, and three have clinical features of Marfan Syndrome (waiting still for the ongoing genetic study).

Conclusion: Although tall stature is often undervalued, pediatricians should be able to recognize signs for organic etiology. Dysmorphic features, disproportionate growth, precocious puberty, or developmental delay are "red flags" to a probable pathological cause of tall stature.

ID: 121/PEDIATRICS GP-2: 13

Oral Presentation

Cardiac Remodeling and Its Biomarkers In Overweight Adolescents

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Background: Cardiac remodelling (CR) is a complex process involving cardiac myocyte growth and death. Impaired subclinical ventricular function may contribute to the risk of CVD in obesity. The left longitudinal ventricle (LV) strain and strain rate (SR) are accurate methods to study the early effects of overweight in the preclinical findings than traditional LV ejection fraction. Furthermore, the CR biomarkers may be used in screening for CVD.

Aims. The aims were to study the early effects of overweight on LV longitudinal strain and SR and the CR biomarkers. Study Design and settings. Case–control study at Schools.

Methods. We randomly selected 264 male students at the seventh and eleventh grades from our previous cross-section study. Anthropometric measurements were performed. Using the International Obesity Task Force (IOTF) interpretation of Body Mass Index (BMI), 105 children were consented and divided as 53 normal (5th to <85th centiles) and 52 overweight (>85th centiles). LV longitudinal strain and SR performed by 2D speckle tracking echocardiography (STE). Blood samples for CR biomarkers were done. T-test and Pearson correlation analyses were used to compare between the two groups to test for significant differences and associations.

Results. The mean ages ±SD for normal and overweight children were 14.47 ± 2.14 vz 14.16 ± 2.17, respectively. The significant differences of LV longitudinal strain and SR between both groups were; 19.46 ± 0.53 vz 20.6 ± 0.52, $p < 0.05$, and 1.14 ± 0.02 vz 1.2 ± 0.04, $p < 0.05$, respectively. Pearson correlation between N-terminal pro-A-type natriuretic peptide (NT-pro-ANP) and LV longitudinal peak strain basal inferior septum, $r = 0.34$, and $p < 0.05$. Similarly, the correlation between N-terminal pro B-type natriuretic peptide (NT-pro-BNP) and LV longitudinal peak strain basal anterior septum is; $r = 0.35$ and $p < 0.05$. Also, N-terminal pro C-type natriuretic peptide (C-Neuropeptide) is correlated with longitudinal peak strain medial basal and anterior septum; $r = 0.44$, $p = 0.007$ and with longitudinal peak strain basal inferior septum $r = 0.345$ and $p < 0.05$. There is a correlation between endothelin-1 and longitudinal peak strain apical lateral, $r = -0.364$, $p = 0.029$. The correlation is observed between Adiponectin and left ventricle longitudinal peak strain apical lateral, $r = -0.517$, $p = 0.001$ and with LV longitudinal peak strain apical anterior, r = —0.35, $p = 0.039$.

Conclusion. Our study showed that the overweight problem is associated with preclinical longitudinal LV myocardial dysfunction and correlated with biomarkers of CR. Segmental analysis of the LV and biomarkers of CR can both provide subclinical markers for the emergence of future obesity-related cardiac diseases.

ID: 211/PEDIATRICS GP-2: 14

Oral Presentation

Preventing Pertussis by adult immunization of Pediatric Healthcare Workers: a study from Northern Italy

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Introduction: Pertussis is a highly contagious respiratory illness, and infants < 1-year-old are characterized by the highest age-specific rates and morbidity/mortality. Nowadays, pertussis circulates across age groups, resurging in adults with inappropriate immunization status, and then affecting younger patients. Vaccination of adults interacting with pediatric age subjects is, therefore, the cornerstone of an efficient prevention strategy, particularly in health-care settings. In other words, pertussis vaccination of health-care workers (HCWs) operating in pediatric settings is a sort of interplay between pediatrics and occupational health, with Occupational Physicians (OPh) having the opportunity to significantly contribute to the infant health. Hence, the present study aims to characterize knowledge, attitudes, and practices towards pertussis immunization in a sample of occupational physicians (OPh) from Northern Italy.

Material and Methods: A total of 148 OPh (45.9% males, mean age of 40.3 ± 13.2 years) participating to a series of formation courses on vaccination in health-care settings were invited to compile a web questionnaire including a knowledge test on Italian recommendations for pediatric HCWs (i.e. 12 true-false statements, elaborated through extensive literature review covering some typical misconceptions on pertussis vaccination), epidemiology and pathology of pertussis infection, being then investigated about their risk perceptions (i.e. rating perceived severity and frequency of pertussis infection, as well as severity and frequency of side effects of pertussis vaccine), and vaccination practices. Vaccination perceptions and practices on other HCWs immunizations (i.e., HBV and Influenza) were retrieved as well in order to compare correspondent results. A General Knowledge Score (GKS) and a Risk Perception Score (RPS) were calculated. Multivariate odds ratios (OR) for predictors of vaccine propensity were calculated through regression analysis.

Results: 78 participants regularly recalled pertussis vaccination status and/or performed pertussis vaccination in HCWs (52.7%). Proactive status was correlated with the aim to avoid pertussis infection in HCWs and its diffusion to other adults ($p < 0.001$, both statements). GKS was satisfying (72.4%±14.9), but participants underestimated the clinical issues of pertussis infection (RPS 60.8%

±9.5) when confronted with influenza (73.9%±10.9) and HBV infection (68.1%±10.1). GKS and RPS were well correlated (r = 0.244, p = 0.003). Eventually, a better GKS and the aim to avoid pertussis infection in HCWs were predictive of a proactive status for pertussis vaccination (OR 4.186 95%CI 1.809–9.685 and OR 11.459, 95%CI 3.312–39.651, respectively) (Table 1).

Conclusions: Adherence of OPh to HCWs pertussis vaccination was unsatisfying. As knowledge status was predictive for vaccine propensity, information programs for OPh should be more appropriately designed, stressing that HCWs may represent a significant reservoir for pertussis infection in high-risk groups (e.g., children/newborns, but also for the frail elderly). In order to reduce the potential burden of pertussis in pediatric patients, OPh should raise their awareness of the potential issues from averted pertussis vaccination in HCWs, at least in those operating in pediatric settings

PEDIATRICS GP-3

ID: 178/PEDIATRICS GP-3: 1

Oral Presentation

Multifocal Chronic Osteomyelitis to Multiresistant Serratia Marcescens in a Child with Sick Cell Disease and Bone Tuberculosis

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Introduction: Diagnosis of multifocal osteomyelitis can be difficult in children with sickle cell disease (SCD), but distinctive features as symmetrical bone involvement are useful. Treatment is also a challenge and should take into account the different pathogenic organisms commonly found in asplenic children and the possibility for multiresistant bacterias. Prolonged courses of

Table 1. Factors associated with proactive status towards pertussis vaccine (Tdap pos.; i.e. assessing pertussis immunization status, and/or performing Tdap vaccine) for health-care workers in 148 occupational physicians participating to the survey. Multivariate odds ratio (OR) with respective 95% Confidence Intervals (95%CI) were calculated through a regression analysis model including all factors associated with Tdap in univariate analysis (p < 0.05), and controlled for age and sex. Note: GKS = general knowledge score; RPS = risk perception score

	Tdap pos. (No./78, %)	Tdap neg. (No./70, %)	P value	OR (95%CI)
Age > 40 years (No., %)	27, 34.6%	25, 35.7%	1.000	
Seniority > 10 years (No., %)	31, 39.7%	21, 30.0%	0.286	
Male sex	35, 44.9%	33, 47.1%	0.911	
Children in the household (No., %)	40 (52.6%)	40 (55.6%)	0.848	
GKS > median	42, 53.8%	26, 37.1%	0.048	4.186 (1.809; 9.685)
RPS > median	35, 44.9%	41, 58.6%	0.134	
Previous interaction with pertussis cases (No., %)	36 (46.2%)	24 (34.3%)	0.193	
Acknowledging pertussis vaccination as useful for …				
… avoiding infection in HCW	72, 92.3%	39, 55.7%	< 0.001	11.459 (3.312; 39.651)
… avoiding diffusion to other adults	69, 88.5%	42, 60.0%	< 0.001	1.503 (0.514; 4.397)
… avoiding diffusion to children/ newborns	70, 89.7%	61, 87.1%	0.812	
Specialization in Occupational Medicine	31, 39.7%	37, 52.9%	0.152	

parenteral therapy and aggressive surgical interventions are, therefore, frequently necessary in this patients.

Case description: A 9-year-old female with SCD presented from Angola with persistent fever and osteomyelitis. There was a three-week history of pneumonia treated with cefazolin and ciprofloxacin, and latter switched for chloramphenicol and clindamycin. She was admitted to our hospital with the clinical diagnosis of multifocal osteomyelitis, and cefotaxime and gentamicin were initiated. The MRI confirmed multifocal osteomyelitis of the humerus and radius and suggested abscesses which were drained twice in the operation room. It also presented bilateral arthritis of the elbows with left effusion and shoulder synovitis/arthritis. Bone and synovial fluid biopsies were positive for multiresistant Serratia marcescens. She was medicated with meropenem and amikacin, which she completed for 12 weeks and hyperbaric oxygen therapy (HOT) with clinical improvement. On day 33, due to neutropenia with relapsing fever, we admitted nosocomial infection, and she was medicated with vancomycin and amphotericin B, latter discontinued due to severe hypokalaemia. No agent was identified. She lost 6 kg and coming from a country where tuberculosis is endemic, IGRA determination was also accessed and became positive. Thorax CT excluded pulmonary tuberculosis, but spinal MRI showed inflammatory/infectious spondylodiscitis of L4-S2, and therefore, the diagnosis of bone tuberculosis was assumed, and isoniazid, rifampicin, pyrazinamide, and ethambutol were initiated. A month later, toxic hepatitis was diagnosed, and after a discontinuation, isoniazid was replaced by levofloxacin, and she completed the treatment with no complications. She was discharged after completing the antibiotic therapy, and on the following observations, she maintained some limitations on the extension of both arms and abduction of the left shoulder.

Conclusion: Chronic osteomyelitis is a challenge to every physician. Besides the bone infection, sequestra, and impaired local vascularity with a compromised tissue envelope can occur, and sequelae are frequent. In this case, the absence of clinical resolution besides appropriate antibiotics and surgical debridement and the epidemiological context raised the suspicion of bone tuberculosis. Appropriate treatment and latter adjuvant therapy with HOT were the key.

ID: 283/PEDIATRICS GP-3: 2
Oral Presentation
A Zoonosis Without Fever

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Background: Transmission of infectious agents from animals to man occurs by direct contact with the animal by ingestion, inhalation, or inoculation of the infectious agent. Zoonosis are infectious diseases transmissible from vertebrate animals to humans under natural conditions. The infectious agents involved include bacteria, viruses, parasites, fungi, and rickettsia, among others.

Case Report: A 13-year-old female teenager, with cognitive impairment, third child of healthy consanguineous parents, rural area resident, with dog contact was referred to the paediatric department for frequent epistaxis with 1 week, and thrombocytopenia and anemia, detected a month earlier in routine analysis, without fever, night sweats, tiredness, adynamia, anorexia or notion of recent weight loss (or other symptoms). On examination, had a weight and height in the 3rd percentile, pale mucosae, skin without visible bruising, and palpable hepatosplenomegaly. Initial laboratory tests showed normocytic/normochromic anemia (Hb 9g/dL; VGM 70fL; HGM 22pg), thrombocytopenia (80 000/u3), mild hepatic dysfunction (AST 129U/L and ALT 77U/L), ESR 100mm/h and negative serologies for HIV 1/2 and IgM EBV/CMV. Abdominal ultrasound showed moderate hepatosplenomegaly regular contours and homogeneous echostructure, with no apparent focal lesions and no distortion of hepatic architecture. Due to the test results already performed, the history of contact with the neighbor's sick dog, and the patient living in an endemic

area, a diagnosis of leishmaniasis has been proposed. The next laboratory tests showed normal myelogram, bone marrow aspirate with positive leishmania PCR, and peripheral blood positive leishmania IgM/IgG (ELISA) (with negative PCR). She initiated therapy with liposomal amphotericin B (5mg/kg for 5 days) in D8; then (5mg/kg) in D14 and D21, with progressive clinical and analytical improvement

Conclusion: We present this case due to the atypical presentation form and to underline the importance of detailed clinical history and physical exam in the early diagnosis and treatment of a potentially fatal disease.

ID: 287/PEDIATRICS GP-3: 3
Oral Presentation
Pubertal Delay—Experience of a Portuguese Pediatric Endocrinology Unit

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Introduction: Pubertal delay is defined as the absence of a breast button by age 13 and testicular volume equal or less than 4 mL by age 14. Etiology can be divided into three groups: constitutional delay of growth and maturation (CDGM), hypogonadotropic hypogonadism, and hypergonadotropic hypogonadism. Investigation includes endocrine screening tests, bone age, karyotype, and imaging studies.

Purpose: Characterize patients with pubertal delay referred to a Portuguese Pediatric Endocrinology Unit, according to clinical presentation, etiology, and treatment.

Materials and Methods: Retrospective observational study based on clinical records of patients followed at the Endocrinology clinic for 12 months (September 2018 to August 2019).

Results: A total of 34 cases were identified; 7 were females and 27 males. The average age at first consultation was 13 years and 3 months. The main reasons for referral were short stature (41.2%), absence of pubertal development (23.5%), and growth deceleration (14.7%). According to the etiological groups, 61.7% of cases had CDGM, 20.5% had hypogonadotropic hypogonadism (6 panhypopituitarism, 1 congenital multiple deficit hypopituitarism) and 17.6% had hypergonadotropic hypogonadism (2 Turner Syndrome, 1 Noonan Syndrome, 1 Klinefelter Syndrome, 1 congenital anorchia). In the female group, 71% had pubertal delay secondary to an underlying pathology, and 29% had CDGM; 70% males had CDGM. There was no family history of pubertal delay, except for 2 twin brothers with CDGM. The main comorbidities detected were obesity (17.6%) and history of orchidopexy (8.8%). Cerebral and pituitary magnetic resonance imaging was performed in 16 patients (7 with pituitary hypoplasia). Bone age study was done in 26 patients (delayed in 8 cases, 5 of them males with CDGM). Testosterone was given to 17 males at an average age of 14 years and 6 months. Six girls started estradiol therapy (50% oral, 50% transdermal) at an average age of 14 years and 5 months. Ten patients were on growth hormone, 9 on levothyroxine, and 4 on hydrocortisone.

Conclusion: Pubertal delay is a relatively frequent reason for referral to Endocrinology clinic and, with this work, the authors were able to confirm that this entity is more frequent in males and usually a consequence of CDGM, opposite to females, where it is usually a consequence of an underlying pathology. These results in accordance with the data described in the literature.

ID: 184/PEDIATRICS GP-3: 4
Oral Presentation
Evaluation of a Child Abuse Workshop

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Introduction: Early detection and evidence-based management of child abuse and neglect (CAN) by health-care professionals could be crucial for the child's long-term health, physical integrity, or even life. Although there is a growing need to address CAN in Greece, there is currently only one hospital-based child protection team led by a pediatrician and faculty member of the National and Kapodistrian University of Athens Medical School (NKUA). Medical students at the NKUA received only one 1h of lecture during their clerkship in Pediatrics. In addition, there are data to suggest that adult learners perform best in an interactive training setting.

Purpose: To evaluate the effectiveness of a medical student-led CAN workshop, as well as the learning outcome for participants.

Materials and Methods: Following a brief presentation by the pediatrician—faculty member of the basic clinical tools in the detection and assessment of CAN, medical students form small groups. Specifically trained medical students—actors, impersonating a "parent" bringing their "infant/child" to the ER, work with each group separately in order to elicit the medical history, examine the patient, request all necessary investigations and end up with a patient assessment to share with the entire group. Purpose-created educational dolls with physical findings represent "infants/children". Finally, legal procedures and communication skills are discussed. Multidisciplinary members of the child protection team participate in the coordination of the groups. In order to evaluate the workshop, a knowledge and self-efficacy questionnaire on CAN was distributed to participants before, after, and 6 months after the workshop. NKUA IRB approval was obtained prior to the conduction of the workshops and the distribution of the questionnaires.

Results: By incorporating the workshop in the NKUA pediatric curriculum, 250 medical students have participated, and 182 participants completed the optional questionnaire. For the questions of knowledge, an 8.9% increase in the correct answers after the workshop compared to before ($p = 0.0065$) was found. An approximately 20% increase in positive answers regarding self-efficacy questions was shown ($p = 0.0001$). Our workshop was described as "innovative" and "the best thing anyone has done in Pediatrics" in an open question about feedback from the participants.

Conclusion: The workshop can be used as an effective educational method to empower medical students in the identification and management of CAN. Participation in this interactive workshop led to improved knowledge and self-efficacy for participants and created an enjoyable learning setting.

ID: 150*/PEDIATRICS GP-3: 5
Oral Presentation
The Effect of Physical Activity on Sleep Habits Among Preschool-age Children

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Introduction: Sleep problems are known to be risk factors for subsequent emotional and behavioral difficulties in childhood and adolescence. Based on the health benefits of physical activity, to date, there has been no study investigating the effect of physical activity on sleep habits among preschool-age children.

Purpose: The aim of this study was to examine the effect of physical activity on sleep habits among preschool-age children.

Method: The study was carried out with the voluntary participation of 30 preschool-age children in Special School. Children's' demographic data were recorded. The children were randomly assigned to 15 activity and 15 control group. Children's Sleep Habits Questionnaire (CSHQ) were applied for both

groups before and after the physical activity program. Physical activity program performed for activity group as ball capture, long jump, and dance activities for 8 weeks, 2 days a week, 30 min a day.

Results: Baseline characteristics of the groups are presented in Table 1. There were no significant differences between the groups. According to the Children's Sleep Habits Questionnaire, sleep habits did not change significantly after physical activity program ($p > 0.05$). (Table 1 and 2)

Conclusion: In our group of children, physical activity had no positive or negative effect on sleep habits. There is a need for studies in larger groups with different physical activity programs.

Table 1. Demographic data of children

	Activity group (Mean±SS)	Controlgroup (Mean±SS)	p value
Age (month)	69.20 ± 3.27	70.93 ± 4.78	0.257
BMI (kg/m^2)	15.39 ± 1.99	15.39 ± 1.72	0.933
Sleep time (minute)	592.66 ± 52.53	630.00 ± 67.08	0.101
Night waking time (minute)	7.53 ± 15.57	4.26 ± 3.65	0.436

Table 2. Comparison of pre and post assessment

	Activity group (Mean ± SS)			Control group (Mean ± SS)		
	Pre	Post	p value	Pre	Post	p value
Sleep time (minute)	592.66 ± 52.53	588.00 ± 35.49	0.695	630.00 ± 67.08	626.00 ± 43. 71	0.800
Night waking time (minute)	7.53 ± 15.57	2.80 ± 3.64	0.278	4.26 ± 3.65	4.53 ± 4.30	0.805
CSHQ (score)	52.46 ± 5.01	52.53 ± 5.04	0.957	55.06 ± 5.52	55.40 ± 6.28	0.632

Correction: *This abstract has been republished to include the missing tables. These changes do not impact the academic content of the abstract.

ID: 216/PEDIATRICS GP-3: 6
Oral Presentation
Hepatopulmonary Syndrome

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Introduction: Hepatopulmonary syndrome is a rare complication of liver disease. This disorder is characterized by abnormal arterial oxygenation as a result of intrapulmonary vascular dilatations associated with portal hypertension. Pulmonary vascular dilatation leads to a ventilation-perfusion mismatch causing hypoxaemia. Diagnosis is typically made by bubble echo. Liver transplantation remains the only known treatment to date.

Purpose: Our aim is to describe a rare case of HPS in an eleven-month-old girl. HPS, while more prevalent in the adult population, is rare in childhood.

Case description: An eleven-month-old girl, a member of the Irish Traveller Community, presented to the Emergency Department with a febrile convulsion secondary to pyelonephritis. Her renal

Ultrasound unexpectedly identified an abnormal liver. The youngest of four siblings, family history of illness, was denied; she was described as a previously well child with normal neurodevelopment and growth parameters. She had a normal physical examination, and blood tests were normal.

Results: US: Kidneys normal. Liver grossly abnormal with multifocal well-circumscribed areas of low attenuation. Findings consistent with metastatic disease. CT TAP: lungs clear/no mediastinal mass/lymphadenopathy/intra-abdominal pathology. Urinary catecholamines sweat test, metabolic investigations (ammonia, lactate, glucose, acylcarnitine profile, urinary organic acids, GAG screen, CK) normal. Liver biopsy showed findings consistent with focal nodular hyperplasia (FNH) of the liver. Initial differentials included storage disorders, infections, autoimmune disease, or malignancy. FNH of the liver was an unexpected etiology. It is normally a benign entity, non-progressive, typically associated with adolescent females and not reported in younger children. Relieved parents were counseled regarding this diagnosis. A surveillance program was implemented. At a clinic visit, 4 years later, she was noted to be cyanosed with oxygen saturation levels 90%. She had stigmata of liver disease with clubbing, facial telangiectasia, and hepatomegaly. The changing phenotype resulted in hepatopulmonary syndrome (HPS) and hereditary haemorrhagic telangiectasia being considered. Genetic testing out ruled the latter. A bubble echo confirmed the former. Over the next 12 months, her condition deteriorated. She required home oxygen therapy.

Conclusion: Our patient received a living donor liver transplant from her mother, age six. She has since had a remarkable recovery, and now aged 8 years is perfectly well again. Our case highlights the agony of the child with complexity for devoted parents who received changing diagnoses with variable outcomes. In addition, we emphasise the need for cultural competence among health professionals when dealing with families from different ethnic backgrounds.

ID: 117/PEDIATRICS GP-3: 7

Oral Presentation

Growing Child—Growing Lung: Main Challenges in Pulmonary Function Testing in Children at Different Ages

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Introduction: Spirometry is an essential clinical measurement in children with respiratory diseases and plays an important role in the diagnosis and management of respiratory illness such as asthma and restrictive lung disorders.

Purpose: The aim of the present study was to evaluate the main difficulties in the assessment of lung function parameters in children of different ages.

Materials and Methods: Six hundred and seventy-one healthy Bulgarian school children (339 males) in the age span 7–18 years took part in the study. All participants completed anthropometric measurements—standing height, weight, and BMI. Studied group underwent comprehensive pulmonary function assessment—slow and forced spirometry (MasterScreen Diffusion, Jaeger, Wuerzburg, Germany) in a certified laboratory applying the ATS and ERS criteria to ensure quality.

Results: Spirometry performance standards and quality control in school-age children are the same as for adults. All participants were divided into age groups, and our findings were that younger children—aged from 7 to 9 years—needed a longer time for training and more efforts to produce technically acceptable spirometry results. Start of test criteria: back-extrapolated volume ≤ 5% and within test criteria—flow-volume loop free from artifacts—were met by all studied children. Applying the end of test criteria—duration of forced expiration ≥ 6 sec.—to the studied group, we found that only 23.4% of children met these criteria; 75.1% had forced expiratory time (FET) less than 3 sec. and 1.5% showed premature termination of the test. The percentage of completed criteria increased with age with the lowest values at age 8–3% and highest values at age 14–41%.

Conclusions: School-age children can perform spirometric measurements to meet currently established criteria but the recommendation for a minimum of 6 sec. FET should be modified, especially in young children. The success rate of acceptable and repeatable spirometric tests increases with age.

ID: 198/PEDIATRICS GP-3: 8

Oral Presentation

Composition of Gut Microbiota of children and Adolescents with Perinatal HIV Infection Taking Antiretroviral Therapy

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Background: HIV infection causes impairment of the gastrointestinal barrier, with substantial depletion of CD4 + T-cells in the gut. Antiretroviral therapy (ART) restores the CD4+ counts and may have beneficial effects on gut microbiota in adults. Little is known about the effect of long-term ART on gut microbiome in HIV infected children. We investigated the composition of gut microbiota in HIV infected and uninfected children and assessed associations between gut microbiota and patient characteristics.

Methods: A cross-sectional study. Rectal swabs were collected from 177 HIV infected and 103 HIV uninfected controls. Gut microbial composition was explored using 16S rRNA sequencing (Illumina Miseq).

Results: HIV infected children had significantly lower alpha-diversity and higher beta-diversity compared to HIV uninfected. No association was observed between microbiome diversity and CD4 + T-cell counts, HIV viral load or HIV-associated CLD. We found enriched levels of Corynebacterium ($p < 0.01$), Finegoldia ($p < 0.01$) and Anaerococcus ($p < 0.01$) in HIV infected, and enrichment of Enterobacteriaceae ($p = 0.02$) in participants with low CD4+ counts (<400 cells/mm3). Prolonged ART-treatment (□10 years) was significantly associated with a richer gut microbiota by alpha diversity.

Conclusion: HIV infected children have altered gut microbiota. Our results suggest that prolonged ART minimize the differences in gut microbiota between HIV infected and uninfected participants.

ID: 213/PEDIATRICS GP-3: 9

Oral Presentation

Early Childhood Vaccination and Subsequent Mortality or Morbidity. Are Observational Studies Hampered by Residual Confounding? A Danish Register-based Cohort Study

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Introduction: Studies suggest that some of the vaccines routinely administered in early childhood may affect the risk of illness and death from conditions other than the targeted infectious diseases they are designed to prevent. However, observational vaccine studies can be prone to "healthy vaccinee bias". Healthy children are more likely to be vaccinated, so the "effects" of vaccination may be explained by general better health in vaccine recipients. The ability to receive the next vaccine in the child vaccination programme indicates good health. Further, individuals who also

receive live vaccines are probably more immunocompetent than those who only receive subunit vaccine

Purpose: To estimate the association between childhood vaccination and subsequent morbidity and mortality by adjusting for environmental and host factors. Further, to examine the degree of residual confounding in such observational studies.

Methods: All 1,122,929 children born in Denmark in the period 1999–2016 who survived until 16 months of age without prior migration followed from 16 months until the first of the following: the event of interest, migration, 5 years of age, or 31 December 2016 in a register-based cohort study. The exposure was the combination of the routine vaccines against diphtheria-tetanus-pertussis-polio-Hib and measles-mumps-rubella (DTP and MMR in short) administered in early childhood. Adjusted hazard ratios (aHR) and absolute risks were calculated for the three outcomes mortality, hospitalisation for infection, and asthma using register data on deaths, specific hospital contacts, and dispensed prescribed medication. Hospitalisation due to accidents was analysed as a negative control outcome to examine residual confounding.

Results: Children with 3DTP+MMR had a lower hazard of mortality than the reference group with 3DTP, aHR = 0.45 (95% CI: 0.35–0.57), whereas the children with 1 or 2 DTP had higher hazards of dying, aHR = 1.55 (1.14–2.13) and aHR = 1.96 (1.34–2.89). The vaccination group 3DTP+MMR was associated with a reduced hazard of asthma aHR = 0.94 (0.92–0.96). Also, the vaccination group 3DTP+MMR was associated with a reduced hazard of hospitalisation due to accidents, aHR = 0.83 (0.80–0.85) compared to the reference group with 3 DTP.

Conclusion: The results suggested a beneficial impact of MMR on under-five mortality but did not support the hypothesis that DTP is detrimental since the group of children with fewer DTP-vaccinations experienced increased mortality. The results of the study may, to some degree, be prone to residual confounding since an unexpected association between MMR vaccination and hospitalisation for accidents was observed.

ID: 226/PEDIATRICS GP-3: 10

Oral Presentation

Toxic Hepatitis Due to Antibacillary Therapy in a Patient on Ketogenic Diet

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Introduction: Tuberculosis (TB) is still a relevant cause of disease burden globally. Albeit infrequent, hepatotoxicity linked to antibacillary drugs accounts for most cases of adverse reactions during treatment. Known risk factors include young age, extrapulmonary tuberculosis, and the use of other hepatotoxic drugs. Ketogenic diet (KD) can cause and contribute to liver toxicity. Identifying the culprit in complex cases involving multimedicated patients can be truly puzzling.

Case description: We report the case of a 5-year-old boy with refractory epilepsy associated with alternating hemiparesis and hepatic cysts. He was regularly medicated with phenobarbital, zonisamide, and clobazam, while also on KD for several years. He was hospitalized with mediastinal tuberculosis, under isoniazid (10 mg/kg), rifampin (10 mg/kg), ethambutol (20 mg/kg) and pyrazinamide (30 mg/kg).

After 7 days, he presented with lethargy, nausea, and refusal to eat. His blood tests revealed a substantial rise of both alanine aminotransferase (ALT) (549 U/L) and aspartate aminotransferase levels (857 U/L). Coagulation test values were normal. Antibacillary therapy was suspended, phenobarbital and zonesamide doses were lowered, and the ketogenic diet maintained. After an initial rise of the transaminase values (up to 913 U/L for ALT), a steady analytical normalization was observed over 2 weeks, accompanied by a clinical recovery over a short period of days. After recrudescence of seizures, phenobarbital dose was augmented to 60 mg. According to the

American Thoracic Society guidelines, rifampin and ethambutol were introduced without complications. However, 5 days after isoniazid introduction, a new asymptomatic twelve-fold rise of transaminases was observed. Isoniazide was suspended, and after normalization of transaminase levels, pyrazinamide and levofloxacin were associated to rifampin and ethambutol. He completed 6 months of antibacillary drugs without further complications.

Conclusion: Although hard to prove, the re-challenge scheme leads us to admit isonizade as the most likely cause for hepatoxicity in this case. The exact involvement of anti-epileptic therapy and ketogenic diet remains unclear. KD can cause liver toxicity (7% of cases), by an unknown mechanism. Elevation of aminotransferase levels, steatosis, and gallstone formation related to dyslipidemia have also been reported. There is a pressing need for pediatric-specific drug re-introduction guidelines following toxic hepatitis during the course of TB treatment.

ID: 106/PEDIATRICS GP-3: 11

Oral Presentation

Complications of Totally Implantable Venous Access Devices (Ports) in Children in a Tertiary Care Hospital

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Background: Central venous port accesses facilitate the administration of antibiotics, blood products, fluids, parenteral nutrition, cytotoxic drugs, and the collection of blood samples in children. We aimed to analyze the complications in children with port. Method: This retrospective cohort study was performed at Hacettepe University Children's Hospital. Data of 100 patients with port 2014 to 2015 were evaluated, and the demographics, clinics, and incidence of port-related complications were recorded.

Results: We analyzed patients in two groups as infection group and non-infected group at first. There were 42 patients in the infection group, 58 patients in the non-infected group. The incidence of infection was higher in the patients with hematologic malignancy (p = 0.001) than non-infected group. The odds ratio of infection in patients with hematologic malignancy were 5,97 (95%CI;2,2–15,5). The median duration of port in the infection group was lower (155 days, 95%CI;13–296) (p = 0.001) as compared to non-infected cases. In the infection group, 59.5% of ports were removed due to port-associated infection. Overall, 25 (25%) of 100 ports were removed due to port-related infection with an incidence rate of 0,80 and 2,2 events/1000 catheter-days in 2014 and 2015, respectively. Additionally, we compared patients in infection group as bacteremia (n = 23) and port-related infection (n = 19). White blood cell and absolute neutrophil count were lower in port-related infection group (p = 0,004, p = 0.01). There was no statistically significant difference in terms of risk factors such as a mechanic ventilator, transfusion, chemotherapy, total parenteral nutrition, and previous antibiotic treatment and localization of port between the groups.

Conclusion: The underlying hematologic malignancy was an independent risk factor for infection of port. Furthermore, neutropenia may be a significant factor for port-related infection. Patients with port who have hematologic malignancy and neutropenia should be closely monitored in terms of infection.

ID: 118/PEDIATRICS GP-3: 12

Oral Presentation

Oxidant and Antioxidant Balance in Children with Bacteremia

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Background: There is a crucial balance between oxidant and antioxidant defense mechanisms. We aimed to evaluate the role of the balance of these systems in bloodstream infection (BSI) of children.

Method: We analyzed prospectively oxidant and antioxidant stress parameters from serum samples of children with BSI besides demographic and clinical data of children. Serum levels of the total antioxidant status (TAS), total oxidant status (TOS), ischemia-modified albumin (IMA), antioxidant enzymes, non-enzymatic antioxidant factors, and plasma thiol levels were evaluated in both patients and healthy controls.

Results: A total of 160 children were evaluated, 106 of them had pneumonia with two groups, including 54 outpatients and 52 inpatients, and the remaining 54 were healthy subjects (third group). Total thiol and native thiol levels were significantly lower in the inpatient group as compared with the outpatient group ($p = 0.004$ and $p = 0.005$, respectively). Serum IMA was higher in inpatients than the other groups; the difference of the mean serum IMA levels among those three groups was statistically significant ($p = 0.001$). A positive correlation was found between serum IMA and CRP levels in patients with pneumonia ($r = 0.351$; $p = 0.001$).

Conclusion: Parameters that give an idea regarding antioxidant capacity may be useful for the diagnosis of pneumonia as well as the severity of disease. NT, TT, IMA, MPO, and CLP may be useful for the diagnosis of pneumonia. Because both thiol homeostasis parameters and IMA levels seem likely to be influenced by disease severity, they may be good candidate biomarkers to predict the severity of pneumonia in children.

ID: 228/PEDIATRICS GP-3: 13

Oral Presentation

Borreliosis as a Cause of Myocarditis in Pediatric Age

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Introduction: Lyme borreliosis (LB) is a zoonosis with worldwide distribution, mainly in the northern hemisphere countries with predominantly cutaneous, articular, cardiac, and neuropsychiatric manifestations. The greater variety of genospecies that cause disease in Europe and the complex laboratory confirmation contribute to the disease underdiagnose in Portugal.

Case description: A 17-year-old boy resident in a rural area with a history of recurrent tonsillitis initiates cervical pain, odynophagia, and fever (39°C). Blood work showed leukocytosis (11,280/uL) and neutrophilia (8569/uL) and CRP 23.6mg/L. Oropharynx antigen screening for SGA and EBV antibodies were negatives, but he was discharged with amoxicillin and clavulanic acid. The next day (seventh day of disease), he kept fever (38.3°C), initiated a pruritic maculopapular rash on the face, trunk, and limbs with palmoplantar involvement and started complaining of thoracic pain that worsened with decubitus. Blood work revaluation indicated increased leukocytosis (14,640/uL) and neutrophilia (11,040/uL), CRP 142mg/L, VHS 22mm/h. Chest x-ray had a discreet broncho-hilar reinforcement without pleural effusion or cardiomegaly. Electrocardiogram (EKG) in sinus rhythm, with mild infra ST in DIII and aVF, inverted T wave in V1 and V4 and early repolarization pattern in V2-V3. Due to an episode of tachycardia (270 bpm), cardiac markers were accessed and showed troponin 13932pg/mL, CK 436U/L, and BNP 373pg/mL, echocardiography showed slight global left ventricular dysfunction and hyperechogenic pericardium without effusion. He was admitted with

clindamycin and penicillin and started anti-congestive therapy with carvedilol and enalapril. On the 10th day of disease, of the etiology investigation, it was identified by enzyme-linked immunosorbent assay (ELISA) for Borrelia burgdorferi s.l. IgM antibodies positive (53 UA/mL), IgG antibodies negative with confirmatory test-immunoblot IgM positive with bands OspC Bg, p39, p41. Antibiotic therapy was changed to ceftriaxone and doxycycline, which he complied with for 8 and 7 days, respectively. On the 20th day of disease cardiac magnetic resonance showed an active inflammatory process in the myocardium but undilated ventricles with preserved global systolic function. Progressive improvement of cardiac markers was noticed, currently, with good ventricular function, and at the last observation, he was asymptomatic from the cardiovascular point of view.

Conclusion: LB with myocarditis is a rarity in pediatrics, and diagnosis requires a high index of suspicion. When LB cardiac involvement is readily recognized and treated, serious complications can be avoided.

ID: 208/PEDIATRICS GP-3: 14

Oral Presentation

10 Years of Fish Odor: Trimethylaminuria

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Introduction: Trimethylaminuria (TMAU) or fish odor syndrome is an autosomal recessive disorder characterized by a rotten fishy odor that results from excess excretion of trimethylamine (TMA) in body fluids. TMA is derived from dietary precursors, and it is normally metabolized in the liver by the enzyme FMO3.

Purpose: Describe the clinical and genetic findings of children with TMAU followed in a Portuguese reference center of hereditary metabolic diseases in a 10-year period.

Materials and Methods: Retrospective analysis of the clinical processes of children with TMAU followed in a Portuguese reference center of hereditary metabolic diseases between January 2009 and December 2018.

Results: 10 children were included, 60% male, with first symptoms noted in 80% between 7 and 9 months of age, when fish was introduced into the diet. The odor was referred mainly in the sweat (70%) and urine (50%), in 80% with fish ingestion. Because of the impossibility of urinary TMA analysis, a genetic study of FMO3 was performed. In most cases, one of the most common polymorphisms was identified: pGlu158Lys, 4 cases in homozygosity (2 cases with pGlu308Gly also in homozygosity) and 3 cases in heterozygosity but associated with other variants (pGlu208Lys and pHis149Tyr), which reduces FMO3 activity. In 2 cases, pathogenic variants were identified but in heterozygosity. One case had a negative test, but because of hepatic transplant history, the symptoms can be explained by the donor metabolism. All children had a clinical improvement in the follow-up period, 80% with dietary restrictions.

Conclusion: Besides its benignity, TMAU may have an important social and psychological impact. It is necessary a high level of clinical suspicion for the proper diagnosis, though simple measures could allow an adequate symptomatic control in most cases. Besides compatible clinical manifestations, we could not identify in all cases two pathogenic variants, which leads us to assume that the presence of polymorphisms or one heterozygotic variant may condition reduction of enzymatic activity and mild symptoms.

ID: 255/PEDIATRICS GP-3: 15

Oral Presentation

The Impact of Nursing Interventions Based on Uncertainty in Illness Theory on Uncertainty, Hopelessness, Coping and Adaptation for Care Givers of Children with Cancer

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Introduction: Caregiver of children can experience uncertainty, and it affects their lives.

Method: Quasi-experimental pretest-posttest nonrandomised study aimed to investigate the effect of nursing interventions, based on Uncertainty in Illness Theory, on uncertainty, hopelessness, coping, and adaptation for caregivers of children with cancer. It conducted at paediatric oncology-hematology clinics, two Medical Faculty Hospital in two cities in Turkey, with 46 participants (intervention group-IG = 23; control group-CG = 23) between 15thJanuary-15thJuly 2019. Information form, Turkish Version of Parents' Perception Uncertainty in Illness Scale: Parent/Child Form) (PPUS), Beck's Hopelessness Scale (BHS), Coping and Adaptation Process Scale (CAPS) were used to collect data. Education was conducted with a booklet in the direction of education plan; then, follow-up was made. Data were collected before the intervention, second, and fourth weeks after intervention. Statistical analyses (mean, number, Friedman, Mann Whitney U, etc.) were made SPSS 22.0 package program, $p < 0.05$ were identified important.

Results: IG's median scores from PPUS (pre-test = 82.78 ± 13.98; first evaluation = 73.30 ± 13.65; post-test = 68.69 ± 14.25) were decreased, these were found significantly important (Friedman X2 = 13.640; p = 0.001). CG's median score from PPUS (pre-test = 76.56 ± 19.20; first evaluation = 83.00 ± 15.48; post-test = 75.08 ± 16.54) were decreased which were found significantly important (Friedman X2 = 6.022; p = 0.049). There was not statistically difference between groups about pre-test and post-test median scores ($p > 0.05$), but a median score of first evaluation (MW-U = 169.000; p = 0.036) were found statistically important during the evaluation between IG and CG. IG's median score from BHS (pre-test = 6.47 ± 2.95; first evaluation = 5.56 ± 2.93; post-test = 3.95 ± 1.79) were significantly decreased (Friedman X2 = 16.275; p = 0.001). CG's median scores from BHS (pre-test = 7.56 ± 5.02; first evaluation = 8.34 ± 4.78; post-test = 6.26 ± 4.26) were decreased, it was not statistically important (Friedman X2 = 5.084; p = 0.079). There was no statistically important difference pre-test and post-test median scores between the two groups ($p > 0.05$). First evaluation scores were statistically different between groups (MW-U = 170.000; p = 0.037). IG's median score from CAPS (pre-test = 141.82 ± 15.57; first evaluation = 145.91 ± 11.82; post-test = 150.26 ± 16.30) were increased, this was found significantly important (Friedman X2 = 8.956; p = 0.011). It was observed that CG's median scores from CAPS (pre-test = 141.17 ± 14.44; first evaluation = 139.47 ± 21.82; post-test = 143.30 ± 16.09) were not statistically significantly increased t ($p > 0.05$). There was no statistically important difference pre-test (MW-U = 251.500; p = 0.775) and post-test (MW-U = 182.500; p = 0.071) median scores from CAPS between two group ($p > 0.05$). But there was a significantly high difference median score of first evaluation (MW-U = 159.000; p = 0.021).

Conclusion: Results of the study was showed that nursing interventions based on Uncertainty in Illness Theory decreased uncertainty, hopelessness, and increased coping and adaptation for caregivers of children in IG. During the first evaluation, IG had less uncertainty and more hopeful than CG ($p < 0.05$); at the end of the study, IG was more adaptive than CG ($p < 0.05$).

NEONATOLOGY NEO-4

ID: 102/NEONATOLOGY NEO-4: 1

Oral Presentation

Adipokines And Gestational Weight: Is There Any Relation?

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Overview: The mechanisms through which intrauterine exposures affect the metabolic outcomes of the offspring are poorly understood. Adipokines, leptin and adiponectin correlate with adult and childhood adiposity, but it is unclear how exposure to these adipokines during gestation relates to offspring growth.

Objectives: To evaluate the relation between maternal and umbilical cord adipokines; leptin and adiponectin and the gestational weight in newborns. Subjects and methods: 50 mother-infant pairs (N = 100). Maternal serum, as well as Umbilical cord blood adipokines, leptin, and adiponectin levels, were determined. Anthropometrics measurements of these newborns and their mothers were obtained by trained examiners.

Results: Lower serum maternal and higher cord leptin and higher maternal adiponectin are associated with increased newborn birth weight compared with infants with a normal weight for age ($P < 0.05$). Cord blood leptin concentrations were significantly higher in infants born to obese vs. normal weight women. On the other hand, cord blood adiponectin was similar, comparing gestational obese to normal-weight women.

Conclusion: There is a relation between High umbilical cord blood leptin level.

ID: 159/NEONATOLOGY NEO-4: 2
Oral Presentation
Ca' Canny: Fetal Tachycardia Doesn't Always Mean Fetal Distress

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Background: Neonatal atrial flutter (AFL) is a rare rhythm disorder, characterized by sustained tachycardia in newborns and infants with an atrial rate often at around 440 beats/minute. AFL may manifest as asymptomatic tachycardia, congestive heart failure, or hydrops. It forms about 3% of cardiac arrhythmias in the newborn. Although idiopathic atrial flutter can occur in the fetus, accounting for 30% of fetal arrhythmias in one series, a spontaneous conversion often occurs during birth. Long-term antiarrhythmic medications are rarely required.

Case report: A mother with a twin pregnancy presented at 34 weeks' gestation feeling generally unwell and with reduced fetal movements. CTG monitoring identified a fetal tachycardia in Twin 1. In view of this, a decision was made to deliver immediately by emergency C-section due to concern about fetal distress. The baby was delivered in poor condition and required inflation breaths, and IPPV till 3 min of age. Although initially bradycardic, a sustained tachycardia was noted after 5 min of age with a heart rate of 220 bpm. In NICU, the baby required intubation for respiratory distress syndrome. ECG revealed a ventricular rate of 220 bpm, and P waves were difficult to identify. Supraventricular tachycardia was suspected, IV adenosine was given, and the underlying P wave activity was revealed. This was consistent with atrial flutter. Echocardiography revealed a structurally normal heart, although small bilateral pleural effusions were present. The baby was discussed with cardiology, who recommended electrical cardioversion. As this was being prepared, the baby cardioverted spontaneously, with two subsequent episodes of tachycardia lasting less than 5 min each. Follow-up has been arranged in an outpatient clinic with cardiology.

Discussion: In this case, delivery was expedited by the obstetric team due to concerns about fetal distress. Although fetal tachycardia is often indicative of fetal distress, a fetal heart rate over 200 bpm is more suggestive of a fetal tachyarrhythmia. Given that atrial flutter is well tolerated in the fetus, rarely results in congestive heart failure, and that preterm delivery is associated with significant morbidity and mortality, careful consideration should be given to investigating the etiology of a fetal tachycardia.

ID: 183/NEONATOLOGY NEO-4: 3
Oral Presentation
Improving Outcome Through Developmentally Friendly Interventions

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Background: Developmentally friendly practices are proven to improve the neurodevelopmental outcome of preterm infants. Such interventions and practices are hard to implement in the highly medicalised neonatal intensive care environment; however, is achievable through continued education and sustained change of culture.

Purpose: We implemented a range of developmentally friendly interventions keeping in pace with the change of culture of the unit, which led to improved short and long-term outcome of infants over a period of time.

Methods: We introduced a package of developmentally supportive practices in stages over a period of time. These included environmental modification (optimisation of lighting, noise reduction, introduction of quiet period), sleep protection (minimising non-essential clinical contact, cluster care, use of incubator covers), appropriate positioning, pain management (using pain scores, breast-milk, swaddling, containment), breast-milk provision (skin-to-skin, expression, early suckling), early parental interaction (unlimited access, active care involvement) etc. This involved continued training and education of staff and changing policies and practices which needed strong clinical leadership.

Results: The drive started in 2008, taking momentum in 2009. We compared key clinical indicators during 2012–13 and 2017–18 to evaluate the short and long-term effect of such intervention. There was no significant change in the unit's clinical practice during this period. Compared to 2012–13, in 2017–18 total invasive ventilator days reduced from 373 days to 255 days, >90th centile LOS reduced from 4.9% to 3.31%, inpatient breastmilk days increased from 22.45% to 31.33%, breastmilk at discharge improved from 30.8% to 56.5% and breastfeeding at discharge for <33 weeks babies increased from 12% to 39.8%. At 2-year follow-up, 68% of babies born at <30 weeks had normal neurodevelopmental outcome.

Conclusion: Developmentally friendly practices contributed to a reduction in ventilator days and improvement in breast-milk provision for preterm babies in the short term. In the long-term such interventions contributed to normal neurodevelopmental outcomes in a significantly high number of preterm infants.

ID: 167/NEONATOLOGY NEO-4: 4
Oral Presentation
Maternal Omega Use in pregnancy decreases IL-6 levels in Breastmilk

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Background: Anti-inflammatory properties of long-chain omega three fatty acids, docosahexaenoic acid (DHA, 22:6n-3), and eicosapentaenoic acid (EPA, 20:5n-3) are very well known in humans. In our study, we assessed the interrelationships between breastmilk IL-6, Leptin, and breastmilk fatty acids, including PUFAs between women who used omega-3 and who did not, during pregnancy (Figure 1).

Material and Method: Our study was a prospective study in 67 (Group 1, n = 35, omega user; Group 2 n = 32, non-user) lactating women whose babies were born and were under follow up in Acibadem Bodrum Hospital between January 2017 and January 2019. Participants were robustly

phenotyped along with their infants at 4–12 weeks postpartum. IL-6, Leptin, breastmilk fatty acids, including n-3 and n-6 PUFAs, were evaluated in breastmilk.

Results: Group 1 had lower breastmilk IL-6 levels ($p = 0,0276$), and higher breastmilk EPA ($p < 0.001$) and DHA ($p < 0.001$) levels compared to Group. 2. Eicosapentaenoic acid and docosahexaenoic acid levels were significantly higher ($p < 0.001$ and $p < 0.001$) in Group 1. No interrelationships were observed between Leptin levels and omega use during pregnancy

Conclusion: Omega use during pregnancy was associated with the anti-inflammatory qualities of breastmilk. However, breastmilk Leptin levels were not associated with omega use during pregnancy and with breastmilk IL-6 levels, which may indicate that newborns' metabolism may be protected from pro-inflammatory properties of breastmilk. More studies are needed to assess the longitudinal effects of this impact

ID: 154/NEONATOLOGY NEO-4: 5

Oral Presentation

Women and Breastfed have Better Pass Rate in Newborn Hearing Screening

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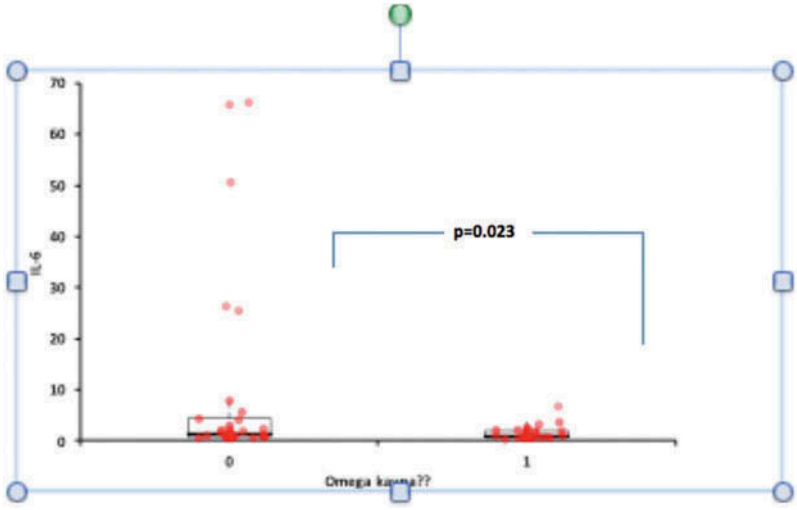
Introduction: Neonatal hearing screening by means of transient evoked otoacoustic emission (TEOAE) is widely accepted. Previous studies have related the influence of gender or feeding in the amplitude of TEOAE.

Purpose: The aim of this study was to investigate the relationship between gender or feeding and the TEOAE newborn hearing screening results.

Materials and methods: Data were retrospectively collected from healthy vaginally delivered newborns > 37 weeks and >2.5 Kg, at the maternity ward of F. Borja Hospital in Gandia (Spain). Gender or type of feeding was compared with the results of pass rate to TEOAE performed within the first 48 h of life.

Results: The study group included 12,871 newborns. In this group, chi-squared significant correlation ($p < 0.0001$) between being women (OR: 0.77) or breastfed (OR: 0.66) and TEOAE fail rates was observed. The reason for that must include unknown hormonal factors (gender) and possible

Figure 1.



clearance of middle ear or eustachian tube (feeding). Breastfeeding must be encouraged to get a better response to TEOAE and better pass rates to newborn hearing screening, at least on the first days of life.

Conclusion: Women and Breastfed newborns have better pass rates in newborn hearing screening with TEOAE. Another good reason to insist on breastfeeding.

ID: 162/NEONATOLOGY NEO-4: 6

Oral Presentation

Postnatal Outcome of Antenatally Diagnosed Urinary Tract Dilatation—A Retrospective Audit

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KK Women's and Children's Hospital, Singapore

Introduction: Urinary tract Dilatation (UTD) is one of the most common congenital anomalies with an occurrence rate of 0.6–1.3%. 50–80% of antenatally diagnosed UTD are isolated, transient upper urinary tract dilatations, which eventually resolves over time. However, the minority of them are associated with significant structural uropathies that require extensive investigation and surgical interventions.

Purpose: The aim of this study was to determine postnatal outcomes in neonates with antenatally diagnosed UTD delivered at the tertiary institution of South-East Asia. Materials and Methods: The study included infants with antenatal diagnosis of UTD after 20weeks of gestation born during the period from January 2016 to December 2018. Postnatally, UTD was classified as UTDP1 (low risk), UTDP2 (intermediate risk), and UTDP3 (high risk) based on the UTD classification system proposed by multidisciplinary consensus in 2015. UTDP2, UTDP3, and worsening UTDP1 underwent radio nucleotide isotope (MAG3) scan and micturating cystourethrogram (MCU) as per departmental protocol. Outcomes evaluated were the resolution of UTD, presence of structural urological anomalies, and need for surgical intervention. Out of the 132 patients enrolled in the study, 14 (10.6%) defaulted antenatal or postnatal long-term follow-up resulting in final data interpretation of 118 infants.

Results: The median gestational age of study population was 37 + 3weeks(32–40weeks) with a median birth weight of 3120g (1594–4166 g). There were 81(68.6%) male infants with male to female ratio of 2.1:1. Based on postnatal scan results, 72 (61.1%) cases were classified as having UTDP1, 22 (18.6%) as UTDP2, 9 (7.6%) as UTDP3, whereas 15 (12.7%) infants had a normal postnatal scan. Of the abnormal scan, isolated dilatation of renal pelvis was noted in 77 (74.7%) infants, while it was associated with central or peripheral calyceal dilatation in 19 (18.5%) and ureteric dilatation in 7(6.8%). Bilateral dilatation of the urinary tract was present in 29 (28.1%) infants. Serial follow-up scan showed resolution of UTD in 49/72(68.1%) in UTDP1, 7/22 (31.8%) in UTDP2, and none in UTDP3 groups. 23/103 (22.3%) infants had persistent urinary tract dilatation without any structural abnormalities. Partial or complete pelvic ureteric junction obstruction was found in 13 cases, of which 10 (76.9%) were from intermediate and high-risk groups. Other structural uropathies seen in 11 (10.7%) cases includes vesicoureteric junction obstruction(2), vesicoureteric reflux(3), posterior urethral valve(1), duplex kidney(2), horseshoe kidney(1), multicystic dysplastic kidney(1) and obstructed ureterocele(1). 9(8.7%) infants needed surgical intervention for their structural urological anomalies (Table 1).

Conclusion: This study provides valuable data on postnatal follow-up in infants with UTD. The audit concludes that there is a higher rate of resolution of UTDP1, whereas UTDP2/P3 demonstrated a greater association with urological pathologies requiring a further postnatal evaluation and surgical treatment.

ID: 163/NEONATOLOGY NEO-4: 7

Oral Presentation

How important is a clinical examination in the detection of Developmental Hip Dysplasia? Experience from an English Hospital

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[1]Basildon & Thurrock University Hospital NHS Foundation Trust, United Kingdom; [2]Southend University Hospital NHS Foundation Trust

Aim: Developmental dysplasia of the hip (DDH) is a common and preventable cause of childhood disability. Known risk factors include first degree relative with DDH, structural foot abnormality, breech presentation, oligohydramnios, multiple pregnancies, neuromuscular disorders, and birth weight more than 5Kg. We wanted to compare in a busy postnatal ward, whether a risk-factor based approach along with hip ultrasonography replace a clinical examination by trained doctors and midwives. We also retrospectively investigated three different approaches to predict the likelihood of radiological abnormality and treatment need in DDH to identify which method fares best and help us in parent counselling before hip ultrasonography; (1) Only Risk factor (RF) based approach (2) Only clinical examination by Barlow's and Ortolani's test (3) Risk factor and clinical examination combined

Methods: A Retrospective cohort study of 204 babies born over a period of 6 months (from October 2017 to March 2018) with risk factors for the development of DDH and/or abnormal clinical hip examination was performed in a Hospital in the United Kingdom. The data collected from the Neonatal and Infant Physical examination (NIPE) electronic platform were separated into three different groups (as described above) with the radiological assessment and outcome measurement. Electronic database records were thoroughly scrutinised for outcome and follow-up records.

Results: A total of 204 infants with positive risk factors with or without abnormal clinical examination were identified. Twenty-six did not attend the hip ultrasonography appointment. Remaining 178 babies are divided into three groups. In Group 1(n = 155; risk-factor positive but clinical examination normal), 139 (89.7%) had normal hip ultrasound, 16 (10.3%) had abnormal hip ultrasound, only 3 (1.9%) needed pelvic harness. In group2 (n = 20, risk factor negative but abnormal clinical examination), 14(70%) had a normal hip ultrasound, and 6(30%) had an abnormal ultrasound. In this group, only 1(5%) needed treatment, remaining5 (25%) discharged after repeat scan normalisation. In

Table 1. Postnatal outcome of antenatally diagnosed UTD

Postnatal diagnosis	Severity of UTD			Total
	UTDP1 n = 72	UTDP2 n = 22	UTDP3 n = 9	n = 103
Resolution of UTD on serial scans (APRPD < 10mm, normal urinary tract appearance)	49	7	0	56 (54.4%)
Persistent UTD on serial scans (APRPD >10mm)	18	5	0	23 (22.3%)
Partial or complete PUJO	3	6	4	13
VUJO	0	1	1	2
VUR	0	1	2	3
PUV	0	0	1	1
Duplex kidney	1	1	0	2
Horseshoe kidney	0	1	0	1
MCDK	1	0	0	1
Obstructed ureterocele	0	0	1	1

UTD—Urinary Tract Dilatation; UTDP1—APRPD 10–15mm or central calyceal dilatation; UTDP2—APRPD ≥15 mm, peripheral calyceal dilatation or abnormal ureter; UTDP3—APRPD ≥15 mm, peripheral calyceal dilatation, abnormal ureter, bladder or renal parenchymal appearance; APRPD—Anterio-Posterior Renal Pelvis Diameter; PUJO—Pelvi-Ureteric Junction Obstruction; VUJO—Vesico-Ureteric Junction Obstruction; VUR—Vesico-Ureteric Reflux; PUV—Posterior Urethral Valve; MCDK—Multi-Cystic Dysplastic Kidney

group 3 (n = 3, risk factor positive and clinical examination abnormal)-1 had a normal hip scan, and 2 (67%) had an abnormal scan and both needed operative intervention (Figure 1).

Conclusion: Our study confirms that the absence of risk factor is no guarantee for a normal hip, and a thorough hip examination is mandatory. Risk of ultrasonography abnormality is 3 times more in risk factor negative with abnormal clinical hip examination compared to those with risk factor positive but normal clinical hip examination. However, those with positive risk factors which are found to have an abnormal clinical examination are at the highest risk of ultrasound abnormalities and highest need for corrective treatment. This can be used in counselling parents. Moreover, in many areas of the world, the availability of hip ultrasonography and specialised treatment facilities for DDH are limited. This study also provides supportive evidence that risk factor-based approach, along with a thorough clinical examination (with appropriate training of the relevant professionals-doctors and midwives), can be used for targeted investigation and management in resource-restricted countries. Our study has limitations as the number of abnormal ultrasounds and the number of children requiring correcting measures are relatively less. A much larger study is necessary to confirm our finding.

ID: 114/NEONATOLOGY NEO-4: 8

Oral Presentation

Antimicrobial Stewardship: Fast-tracking flow chart for well babies

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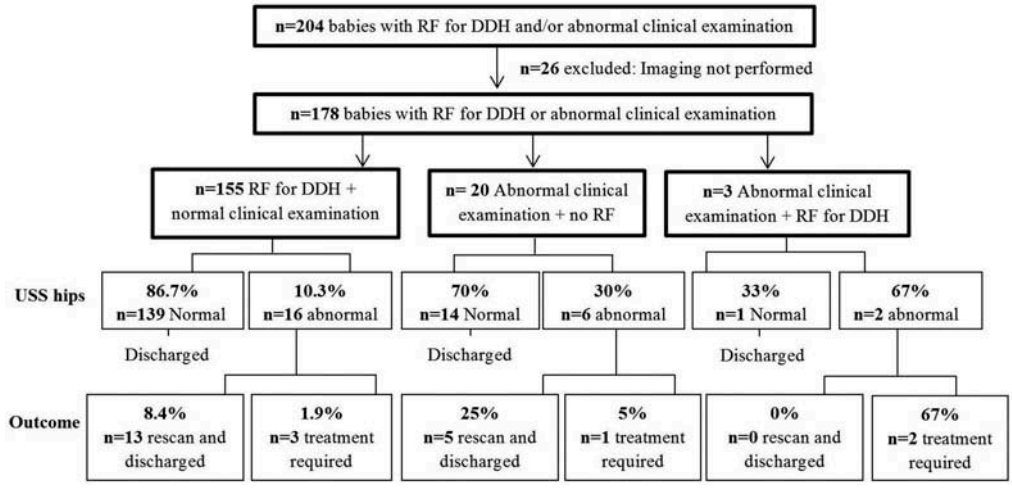
Neonatal Unit, University Hospital Crosshouse, NHS Ayrshire and Arran, United Kingdom

Background: Early-onset neonatal sepsis (EONS) is a significant cause of mortality and morbidity in newborn babies. It is managed as per NICE guidelines in our unit as in any other unit in the UK. It is equally as important to keep antibiotic exposure to a minimum by de-escalating therapy where infection has not been proven. Due to a 48-h blood culture reporting system, there is a culture of reluctance to stop antibiotics before the blood culture report when there is clear evidence of no infection in well babies started on antibiotics in view of maternal risk factors for EONS.

Methods: A flow chart (Figure 1) was devised by consulting neonatal team members and the microbiology team based on NICE guidelines. This was displayed in all clinical areas, disseminated to all neonatal team members via email and reminded during handover meetings. We compared two time periods, before and following the development of flow chart. We evaluated the number of doses of antibiotics received by babies in each cohort.

Results: 100% of all clinically well newborns started on antibiotics for maternal risk factors for EONS remained clinically well with normal observations, and blood cultures showed no growth at

Figure 1.



48h. There was a 39% reduction in the number of doses of benzylpenicillin administered to these babies after the introduction of the flow chart. The number of doses of gentamicin was the same in both cycles reflecting our unit practice to stop gentamicin as soon as it is evident that there is no signs of infection taking into account its potential ototoxicity, nephrotoxicity and higher chances for drug calculation errors (Figure 1).

Conclusion: A simple flow chart incorporating serial C reactive protein measurement and ensuring no blood culture growth in the first 24h of incubation can safely reduce the antimicrobial exposure to well babies started on antibiotics due to maternal risk factors for EONS.

NEUROLOGY NEU-3

ID: 197/NEUROLOGY NEU-3: 1

Oral Presentation

Acute Myelitis on an 18-Month-Old Child: A Diagnosis and Management Challenge

Costa, Maria Soto-Maior[1]; Silva, Rita[2]; Pereira, Gabriela[3]; Brito, Maria João[1]

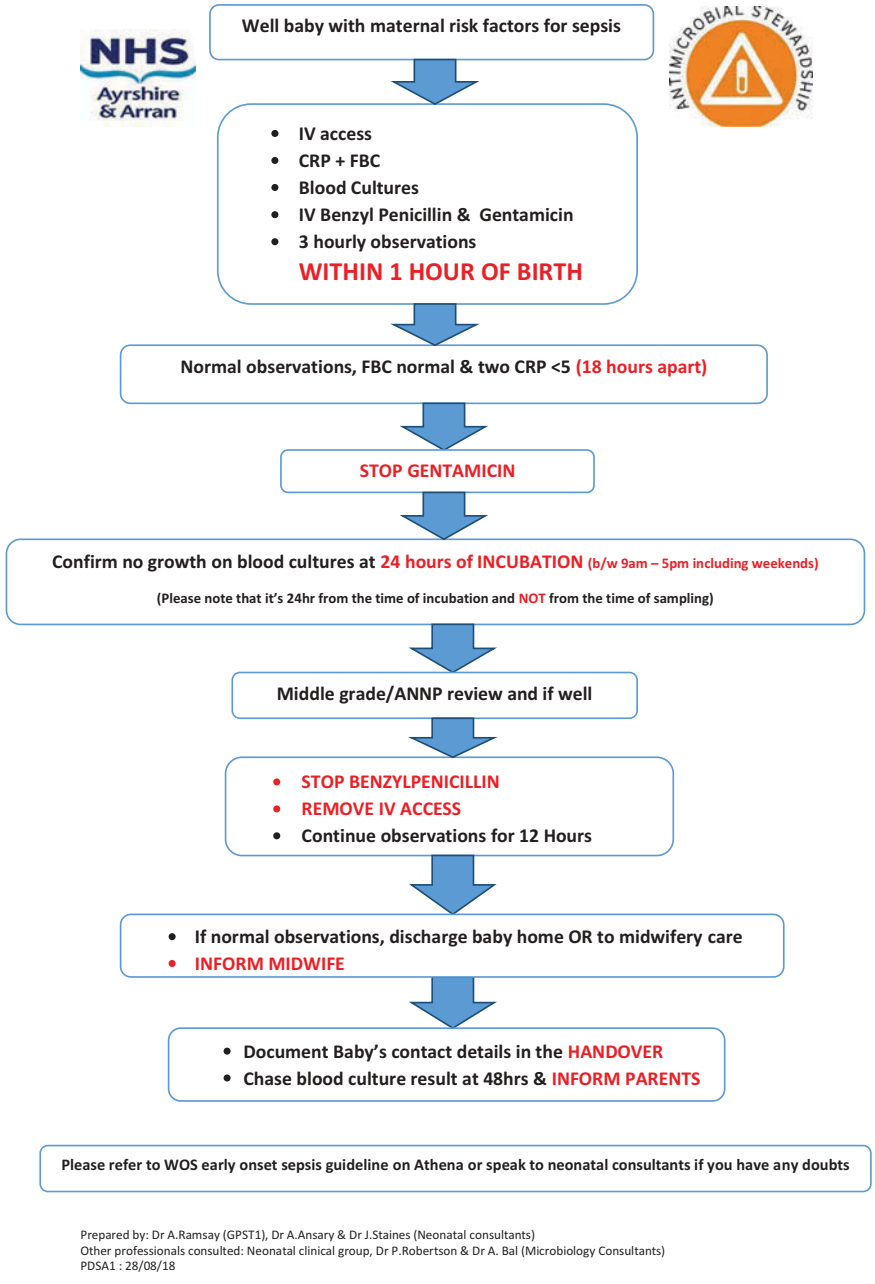
[1]Pediatric Infectious Diseases Unit, Hospital Dona Estefânia—CHULC, Lisbon, Portugal; [2]Pediatric Neurology Unit, Hospital Dona Estefânia—CHULC, Lisbon, Portugal; [3]Pediatric Intensive Care Unit, Hospital Dona Estefânia—CHULC, Lisbon, Portugal

Introduction: Acute flaccid myelitis (AFM) is a rare and recently described condition characterized by rapid progressive asymmetric weakness of the limbs, together with grey matter spinal cord lesions on magnetic resonance imaging (MRI). Recent outbreaks are predominantly associated with enterovirus D68, but others agents may be implicated.

Case Description: A previously healthy 18-months-old girl presented with 5 days of progressive lethargy and asymmetric weakness of the lower limbs with constipation and urinary retention. She had a high fever, cough, and vomiting—previous history of hand-foot-and-mouth disease 6 weeks earlier. Neurologic exam revealed global hypotonia, as she could not hold her head completely or sit without support, with diminished strength of the lower limbs, especially on the right (score 3/5), hyporeflexia, and equivocal plantar responses. Spinal MRI showed cervical and brainstem lesions suggestive of myelitis and rhombencephalitis. Cerebrospinal fluid revealed pleocytosis 20.8/μL, with normal protein levels. She was admitted to the Pediatric Intensive Care Unit and started ceftriaxone, acyclovir, immunoglobulin 1g/kg for 2 days, and methylprednisolone 30mg/kg/day for 5 days. Despite being negative in the cerebrospinal fluid, PCR for enterovirus was positive in respiratory secretions and stool. The remaining laboratory work was negative, including anti-aquaporin 4 and anti-MOG antibodies. Cerebrospinal fluid was negative for oligoclonal bands. There was no evidence of intrathecal synthesis. The child remained with spontaneous ventilation throughout the entire hospitalisation, rapidly recovered from bowel and urinary dysfunction, and presented stable. She underwent physical rehabilitation and feeding training, with gradual improvement of the motor manifestations until discharge. Six weeks after discharge, the girl showed some difficulty to stand up without using the upper limbs, but otherwise with a normal neurologic examination. Cell culture of enterovirus in stool was performed for viral identification.

Conclusion: There is no consensus about the management of AFM; therefore, most approaches are based on case reports and expert opinion. Aside from the empiric antibiotic and antiviral coverage, most adopted regimens include immunoglobulin, glucocorticoids, and plasma exchange, but none of these therapies has proven to be effective. It is essential to continue improving knowledge on AFM's pathophysiology in order to allow early recognition of the symptoms by clinicians and develop adequate treatment strategies.

Figure 1.


NHS Ayrshire & Arran
ANTIMICROBIAL STEWARDSHIP
Well baby with maternal risk factors for sepsis
IV access
CRP + FBC
Blood Cultures
IV Benzyl Penicillin & Gentamicin
3 hourly observations
WITHIN 1 HOUR OF BIRTH
Normal observations, FBC normal & two CRP <5 (18 hours apart)
STOP GENTAMICIN
Confirm no growth on blood cultures at 24 hours of INCUBATION (b/w 9am – 5pm including weekends)
(Please note that it's 24hr from the time of incubation and NOT from the time of sampling)
Middle grade/ANNP review and if well
STOP BENZYLPENICILLIN
REMOVE IV ACCESS
Continue observations for 12 Hours
If normal observations, discharge baby home OR to midwifery care
INFORM MIDWIFE
Document Baby's contact details in the HANDOVER
Chase blood culture result at 48hrs & INFORM PARENTS
Please refer to WOS early onset sepsis guideline on Athena or speak to neonatal consultants if you have any doubts
Prepared by: Dr A.Ramsay (GPST1), Dr A.Ansary & Dr J.Staines (Neonatal consultants)
Other professionals consulted: Neonatal clinical group, Dr P.Robertson & Dr A. Bal (Microbiology Consultants)
PDSA1 : 28/08/18

ID: 223/NEUROLOGY NEU-3: 2
Oral Presentation
Seizures in Children with Developmental Delay

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Introduction: Developmental delay is defined as a condition when a child does not reach one or more developmental milestones expected at a certain age. Delay in developmental domains (physical, language, cognitive, social, and emotional) may be caused by genetic defects, complications during pregnancy and birth, acquired brain injury, under-stimulated environments, and in many cases, the cause is unknown.

Aim: To present the frequency and type of seizures in children with developmental delay. Material and method: data for this retrospective study were collected from hospital electronic system. Standard statistical procedures were used for data analyses.

Results: Out of 42 children with developmental delay, 12 (28,57%) experienced seizures at least once. Eight children were born prematurely before 32 gestational week, 4 had a genetic defect, 14 had perinatal asphyxia, 1 child was with a neurological deficit after severe meningitis, and in 15 children the cause was unknown.8 children had generalized seizures, 3 had partial seizures, and 1 child had more than one type of seizures.

Conclusion: seizures are common in children with developmental delay. Their therapy and prognosis depend on the cause of developmental delay. Genetic diagnosis is very important for complete seizures control.

ID: 134/NEUROLOGY NEU-3: 3
Oral Presentation
Otogenic Cerebral Sinovenous Thrombosis in Children: A Rare But Notable Entity

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[1]Meyer Children Hospital, Pediatric Ward, Florence Italy; [2]Meyer Children Hospital, Neurosensorial Ward, Florence Italy

Purpose: Cerebral sinovenous thrombosis (CSVT) is a relatively rare but potentially life-threatening complication of otomastoiditis. Clinical and radiological features, the timing of diagnosis, treatment, and sequelae in a small series of pediatric patients are reported.

Methods: a retrospective analysis was conducted in an Italian tertiary care Children's Hospital from January 2014 to June 2019. Seven children (5 males, 2 females; mean age 6 years, 1–13 years) was diagnosed with otogenic CSVT confirmed by neuroimaging. Results: Fever and otalgia were the most frequent clinical manifestations present in all patients. None had classical external signs of mastoiditis. All patients showed neurological findings (3 altered consciousness levels, 2 headache, 1 nerve palsy, 1 dizziness). The mean time from onset of symptoms to the first neuroimaging was 10 days (2–26 days). CT scan was the most common initial neuroimaging; however, it was not diagnostic in 2 cases. Venography-MRI was performed in all cases after 12 days (4–26 days) from the clinical onset leading to a conclusive diagnosis. CSVT affected the right side in 5 cases. The prevalent sites were transverse and sigmoid sinuses (5/7). No brain parenchymal lesions were identified. Mastoid involvement was detected in all cases. Fundoscopy was performed within a mean time of 3 days (1–7 days): papilledema was observed in more than half of the patients (5/7) with residual-impaired visual acuity in 3 cases. Anticoagulation with low molecular weight heparin was immediately started and continued for at least 3 months in all patients. Acetazolamide was administered in three patients. Follow up neuroimaging showed sinous recanalization after a mean time of 6 months (2–11 months). Five patients underwent to

mastoidectomy (3/7) and ventriculoperitoneal shunting (2/7). Patients were discharged after 26 days (15–37 days).

Conclusions: In the management of otogenic CSVT, the mainstay goal is the prompt diagnosis to reduce the risk of acute and long-term complications, especially ophthalmologic symptoms. Despite the little sample, our data suggest the need for an interdisciplinary approach to standardize diagnostic and therapeutic protocols and to avoid diagnostic delay. We will provide an extensive review of the literature and a comparison with our cohort of patients.

ID: 227/NEUROLOGY NEU-3: 4

Oral Presentation

Cerebral Venous Thrombosis in Children—A 16-Year Analysis in a Portuguese Hospital

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Introduction: Cerebral venous thrombosis (CVT) is a rare cerebrovascular disease that can be life-threatening, especially in children. The incidence varies from 0.4 to 0.7 per 100,000 children per year. The most common symptoms at presentation are headache, seizures, and vomiting. Infection appears to be the most common condition associated with CVT in children.

Purpose: To describe the clinical presentation, imaging findings, predictor and prothrombotic factors, treatment, and outcome of children with CVT.

Methods: Retrospective observational and analytical study of pediatric patients in a Portuguese hospital with the diagnosis of cerebral venous thrombosis from 2003 to 2019.Results: Ten children were included (50% male). Mean age was 5,5 years (minimum 1 day, maximum 16 years). The most frequent symptoms were vomiting (40%), headache (30%), and seizures (20%). One patient presented with hemiparesis, and one had nystagmus. Two patients did not have any neurologic symptoms, and the radiological diagnosis was made during the etiological investigation of the infection. Infection was the triggering factor in 60% of cases (two cases of mastoiditis, one case of a cervical abscess, and three cases of meningitis), followed by nephrotic syndrome (20%). Neuroimaging studies were available for review in 9/10 patients. The diagnosis of CTV was made on MRI/MRV in 5/9 patients and on CT/CTV in the remainder (two performed subsequently MRI/MRV). Transverse sinus was the most affected (70%), followed by sigmoid sinus (40%). In 60% of cases, multiple sinuses were involved. Three cases had superficial cerebral cortical veins thrombosis. There was one case of deep venous system thrombosis. Two patients showed signs of venous hemorrhagic thrombosis/subarachnoid hemorrhage. Anticoagulant therapy was initiated in 80% of cases with subcutaneous low molecular weight heparin (LMWH). The two neonates were not anticoagulated and treated only with antibiotics. Associated prothrombotic factors were investigated in 70% of patients: three had mutations of MTHFR and PAI-1 genes, and two had mutations of MTHFR and prothrombin genes. All had normal homocysteine levels. No deaths were reported, but 30% had sequelae (tetraparesis, epilepsy, and global development delay). No cases of recurrence.

Conclusion: The results of this study were similar to those currently found in the literature. Brain-MRI/MRV is the preferred imaging method for diagnosis in children, and it is more frequent to have multiple sinuses or only superficial cerebral veins involved. Anticoagulation treatment with LMWH is recommended and important to reduce the mortality rate. CST is frequently associated with central nervous system infections in children, which can be the cause for high morbidity and poor outcomes.

ID: 279/NEUROLOGY NEU-3: 5
Oral Presentation
Anti-NMDA Receptor Encephalitis: Challenges in Diagnosis and Treatment

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Introduction: Anti-N-methyl-D-aspartate receptor (NMDAR) encephalitis is an autoimmune disorder that is being recognized more often, especially in children and young adults. However, challenges remain in early diagnosis and treatment.

Case description: Previously healthy 11-year-old female presented with tonic-clonic seizure, followed by focal seizures, was controlled with intravenous diazepam and levetiracetam. Initial CSF analysis showed lymphocytic pleocytosis (WBC 22cells/mm); electroencephalogram and brain imaging (CT and MRI) were normal. Aciclovir and ceftriaxone were started empirically. After 5 days, she began to show asymmetric choreatic movements predominantly at the distal segment of the right upper limb. Further investigations revealed evidence of past streptococcal infection (anti-streptolysin O 1220UI/mL; ADNase B 737U/mL), but the rheumatic fever was excluded. PCR in respiratory secretions was positive for adenovirus. Four days later were noticed acute behavioral changes, psychomotor agitation, and disfluency. A second lumbar puncture was performed. Anti-NMDAR autoantibodies were positive in CSF (titer 4, reference <1). Intrathecal synthesis and oligoclonal bands were negative. She received intravenous immunoglobulin (1g/kg/day) for 2 days without clinical improvement. Pulses of methylprednisolone were started, followed by oral prednisolone. Still, her cognitive deficits were disabling, so steroids were combined with rituximab for 4 weeks and intravenous immunoglobulin every 2 weeks for five doses, then monthly for three doses, following the International Inflammatory Brain Disease Outcome Study treatment protocol. Nevertheless, psychomotor agitation persisted, associated with extreme emotional lability, obsessive-compulsive behaviors, and insomnia. Child and adolescent psychiatrist collaboration was required to therapeutic optimization—quetiapine, lorazepam, valproic acid, and olanzapine were prescribed. To reduce the risk of relapses started monthly injections of cyclophosphamide. The patient was discharged after 83 days, keeping a multidisciplinary follow-up. After 6 months, the patient's behavior had improved, presenting without changes in the neurologic exam or memory deficits.

Conclusion: The differential diagnosis of autoimmune and infectious encephalitis is notoriously difficult. Anti-NMDAR encephalitis is a potentially lethal condition; early identification and treatment is crucial. In the absence of prospective and randomized data, treatment decisions should be individualized and take into consideration patient age, the presence or absence of a tumor, and symptom severity. Future studies investigating both pharmacologic approaches and non-pharmacologic interventions are critical in improving patient care and outcomes.

ID: 253/NEUROLOGY NEU-3: 6
Oral Presentation
Influence of Gender on Attention-Deficit/Hyperactivity Disorder in Children

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[1]Hospital CHVNG/E; [2]Hospital CHUC; [3]Hospital CHEDV

Introduction: The scientific literature on attention-deficit hyperactivity disorder (ADHD) is almost exclusively based on boys. The substantial discrepancy in the male-to-female ratio between clinical referred and community samples of children with ADHD suggests that gender differences may be operant in the phenotypic expression of ADHD.

Purpose: Evaluate the impact of gender on the clinical features of ADHD in a group of children followed in the paediatric development consult.

Materials and Methods: This is a retrospective study of patients evaluated in the development consultation in a Portuguese Hospital diagnosed with ADHD between 2009 and 2018. Clinical files were consulted in order to evaluate the age of diagnostic, the subtype diagnosed, comorbid psychopathology, social dysfunction, school performance, treatment, among other factors. Statistical analysis made with SPSS v23.

Results: A total of 399 patients were obtained, 72.2% male gender. Over the years, the incidence was stable. The median age at diagnosis was 8 years for both genders. Most children are sent by general practitioners (55.9%). The combined type was the most prevalent type for both genders; despite this, boys have 1.8x the odd of a girl to be diagnosed with the combined type, and girls have 2x the odd to be diagnosed as inattentive. Girls with ADHD were at significantly lower risk for behaviour disorders. Conduct disorder, oppositional defiant disorder are more frequently identified in boys. We failed to identify any statistically significant differences according to gender in developmental disorders such as learning specific disability, intellectual development disturbance, and language delay as well as support required, as school or psychological aid, for example. Ninety-eight percent of cases were treated with MPH; 24 patients were also under risperidone. Only four patients had no response to MPH and were submitted to atomoxetine. Currently, 57.1% maintain consultation; 18% lost follow up, with more significance in girls (OR 2; CI 0.3 to 0.8). Lost of follow up was not related to family dysfunction or psychiatric pathology (p = 0.5) in family history (Table 1).

Conclusion: Fewer girls than boys are diagnosed with ADHD, probably because they frequently present as the inattentive subtype associated with the lower frequency of externalizing or disruptive behaviour. This could result in gender referral and diagnostic bias, unfavourable to girls, considering that they, generally, have a similar pattern of developmental impairment (as well as support aid as an example) and receive similar treatment.

ID: 166/NEUROLOGY NEU-3: 7
Oral Presentation
Fidgety Movements in Prader-Willi Syndrome: A Case Report

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Nuh Naci Yazgan University, Turkey

Introduction: General Movements (GMs) are the spontaneous movement patterns present in foetuses and infants. GMs are usually called writhing movements until the first 2-months post-term age; afterwards character of GMs change from the writhing character to the fidgety pattern and called fidgety movements (FMs) between 2 and 4–5 months post-term age. The GMs Assessment (GMA) developed by Heinz Prechtl, especially during FMs period, can be employed to help identify infants with neurodevelopmental problems. The FMs varies with age in infants: continual FMs, intermittent FMs, and sporadic FMs. Prader-Willi syndrome (PWS) is a genetic disorder characterized by significant hypotonia in infancy, followed in childhood or adolescent complex physical, behavioural, and intellectual difficulties.

Purpose: The purpose of this case report is to investigate FMs and present GMA results in an infant with PWS.

Case report: A corrected age of 2-month-old girl with PWS admitted to the physiotherapy unit. She was born prematurely at 36 weeks' gestation with the birth weight 2290 g. She had a history of neonatal intensive care unit for 24 days due to respiratory distress, and tests for metabolic diseases and spinal muscular atrophy were negative. The case was diagnosed as PWS at corrected age of 1 month. The GMA was performed via video-recordings at 14 weeks post-term age. The video-recording period was approximately 20 min in the FMs period, excluding crying or fussing durations when the

Table 1. Influence of gender on Attention-Deficit/Hyperactivity Disorder subtype and comorbidities

	Boys (N = 288)		Girls (N = 111)		Interaction of gender on PHDA		
	N	%	N	%	Odds ratio	95% CI	p
Combined Subtype	198	68.8	61	55	1.8	0.4 to 0.9	-
Inattentive Subtype	80	27.8	49	44	0.5	1.3 to 3.3	-
Hyperactive Subtype	8	2.8	0	0	-	-	0.08
Development comorbidities	151	52.4	58	52	-	-	1
Learning specific disability	47	16.3	19	17	-	-	0.8
Intellectual development disturbance	88	30.6	39	35	-	-	0.4
Language development delay	41	14	14	12.7	-	-	0.6
Emotional comorbidities	116	40	29	26	1.9	1.2 to 3.1	-
Externalizing	75	26	13	11.8	2.7	0.2 to 0.7	-
Internalizing	16	5.6	10	9	-	-	0.210

infant was in a supine position. As a result of the evaluation, FMs were present in our case, and intermittent FMs were observed, which normally occur in 9–21 weeks post-term.

Conclusion: The GMA can help to determine infants with neurodevelopmental problems, and FMs have a high predictive value. It was shown in the literature that infants with normal FMs are very likely to show a neurologically normal development, and infants with absent FMs are highly predictive of later neurological deficits. Even though GMs in genetic disorders have not been fully explained, but there are studies to investigate GMs in some genetic diseases such as Down syndrome, Smith-Magenis syndrome, or DiGeorge syndrome. In this report, the FMs were investigated in a case with PWS, and consequently, FMs were observed normally. Unfortunately, there is only one video-recording for GMS, and long-term follow-up results of the present case are not available. The GMA can be used as a prognostic tool to identify infants at risk for neurodevelopmental disorders, and studies are needed in genetic diseases.

ID: 145/NEUROLOGY NEU-3: 8
Oral Presentation
Community-Based Child Development Centers

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Introduction: The social and economic impact of early detection and early intervention are well known. Studies have shown that early detection of developmental delays and/or developmental difficulties and early intervention have a significant impact, the effect on development and learning abilities. Reducing the impact of risk factors such as genetic, biological, environmental and emotional on the child's development, and strengthening the protective factors that contribute to resilience, and to promote the conditions necessary for healthy development are the interventions in the child development community centers. In 2009, a National program for children and youth at risk' 360 'was established. The program witch put a special focus on investment in ages birth to 6, is a partnership of five government Ministries whose goal is to reduce the number of children at risk and to reduce risk factors among children. The aim to change the way in which localities plan and deliver

services to children at risk and their families by furthering data-driven joint decision-making at the local level. Three hundred and sixty enabled the establishment of community-based child development centers in 28 social or geographic peripheries municipalities.

Purpose: The purpose of this work is to examine the relationship between the services given in child developmental community centers by examining seven life dimensions.

Methods: A questionnaire based on the International Convention of the Rights of the Child and referring to seven aspects of life was filled by a therapist at two-time point in the centers. The data were collected between 1/9/17-31/8/18.Data on 3028 children 340 ages birth-3, 1596 ages 3–6, and 1048 ages 6–9. Sixty-six percent male and 34% female were collected.

Results: Early intervention by therapist in the child development community centers is related to reducing developmental delays at all age groups, improve academic achievements and participation in learning at 3–9 age group, improve emotional difficulties at birth-6 age group

Conclusions: Despite research limitations, data shows that treatment in Community-based child development centers reduces developmental difficulties. The treatment also improve parents ability to enrich their children and the child ability to participate in the kindergarten at the age 3–6, and that the improvement of emotional difficulties is higher at 0–3 than 3–6 age group, further research is needed to assess child community-based center compare to non-community developmental centers, and how to deliver early detection and early intervention

Poster Viewing 1

ID: 136/Poster Viewing 1: 1

Poster Presentation

Adolescence and Medically Unexplained Symptoms: A Retrospective Cases Analysis of an Italian Cohort

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Background: Medically unexplained symptoms (MUS) are a rising entity, particularly among adolescents. Many pediatricians have inadequate knowledge of MUS and its approach, evaluation, and management. PURPOSE: To highlight the relevance of MUS in clinical practice, describing epidemiological and clinical data and risk factors of our cohort patients, and quantifying the amount of medical interventions.

Materials and Methods: Adolescents admitted to Paediatric Ward of Meyer Children's Hospital between January 2015 and December 2018, with a final diagnosis of MUS, were selected. Medical charts were retrospectively reviewed: age, gender, season of admission, clinical presentations, diagnostic procedures, medical interventions, and anamnestic data were collected.

Results: 53 out of 662 total adolescents admitted over the study period (35 females, 18 males, F: M = 2:1) were diagnosed with MUS (prevalence 8%). The mean age was 12.54 yrs ± 1.78 SD (range 10–17). Most of the admissions were in winter (46%) and spring (33.3%). Clinical presentation was heterogeneous with symptoms mostly related to the musculoskeletal (72%), neurological (57%), or gastrointestinal system (51%). Most of them (70%) experienced symptoms involving different apparatuses, often simultaneously or through childhood up to adolescence. The musculoskeletal complaints were arthralgia (59%), especially of the lower limbs, with altered gait in 42% cases; a complete inability/refuse to walk was reported in 8 of them; low back pain was registered in 13%. Diffuse myalgia, like fibromyalgia, was reported in 5 girls (9%). The neurological complaints included headache (53%), dizziness (11%), and syncope (7.4%), either alone and/or variously associated. Gastrointestinal manifestations included abdominal pain (48%), emesis (13%), and constipation (20%). Fever, weakness, difficulty breathing, chest pain, cough, laryngeal stridor,

photophobia, polyuria/polydipsia were reported, too. Twenty-one (39%) adolescents experienced sleep problems (difficulty falling asleep or frequent night-time awakenings). The mean hospital stay was of 7.6 days (± 4.78 SD), ranging from 2 to 27 days. Moreover, 22 patients (41%) had more than one ER visit (range 2–9 visits/year), and 28 cases (52%) were admitted to hospital at least twice. Numerous instrumental exams were performed: MRI and/or CT was done in 73%. Almost all the patients (94%) had many specialized visits (neurologist, cardiologist, rheumatologist, and gastroenterologist). Finally, psychological consultations were performed in 42 patients (79%), whereas psychiatric evaluation in 10 (19%). In regard to psychiatric comorbidity, 12 adolescents (22%) presented anxiety, 10 had relationship problems, 4 had depression, 4 had somatoform disorders and 3 conversion symptoms. A stressful familial event (parents' conflicts or divorce, severe illness or death, moving house, or country) were found in 25%. Scholastic absenteeism was frequent (39%); the scholastic performance resulted low in 18 patients (33%), whereas 3 girls with the perfectionist tract had excellent results; absence of friends was reported in 10% and bulling in 7.5%.

Conclusions: MUS represents a significant entity among adolescents, particularly in females. Clinical appearance is extremely heterogeneous, with musculoskeletal and neurological symptoms being the most frequently referred. The influence of family, school, and peer-group on the pathogenesis of MUS has been confirmed. Medical interventions, including ER visits, hospitalizations, diagnostic exams, specialized consultations proved to be extremely high.

ID: 221/Poster Viewing 1: 2

Poster Presentation

Discussing End-of-Life Issues in an Adolescent with a Terminal Illness

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Introduction: Adolescent palliative care is especially challenging because of complex developmental, social, clinical, and legal concerns. In adolescents with life-limiting illnesses, developmental tasks of normal adolescence such as developing an awareness of self and others, gaining self-confidence, independence, and establishing one's own identity are halted. The difficulty lies in balancing the desire to gain independence while experiencing greater dependence on others as their disease progress.

Purpose: This review discusses the multi-faceted barriers in discussion of end-of-life care with the adolescent and strategies to optimize this discussions. Case description: This case is about a wheelchair-bound 14-year-old boy with Duchenne's Muscular Dystrophy (DMD), and challenges faced discussing end-of-life issues. His condition was complicated by restrictive lung disease requiring nocturnal Bilevel Positive Airway Pressure (BiPAP) and dilated cardiomyopathy with severely reduced biventricular systolic function. His parents did not want the patient's deteriorating condition to be divulged to him, and he struggled to make sense of his medical experiences. This resulted in non-compliance to medication, fluid restriction, and nocturnal use of BIPAP, exacerbating a vicious circle of admissions for fluid overload due to symptomatic congestive cardiac failure. He had difficulty coming to terms with his illness, felt like a burden to his parents, struggled with frequent nightmares about death, and would wake up in a state of panic. Advanced Care Planning (ACP) with the family was challenging due to parental resistance.

Results/Discussion: We reviewed the literature and identified challenges in discussing end-of-life issues with the adolescent. Perspectives from main stakeholders such as the parents, the adolescent, and the medical professionals were evaluated. Key strategies for taking on the end-of-life discussion with the adolescent are as follows: (1) Employing a multidisciplinary team approach for supporting decision-making by dying adolescent, including the physician, nurse, psychologist, social worker, and child life specialist; (2) overcoming parental barriers through physician truth-telling and effective communication, and breaking-down of parental self-defense mechanisms

through psychosocial support and pediatric palliative care teams; (3) engaging the adolescent and determining their functional competence and decision-making ability; and (4) integrating truth-telling with modern bioethical principles.

Conclusion: Our clinical case exemplifies the importance of involving the adolescent in the end-of-life discussion. Early involvement establishes trust between the medical team and the family, whilst providing control and independence as the adolescent's needs are incorporated into the treatment plan. As physicians, the aim is to engage the above strategies together with the multi-disciplinary team, preserve opportunities for the adolescent and family to create meaningful legacies, say goodbye to each other, or find spiritual peace in end-of-life care.

ID: 240/Poster Viewing 1: 3

Poster Presentation

Evaluating App-based Peer-support for Parents of Adolescents with Chronic Conditions: What do Parents Really Need?

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Purpose: To evaluate the CO@CH Mobile App, a video-sharing peer-support platform for parents of adolescents with chronic conditions (CC).

Methods: Qualitative methods were used to evaluate CO@CH by interviewing 23 parents (19 mothers) of CC adolescents. Were included parents who: had used CO@CH (N = 4), initially enrolled but never used it (N = 5), refused to participate (N = 1), did not know CO@CH (N = 7); and staff members of patient associations who did not know CO@CH and were parents of CC adolescents (N = 6). Interviews were audio-recorded and transcribed verbatim. Transcripts were open-coded, crosschecked, and analyzed thematically.

Results: Despite an overall consensus among all participants regarding the need for peer-support among parents, different opinions were reported about when support is needed the most: according to child's age (at diagnosis, during childhood, at adolescence) and to crisis versus calm periods. Participants gave many reasons and barriers for not using it; four being the most important. First, they "just want to live normally": this was explained in different ways such as when the condition is controlled, they want to "forget about it", "continue life", and not put priority on this when they can finally think of themselves. Second was the lack of available energy and time having already so much to deal with in caring for their child on top of usual work and daily life. Participating in the App was thus seen as yet another duty to undertake. Third was having "to deal with their own difficulties", "not wanting to add on others'" and "listen to others' problems". Similarly, they reported having to fight for so long for their child's health and stay optimistic, and they could not bear pessimism, described as a "survival instinct". Finally, they questioned the anonymous characteristic of the App, addressing strangers when posting videos, and the lack of direct communication with other parents. Positive characteristics of the App included the non-categorical approach to CCs as "in the end, it's the same for everyone"; the fact that it was online, making it usable despite a full agenda; and that it was technically simple to use.

Conclusion: Creating a community of practice through an App among parents living similar experiences did not have the expected success. This qualitative evaluation allows concluding that what many parents of CC adolescents need is to live normally despite such hard parenting. The type and timing of support that they should be offered throughout their lives should be individually defined.

Funding source. The Swiss National Science Foundation grant #PMPDP3_171252.

ID: 241/Poster Viewing 1: 4
Poster Presentation
Transition to Adult Care among Healthy Adolescents

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Background: Transition to adult care has been studied mainly among youths with chronic conditions (CC), and little is known about transition among healthy ones. The aim of this research was to assess whether the transition was discussed among healthy youths and the characteristics differentiating them.

Method: Data were drawn from the fourth wave of the GenerationFRee survey, a longitudinal study on the lifestyles of youths (15–24 years at baseline) in the canton of Fribourg, Switzerland. Participants (N = 1066) responding to the question "Did your pediatrician discuss with you how to follow your medical care once you would be too old to be in pediatrics?" were divided into two groups: Yes (YESgroup, N = 220, 20.6%, 54% females), No and I don't know/Can't remember (NO-IDKgroup; N = 846, 79.4%, 48% females). We first compared transition-discussion between healthy and CC youths (N = 166, 15.6%, 57% females). Subsequently, we compared the groups only among healthy youths on sociodemographic and health variables. Finally, we ran two regressions, including significant variables at the bivariate level, one with and one without CC youths, using the NO-IDKgroup as the reference category. Coefficients provided are odds ratios.

Results: CC youths were significantly more likely to have discussed transition (30.6%) than their healthy peers (18.8%). Among healthy youths, compared to those who did not discuss transition, those who did differed significantly in their family socioeconomic status (SES), perceived pubertal timing, and having a primary care provider (PCP). There were no differences in age, gender, perceived health status, emotional wellbeing, or consultation frequency. At the multivariate level, when those with a CC were not included, youths in the YESgroup were significantly more likely to report lower SES (2.68), advanced pubertal timing (1.74), and to have a PCP (2.0). When those with a CC were included, those in the YESgroup were significantly more likely to have a CC (1.74), a low SES (2.24), a PCP (1.93), and a trend to report an advanced pubertal timing (1.92).

Conclusion: Although with a low rate, the transition is still more often discussed among youths with CC. Not discussing the topic seems to be independent of age, gender, or perceived health status. However, why the discussion depends on pubertal timing and SES needs to be further studied. Our results are important because the main consequence is less chances of having a PCP. Transition needs to be addressed with all youths so that their health is appropriately and continuously taken care of.

ID: 243/Poster Viewing 1: 5
Poster Presentation
Social Jetlag, Screen Time and Night-time Texting among Adolescents

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Introduction: The frequent uses of electronic media among young people such as computers, television, mobile phones, game consoles are raising the debate that to what extent this might have an adverse effect on health. In the systematic reviewed paper of 67 scientific articles, 90% of them had claimed that screen time is adversely associated with sleep outcomes among adolescents. Recent studies suggest that one in five children and young adolescents have sleep difficulties, and this high prevalence requires public health concern.

Purpose: The inconsistency of sleeping time during weekdays and free days impacting on social and biological time is scientifically described as "social jetlag". The overall aim of this study is to

address the research question, whether there is an association of screen time and nighttime texting with social jetlag among adolescents aged 13 to 15 in Sweden.

Methods: This study has been conducted using the quantitative data from a larger research project (ISRCTN17006300) performed as a cross-sectional survey collected from all schools with grades 7 and 8 in four municipalities in southern Sweden. The sample consists of 1518 students (72.7% response rate), of which 50.7% were girls. Ages varied between 13 and 15 years (mean = 13.9, SD = 0.4).

Results: Social jetlag was defined as more than 2-h difference between bedtime and wake-up time during school days and weekends. The prevalence of social jetlag among this study population was 53.9% (n = 1425, 93.9%). In the multivariate binary logistic regression analysis after adjusting for age, sex, and economic status screen time ($p < .001$), texting at night ($p = .002$) was statistically significantly associated with social jetlag.

Conclusion: Irregular bedtime and wake-up habits during school days and weekends are associated with night-time texting and increased screen time. For future research, more focus should be given to find the causality and understand the magnitude of this problem while to develop appropriate public health message and intervention programs.

ID: 201/Poster Viewing 1: 6
Poster Presentation
Head Trauma in Teenagers—A 2-Year Retrospective Study

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Background: Head trauma is a very common event in childhood and adolescence. Its morbidity and mortality are variable. A well-known protocol is the one from the American Academy of Pediatrics, for children aged equal or greater than 2 years old.

Aim: To describe the cases of head trauma in adolescents in the years 2017 and 2018 observed in a Paediatric Emergency Department of a Secondary Health-Care Hospital.

Methods: Retrospective study from January 2017 to December 2018 (24 months). Social, demographic, epidemiological, and clinical data were evaluated.

Results: Between January 2017 and December 2018, there were 69 episodes of head trauma in adolescents, which represent about 20% of total cases. 2017 recorded the highest number of cases, with 43/69. The median age was 13.4 years, and 56.5% were male. The anatomic zones that were more commonly hit were the frontal bone (38%), followed by the occipital bone (25%). The average time between head injury and observation was 7.1h. Falls were the most common injury mechanism, with 57% of cases. Traffic accidents represented 9% of episodes (6/69). Eighty-three percent of them did not have the safety equipment required (helmets, seatbelts). As for the clinical features, 46/69 patients presented with local signs and symptoms, 8/69 had vomiting, 8/69 headache, and 7/69 had a loss of conscience. 2/69 cases were classified as major trauma, and 67/69 as minor head trauma. According to the protocol for minor head trauma by the American Academy of Pediatrics, 36/67 were considered of low risk, 22/69 medium risk, and 9/67 of high risk. From the total, 20/69 had a CT scan, and 20% of those had a brain injury. 3/69 were admitted, and 4/69 were transferred to a tertiary hospital. One patient died.

Discussion: Falls were the main injury mechanism. Traffic accidents represented about 10% of the episodes. Most of those patients did not have the safety equipment required, including the two cases of major head trauma. This enhances the importance of reinforcing prevention measures.

ID: 141/Poster Viewing 1: 7

Poster Presentation

Remission of Refractory Bowel Angina in Henoch-Schölein Purpura After Immunoglobulin Intravenous. Case report

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Purpose: The course of Henoch-Schönlein purpura (HSP) is usually benign and self-limited, and the treatment is supportive. Gastrointestinal involvement in HSP is common and may precede other symptoms, but it is usually self-limited. Severe abdominal symptoms, non-respondent to steroids, and leading to laparotomy is very rare.

Case Description: A previously healthy 4-year-old boy presented at the local level II hospital with abdominal pain and bilious vomits, without blood loss, petechiae, and severe arthralgia in the lower limbs. On the third day, he was transferred to a Level III pediatric hospital. As the severe abdominal pain did not remit with non-steroids analgesics or opioids, methylprednisolone was started (1mg/kg/day). On the 12th day on methylprednisolone, the severe abdominal symptoms suggested intermittent intestinal intussusception; the exploratory laparotomy revealed friable and thickened serosa at the terminal ilium. Symptoms persisted, with failure to reintroduce oral intake. On the 21st day of hospitalization, microscopic hematuria was detected, with subsequent onset of proteinuria, increasing up to the nephrotic range. On the 26th day of hospitalization, the upper digestive endoscopy revealed petechiae from the oropharynx to the duodenum. Oral polymeric diet improved the abdominal pain but was badly tolerated. After 27 days of in-hospital steroid therapy (methylprednisolone 1-mg/Kg/day), no control of the gastrointestinal symptoms was achieved. Intravenous immunoglobulin (2 g/kg/day) for 2 days provided complete remission of abdominal complaints and feeding tolerance after the first administration. Despite the resolution of the abdominal condition, he maintained the cutaneous and renal compromise. Renal biopsy performed after discharge confirmed HSP nephritis, and steroid therapy was restarted and maintained.

Conclusion: This case report suggests that in the face of HSP with severe abdominal symptoms, non-respondent to steroids, immunoglobulin is an option to control abdominal symptoms. However, renal involvement progressed in spite of aggressive therapy.

ID: 185/Poster Viewing 1: 8

Poster Presentation

State of Local Immunity in Adolescents with Gastroduodenal Pathology and Connective Tissue Disorders

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Introduction: Collagen deficiency in the mucous membrane of the gastrointestinal tract, which is typical for adolescents with Connective Tissue Disorders (CTD), plays an important role in the development of valve-sphincter insufficiency and, as a consequence, reflux. Additionally, it may impact the local mucosal immunity. A special role is given to the secretory immunoglobulin A (sIgA), which is a main protective factor of mucosa.

Purpose: This study aimed to evaluate the significance of collagen level content and the state of local immunity in the progression of gastroduodenal pathology in adolescents.

Material and methods: A total of 118 adolescents 11 to 18 years of age with inflammatory-destructive diseases of the upper gastrointestinal tract were studied. Sixty-seven children with traits of CTD were included in the study group, 51 adolescents without CTD—in the

comparison group. The control group consisted of 30 healthy peers. The traits of the CTD were determined, relying on the Ghent criteria. The state of local immunity was assessed by sIgA level in the saliva with enzyme-linked immunosorbent assay (ELISA). Collagens content in the lamina propria of gastric-duodenum mucosa was evaluated by immunohistochemistry using monoclonal antibodies of collagen 1, 3, 4, 5 types. Complex evaluation of local immunity and connective tissue parameters was carried out using the system correlation analysis.

Results: Morphological peculiarities in adolescents with CTD are represented by high frequency of gastroesophageal and gastroduodenal reflux (88%, $p < 0.001$), reflux-gastritis (77%; comparison group—29%, $p < 0.001$) and a reduced level of interstitial collagens type 3 and type 1. Duodenal ulcer was detected in 12% ($p < 0,05$), and it was accompanied by Helicobacter pylori and reflux. The study has showed a significant increase of sIgA in both groups (0,264 ± 0,008 g/l, $p < 0.001$; 0,240 ± 0.01 g/l, $p < 0.01$, compared with control). These changes were more pronounced in patients with CTD ($p < 0,05$). The increased sIgA content was in the range 0,254–0,450 g/l and was observed in 58,2% of the study group and 45,1% of the comparison group. The decrease in the level of sIgA was in the range 0,102–0,124 g/l and was observed only in two patients of the comparison group. No significant differences in the concentration of sIgA depending on gender, age, disease duration, Helicobacter bacterial infection was identified. In study group it was revealed a significant increase in sIgA level in adolescents with hyperacidity compared to patients with normal acidity (0,280 ± 0,012 and 0,251 ± 0,013 g/l, $p < 0,05$) and a decrease in the level of sIgA in adolescents with gastroesophageal and duodenogastric refluxes (0,251 ± 0.01 versus 0,298 ± 0,014, $p < 0.01$)

Conclusion: This study has revealed significant disorders of local immunity in adolescents with chronic gastroduodenal pathology, which is formed against the background of collagen deficiency. It has been established that the refluxes contribute to a decrease of the local immunity, which leads to complications with the development of ulcerative lesions. This work provides grounds for employing multipurpose rehabilitation measures connected with the prevention of reflux-gastritis progression in adolescents with features of CTD.

ID: 130/Poster Viewing 1: 9

Poster Presentation

Presentation of a Case of Fulminant Hepatitis Due to Hepatitis A in a 3 Years Old Female Preschool

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Introduction: Hepatitis due to virus a is one of the most widespread infections in the world, associated with poor hygienic-sanitary conditions, generates around 10 million cases annually, being a third of the pediatric population affected. The transmission is oral-fecal. It is more frequent in childhood, mostly benign and self-limited.

Purpose: Describe the evolution of fulminant hepatitis a, treated in a private hospital in Los Cabos, Mexico.

Case description: Female, 3 years old, gestation 1, born of term. Not immunized against Hepatitis A, attended to kindergarten, she went to the clinic for headache, abdominal pain, conjunctive jaundice, and coluria. Physical examination: weight 15 kg, height 112 cm, body temperature 36.4 degrees centigrade, oxygen saturation at 98%, Glasgow 15, no hepatomegaly, no bleeding data on physical examination, hemodically stable. On the fifth day of evolution, she began with data on grade II encephalopathy, so she went to the emergencies. She was lethargic, with changes in sleep rhythm, hallucinations, and she was transferred to the Intensive Care Unit, is managed with general measures. It rapidly evolves to

encephalopathy grade IV with cerebral edema data, it is decided to perform a hepatic transplant on the ninth day of evolution and 24h after transplant surgery dies of renal failure, upper gastrointestinal hemorrhage and pulmonary. Abdominal ultrasound shows sonographic changes in relation to acute hepatopathy (Figure 1).

Laboratories: Blood biometry: 11.2, hematocrit: 11.2, leukocytes: 11,800, neutrophils: 43%, lymphocytes: 47%, monocytes: 10%, platelets: 116,000, total bilirubin: 12.3, direct bilirubin: 8.3, indirect bilirubin: 4.5, oxalacetic glutamic transaminase: 2015, glutamic transaminase: pyruvate: 3082, positive anti Hepatitis A IgM, negative anti Hepatitis A IgG, hemoglobin: 10, hematocrit: 31, leukocytes: 15,700, neutrophils: 49, lymphocytes: 44, platelets: 139,000, glutamine oxalacetic transaminase: 4263, glutamine transaminase: pyruvic: 2849, alkaline phosphatase: 612, gamma glutamyl transpeptidase: 170, total bilirubin: 16, direct bilirubin: 11.6, indirect bilirubin: 7.1, total proteins: 8:9, albumin: 3.2, sodium: 140, potassium: 2.7, chlorine: 102, phosphorus: 3.3, chromium: 0.2 Ureic acid >5.2, ureic nitrogen in the blood: 8.5, prothrombin time: 31, thromboplastin time: 25, international standard index: 3.0.

Results: Hepatic failure is a multisystemic disease with severe impairment of hepatic function, international-normalized index >1.5, or prothrombin activity less than 50% acute onset with or without encephalopathy (suggests poor evolution encephalopathy), hypoglycemia and hypoalbuminemia and very high bilirubin levels.

Conclusion: Fulminant hepatitis is the most feared complication in children, occurring in 0.1% to 5% of hepatitis A, with mortality above 80% even in transplant patients.

ID: 168/Poster Viewing 1: 10

Poster Presentation

The Relationship between Breastfeeding, Birth History, and Acute Pyelonephritis in Infants

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Introduction: Although the clinical importance of the immunological benefits regarding breastfeeding has been emphasised for decades, the direct relationship with urinary tract infections is still not clear.

Purpose: Our goal was to determine the relationship between feeding methods and the risk of acute pyelonephritis (APN), whilst investigating the effects of other factors such as sex, age, mode of delivery, and birth weight on APN.

Materials and Methods: This case–control study was performed using medical chart reviews from a single tertiary medical centre from 2012 to 2017. A total of 62 infants under 6 months of age who had both microbiologically and radiologically confirmed APN were enrolled in the case group. Healthy infants (n = 178) who visited the hospital for scheduled vaccinations were enrolled in the control group. The following participant characteristics were compared between the case and control groups: age, sex, birth order among siblings, feeding methods, weight percentile by month, birth weight percentile by gestational age, gestational age at birth, and mode of delivery.

Results: The babies exclusively fed with manufactured infant formulae before 6 months of age had a significantly higher risk for APN than breastfed or mixed-fed infants (Odds ratio (OR), 3.4; 95% confidence interval (CI), 1.687–7.031, P = 0.001). Firstborn babies had lower risks for APN than second- or third-born babies, (OR, 0.43; 95% CI, 0.210–0.919). Other factors that increased the risk for APN were low birth weight percentiles (OR, 8.33; 95% CI, 2.300–30.166) and births via caesarean sections (OR, 2.32; 95% CI, 1.097–4.887). Preterm birth numbers were greater in the case group (10.9% vs. 1.7%; P = 0.002), but did not increase the risk for APN (OR, 4.47; P = 0.063).Conclusion: Early transitions before 6 months of age from breast milk to manufactured

Figure 1.

STATE	CLINIC SIGNS	REFLEXES	NEUROLOGICAL SIGNS
Early (1 and 2)	*intense crying, inversion of sleep rhythm, lack of attention*	*hyperreflexia*	*unstable*
Middle (3)	*Somnolence, stupor, irritability*	*hyperreflexia*	*predominantly unstable*
Late (4)	*Comatose, with response to painful stimulation*	*None*	*Decerebration or decortication*

Source. Bucuvalas J, Yazigi N and Squires RH. Acute Liver Failure in Children. Clin Liver Dis 2006; 10:149-168

infant formulae were related to a higher risk for APN. The other risk factors for APN were birth order (≥ second-born), low birth weights, and births via caesarean sections.

ID: 175/Poster Viewing 1: 11

Poster Presentation

The Role of Laboratory in Central Nervous System Infections

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Introduction: Central nervous system infection is an important cause of morbidity and mortality in childhood. Especially suspected bacterial meningitis is a medical emergency, and immediate diagnostic steps must be taken for initiation of appropriate antimicrobial therapy.

Purpose: The aim of this study was to determine the characteristics of patients with central nervous system infection and the clinical and laboratory data that may be useful in the differential diagnosis of bacterial meningitis.

Materials and methods: Patients between 0 and 18 years of age who underwent lumbar puncture with pre-diagnosis of central nervous system infection in the Pediatric Emergency Department between January 2014 and December 2017 were included in this study. Demographic data, admission complaints, physical examination findings, laboratory results, and treatments were reviewed retrospectively via the hospital computer system.

Results: 417 children (57.6% male) were included in the study. One hundred and nineteen cases (28.5%) were 3 months, and under, 127 cases (30.5%) were 3 months-3 years, and 171 cases (41%) were older than 3 years. Presence of neurological findings (169 cases, 40.5%), vomiting (118 cases, 28.3%), seizures (86 cases, 20.6%) and headache (76 cases, 18.2%) were identified at presentation. Central nervous system infection was detected in 159 cases (38.1%) [32 cases (7.7%) bacterial meningitis and 127 cases (30.4%) aseptic meningitis]. In clinical complaints, vomiting was found to be significantly higher than in non-bacterial and aseptic meningitis ($p < 0.001$ and $p = 0.032$, respectively), while headache were higher in aseptic meningitis ($p < 0.001$). White blood cell count, neutrophil count, and C reactive protein values were found to differentiate bacterial meningitis ($p = 0.002$, $p < 0.001$ and $p < 0.001$; respectively). Presence of neutrophil was observed in 65.6% (21 cases) of bacterial meningitis, and 32.3% (41 cases) in aseptic meningitis ($p = 0.001$). Bacterial meningitis score was higher than zero in 19 cases (82.6%) in the bacterial meningitis group and 145 cases (49.4%) in all other cases ($p = 0.002$).

Conclusion: White blood cell count, neutrophil count, C-reactive protein levels, and presence of neutrophil in cerebrospinal fluid were found to be helpful in differentiating bacterial meningitis.

ID: 179/Poster Viewing 1: 12
Poster Presentation
Acute Necrotizing Encephalopathy

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Introduction: Acute necrotizing encephalopathy (ANE) is a severe neurological disorder seen almost exclusively in previously healthy children of East Asia. It is characterized by rapid neurologic deterioration secondary to a virus-associated febrile illness and imagiologically diagnosed by symmetric multifocal thalamic lesions. Regardless of the treatment, comorbidities are frequent, and the outcome can be devastating.

Case description: A previously healthy 2-year-old male toddler presented with high fever, cough, upper limb tremor, and gait ataxia, rapidly evolving to neurologic deterioration, drowsiness, and bradycardia and thus requiring intensive care. Blood work, including complete blood cell count, C reactive protein, erythrocyte sedimentation rate, aminotransferases, ammonia, and lactate, was normal, and the toxicology screen was negative. Respiratory virus polymerase chain reaction (PCR) was positive for rhinovirus and negative for Influenza A and B. Lumbar puncture (LP) revealed pleocytosis of 24/uL with predominant mononuclear cells, normal glucose (86 mg/dL) and mildly elevated protein levels (61,7 mg/dL), with sterile cerebrospinal fluid cultures and negative neurotropic virus's PCR. There were no oligoclonal bands or intrathecal synthesis of immunoglobulins. The electroencephalogram showed irregular and slow activity, encephalopathic, and brain MRI bilateral thalamic lesions. He was admitted with the clinical diagnosis of ANE under ceftriaxone and methylprednisolone 30 mg/kg/day. Due to persistent altered mental status, associated with aphasia and dysphagia and as biotin-thiamine-responsive basal ganglia disease could not be excluded, these vitamins were also initiated. Clinical improvement was noticed after 5 days of daily pulses of methylprednisolone, with full recovery of the ability to swallow and the aphasia. He maintained corticosteroid therapy in the following 6 weeks, and at the last observation, 2 months after the diagnosis, he still had at the neurological exam upper limb action tremor, predominantly on the right, slightly gait asymmetry to the right and ipsilateral babinski. The metabolic evaluation revealed normal amino acids and redox potential with borderline lactate and pyruvate levels, to repeat afterward. The genetic study of biotin is ongoing.

Conclusion: Concerning a clinical presentation of encephalopathy with a rapid evolution, the differential diagnosis with ANE is mandatory. Bilateral thalamic involvement is always present and considered a distinctive feature. Common etiologic agents include influenza A and B virus, which were negative in this case. Differential diagnosis of ANE includes other infectious diseases, toxic, metabolic, and inflammatory/vascular central nervous system disorders. Prognosis is frequently poor. In children without brainstem lesions, improvement in outcome was described, particularly when steroids were started within the first 24h from onset.

ID: 181/Poster Viewing 1: 13
Poster Presentation
Streptococcal Infection as a trigger to Kawasaki Disease: a case report

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Introduction: Kawasaki disease (KD) is an acute febrile illness of early childhood characterized by vasculitis of the medium-sized arteries. Although the etiology of this disorder remains unknown, it is suggested it appears as an immunological response to super-antigens in genetically susceptible individuals.

Purpose: The presentation of a preschool child with KD and acute kidney failure, probably triggered by a streptococcal infection.

Case Description: A 4-year-old girl presented in our Pediatric ER with 2-days high fever (Tmax = 39,4oC), vomiting, tonsillitis, cervical lymphadenitis, strawberry tongue, and 10% dehydration. From the laboratory examinations, came back a positive strep test, elevated WBC, an elevated CRP (32,78 mg/dL), elevated urea and creatinine (78,6 mg/dL and 0,83 mg/dL accordingly) and pyuria. Treatment started with IV correction of the dehydration and IV Amoxicillin/Clavulanic acid. On the third day of the disease, maculopapular rash on right palm appeared, and the kidney function worsened with more elevated urea and creatinine, oliguria, and urinary total protein to creatinine ratio = 0,63. However, urine culture was negative. Furthermore, a skin rash with wheal and flare appeared, which subsided with oral antihistamines. The next day, the child had cracked lips and maculopapular rash on extremities. What is more, Streptococcus was isolated in the pharyngeal culture sent at admission day. KD was the most probable diagnosis, despite the presence of fever only for 4 days and the non-typical finding of acute kidney failure, so the patient was transferred to a Tertiary Hospital for further treatment.

Results: On the Tertiary Hospital, IVIG was admitted, as well as per os acetylsalicylic acid and IV corticosteroids due to kidney failure. The antibiotic therapy changed to IV ceftriaxone. Later on the same day, bilateral nonexudative conjunctivitis appeared. On the fifth day of the disease, the patient became afebrile, and there was improvement in clinical condition and laboratory findings, except for hypoalbuminemia for which she received human albumin. Heart ultrasonography was negative for known heart complications of the disease. PLT elevation was reported on the ninth day. Periodic cardiological evaluation was negative.

Conclusion: Features of KD are similar to those found in certain illnesses caused by toxin-producing bacteria. Despite the Kawasaki-like diseases, streptococcus may trigger the KD, so we should be alert for its early diagnosis and immediate intervention.

ID: 225/Poster Viewing 1: 14
Poster Presentation
PANDAS: An Entity on the Verge of Extinction?

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Introduction: Pediatric autoimmune neuropsychiatric disorder associated with group A streptococci (PANDAS) is an ill-defined condition, with little consensus over its definition, epidemiology, pathogenesis, and treatment.

Case description: We report the case of a 6-year-old boy with a known medical history of migraines who presented with fever, fatigue, and refusal to eat. Antigen screening for group A streptococcal (GAS) infection was positive, and he was treated with amoxicillin and clavulanic acid for 5 days, with prompt resolution of symptoms. After 2 months, during which his mother considered his behavior as lethargic and apathetic, the patient started to display symptoms of impulsiveness, restlessness, trouble finishing tasks, facial tics, speech impairment (trouble starting sentences, often repeating the first words) and repetitive behavior (such as washing hands). This deeply contrasted with his previous demeanor, which had been described as “exceptional” by his

school teacher. The symptoms progressed over 3 months. Blood tests revealed a 1.5-fold increase of anti-DNase B titters (301 IU/mL), with a normal anti-streptolysin O value. A bacterial culture from an oropharynx specimen was negative for streptococci. After a traumatic lumbar puncture, the cerebrospinal fluid analysis revealed 9cells/mm3 (monocytes) with normal protein levels. There was no evidence of intrathecal IgG synthesis or oligoclonal bands. The MRI was normal. Throughout this period, the patient displayed the aforementioned symptoms, with apparent critique but little control over his conduct. He was medicated with risperidone and subsequently discharged. Since his release from the hospital, he began follow up with a child psychiatrist, maintaining a sometimes impulsive and hyperkinetic behavior, having started to successfully obey rules.

Conclusion: While there's little agreement over vital matters, such as definition of the temporal relation between the onset of neuropsychiatric symptoms and GAS infection, this case seems to meet all of the working criteria over which PANDAS is currently diagnosed. Albeit general acceptance that GAS infections are one of many factors that can exacerbate symptoms of some neuropsychiatric disorders, causality and the role of autoimmunity are yet to be confirmed.

ID: 244/Poster Viewing 1: 15
Poster Presentation
Seasonal Influenza Outbreak in Greece, During the First Weeks of 2019

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Introduction: Seasonal influenza is a highly contagious virus disease. According to WHO, influenza is responsible for 290.000–500.000 deaths and 3 to 5 million cases of severe illness every year, despite the fact that vaccination against this virus is highly encouraged and recommended by WHO, ECDC, and governments.

Purpose: Study of 2018–2019 seasonal influenza outbreak in Greece. Comparison with last year's outbreak.

Materials and Methods: The data in this study were collected from the weekly reports of the National Public Health Organization and ECDC during a 15-week period (weeks 1-15/2019). Both National Public Health Organization and ECDC used Sentinel system and/or laboratory confirmation when needed.

Results: Influenza activity in Greece started to rise in weeks 2-3/2019 and peaked between weeks 4-7/2019, before starting to decrease again. By week 15/2019, influenza activity levels were considered off-season. The Sentinel system registered 75–110 influenza-like illness (ILI) cases for every 1.000 visits in children aged 0–4 years old, for the weeks 4–7. For children aged 5–14 years old, the numbers were 125-150/1.000. For people aged 15–64 years old, the ILI cases recorded were 75-125/1.000 visits, peaking mostly in week 6/2019. On the contrary, the elderly seemed to had been affected earlier than the other age groups. ILI cases recorded in weeks 4-7/2019 were only 35-45/1.000, whereas, in weeks 52/2018-2/2019, the cases slightly increased to 40-50/1.000. Almost all the influenza-positive samples were attributed to type A influenza virus, and only a few sporadic cases (<3%) were attributed to type B. Most of the type A influenza virus belonged to subtype H1N1pdm09, suggesting that this was the dominant type in Greece. In comparison, last year's epidemic was attributed to type B influenza virus. Compared to last year's epidemic, this outbreak was far more severe; however it did fall within the expected European boundaries estimated by the ECDC at the same period of time. The severity was also as expected, considering the fact that the dominant type was type A influenza virus. As for the Vaccination Coverage Rate, it was slightly increased compared to last season (both in health-care personnel and general population); however, it remained extremely low, and so did in the rest of Europe.

Conclusion: In this year's epidemic, mostly affected were people <65 years old, especially children 5–14 years old. Targeted flu vaccination awareness campaigns should be planned to help tackle this potentially fatal threat in the next years.

ID: 258/Poster Viewing 1: 16
Poster Presentation
When Simple Becomes Complicated

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Introduction: Intracranial complications of acute sinusitis account for up to 10% of the episodes of this frequent benign pathology. Within this group of complications, it is included meningitis, deep venous thrombosis, and intracranial abscess.

Description of the case: We describe 2 cases of intracranial complications of acute sinusitis, both teenagers (12 and 17 years old) without previous relevant medical history and both with anti-pneumococcal vaccination. In the first case, a 12-year-old boy went two times to his nearby hospital emergency room with fever and headache, being discharged in both of them with symptomatic treatment. After neurologic impairment, he returned to hospital (D9 of disease) and did a Magnetic Resonance (MRI), which showed pansinusitis, subdural empyema, and superior longitudinal sinus thrombosis. He started empirical intravenous antimicrobial therapy with Ceftriaxone and Aciclovir and was transferred to our hospital. On admission, he presented aphasia, and both left facial and right arm paresis. He was submitted to surgical drainage, the antibiotherapy was adjusted (started Metronidazole and Vancomycin) and started hypercoagulation. During a 6-week hospital stay, he presented partial regression of the deficits and was discharged to a physical rehabilitation center. All cultural exams were negative. In the second case, a 17-year-old girl went to a nearby emergency room after 7 days of fever, headache, and periorbital edema. She was discharged with Amoxicillin/Clavulanic Acid treatment for preseptal cellulitis. She then started neurologic impairment with speech identification, disorientation, and paresthesia, which motivated a return to the hospital, in which she did an MRI that showed orbital cellulitis, deep venous thrombosis, and cerebellous subdural abscess as a result of acute sinusitis. She was transferred to our hospital, submitted to surgical drainage of the abscess, and started parenteral anticoagulation. During the 117-day hospital stay, she realized long course antimicrobial therapy (with Ceftriaxone, Vancomycin, Metronidazole, Linezolide, and Meropnem) and developed several episodes of infratentorial hydrocephalus, being submitted to multiple surgeries. She started a physical and speech rehabilitation program and was discharged to a rehabilitation center after partial regress of the deficits. There was the isolation of a Streptococcus constellatus agent in the abscess.

Discussion: Late diagnosis and onset of antimicrobial therapy are described as important causes of acute sinusitis' complications. Therefore, with both these cases, we intend to highlight the importance of correct diagnosis and early treatment of this pathology, frequently associated with low mortality rates but which may cause important morbidity

ID: 267/Poster Viewing 1: 17
Poster Presentation
Case Report: Fibula Osteomyelitis after the Use of Kinesio Tape

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Introduction: Acute osteomyelitis is a bone infection, usually caused by bacteria, most commonly Staphylococcus aureus. In children, it is most often haemotogenous in origin and frequently affects long lower limb bones. More often, the diagnosis is based on clinical and imaging findings. Classical clinical manifestations are limping, fever, and local inflammation signs.

Case report: Fifteen-year-old male with a previous history of right ankle sprain 3 weeks earlier, who went under conservative treatment. The physical therapist ended up using kinesio tape for 3 days. After removing the tape, a skin reaction of the dorsum of the foot and internal maleolar region was noticed, with redness, tenderness, and pain. 7 days later, he was observed in the emergency room for progressive worsening of the inflammatory signs with recent blisters with no other symptoms or signs associated. Initially, an X-ray was performed with no pathologic findings. An ultrasound revealed a small hypoecogenic area by the talocalcaneal joint. To clarify those findings, an MRI was performed: it showed a typical image of osteomyelitis of the right distal extremity of the fibula. Based on these findings, the diagnosis of osteomyelitis was assumed, and, therefore, he started antibiotic therapy with flucloxacillin and clindamycin. No analytical abnormalities were found, besides a reactive C-protein of 26mg/L. The bacteriological culture of the blister was positive for Staphylococcus aureus. After about 4 weeks of IV treatment, a control MRI was done and showed an improvement of the overall appearance of the fibula, and the reactive C-protein lowered to normal values. He was discharged with an indication to complete a total of 6 weeks of antibiotic therapy.

Discussion/Conclusion: Based on the clinical and, mostly, imaging findings, a diagnosis of fibula osteomyelitis secondary to cellulitis caused by the use of kinesio tape was assumed. Some cases of kinesio tape reaction with cellulitis and blister are described in the literature, but no complication as this one has been described. Even though osteomyelitis is a relatively common infection in paediatrics population, this form of presentation was anything but common. The lack of systemic findings could falsely be assumed as a superficial skin infection only. The treatment must be initiated as soon as possible to prevent further complication or permanent sequellae.

ID: 108/Poster Viewing 1: 18

Poster Presentation

Therapeutic Sequence in the Transfer from Rehabilitation Day Car Centers to the Education System

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Background: Israeli rehabilitative daycare centers operate under the Law (2000) and Regulations (2008).This law aims to ensure a toddler with a disability a rehabilitation setting, adequate care, and education. There are approximately 130 Rehabilitative daycare centers receiving infants from the age of 6 months to 3 years of age. The rehabilitative daycare centers are divided into three types: centers for multi-disabled toddlers, centers for toddlers on the autism spectrum, and centers for toddlers with visual or hearing impairments. The supervision on rehabilitative daycare centers is carried out by representatives from the Ministry of Health and the Ministry of Welfare. At the age of 3 years, toddlers continue to various educational frameworks (regular or special education kindergartens) depending on the developmental situation of each toddler. Toddlers who still need developmental intervention can receive treatment at the HMO [health maintenance organization] in addition to their stay in various educational settings. Follow-up of the treatment continuum is required, characterization of the population that finishes the rehabilitative daycare center, and their needs in the future.

Study Question: Is the transition of toddlers from various rehabilitative daycare centers to different educational frameworks, provides a good therapeutic sequence focusing on the type of therapeutic response required by population types and diagnoses and the need for additional developmental response within the HMO setting?

Methods: From December 2018 to March 2019, a telephone survey was conducted involving 162 parents of toddlers from rehabilitative daycare centers. They were randomly sampled in a probabilistic sample (each entry has the same chance to participate in the sample), from a sampling frame received from the Ministry of Health. The survey is from a sampling frame of 500 toddlers from rehabilitative daycare centers who were willing to participate in the study.

Results: It seems that the therapeutic continuum has not been adequately maintained. For example, about a tenth to a quarter of the toddlers do not receive any treatment they had previously received in the rehabilitative daycare center, especially in the fields of physiotherapy and occupational therapy. In addition, even among those receiving treatment, the number of treatments received today is lower than the number of treatments received in the past. The parents' satisfaction with the treatments received by the toddler in the current framework is moderate, and lower than the satisfaction of the rehabilitative daycare centers, mainly due to the lack of parents' participation in the decision-making process and treatment.

Conclusion: This is the first study to collect data and statistics that examine the differences in consuming a basket of treatments for toddlers in the transition between the various frameworks belonging to the Ministry of Health and the Ministry of Education. Further testing is needed, especially in determining the continuity of treatment and collaboration between the two ministries. Implications Keeping the therapeutic sequence is a big medical challenge. It is very important when dealing with weak populations. Building the right platforms between the offices will improve the outcome for the kids.

ID: 112/Poster Viewing 1: 19

Poster Presentation

Markers of Bone Formation in Children with Neurodisability

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Introduction: Immobility is known to have a negative impact on bone health; however, the long-term bone metabolic processes affecting patients with prolonged immobility remains largely unknown. Alkaline phosphatase (ALP), an enzyme produced by osteoblasts, is extensively involved in the mineralization of bone and is a useful biochemical marker in bone formation.

Purpose: This study aimed to look at the effects of hypomobility on ALP levels in children.

Methods: Retrospective data consisting of 22 children (12 females, 10 males, age range 2–15 years, mean age 6.2, SD = 3.2) with differing scoring of gross motor function classification system (GMFCS I n = 1, II n = 2, III n = 8, IV n = 3, V n = 8) were matched to healthy control samples. Data for ALP, Calcium, and Vitamin-D levels were compared between groups.

Results: T-test showed a significantly lower level of ALP in the neurodisability group (mean 183 U/l, SD = 50) when compared to control (mean = 228 U/I, SD = 78) (p = 0.020). There was no significant difference in Vitamin D and Calcium levels between the two groups.

Conclusion: Our findings suggest hypomobility may be associated with a reduction in bone formation, as evidenced by significantly lower ALP levels seen in the neurodisability group.

ID: 132/Poster Viewing 1: 20

Poster Presentation

Pediatric Cerebral Sinovenous Thrombosis—a Case Report

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Introduction: Cerebral sinovenous thrombosis (CSVT) is a rare but serious cerebrovascular disorder affecting children of all ages. Risk factors include sickle cell anemia, chronic hemolytic anemia, β-thalassemia major, heart disease, iron deficiency, infections, dehydration, head injury, and coagulopathies. The most frequent risk factor in young women is the use of oral contraceptives. Patients present with variable symptoms, from headache to seizure and coma. The management consists of treating the underlying cause; however, 15% of patients may not have an obvious cause.

Case report: A 16-year-old caucasian, previously healthy female, who has been taking oral contraceptives for a year, was admitted to a pediatric emergency department for onset of severe, pulsatile, refractory to analgesics, right frontotemporal headache, with 6 days of evolution. The headache caused nocturnal awakenings and was associated with nausea and vomiting, photo, and phonophobia. Fever or visual problems were denied. No history of traumatic brain injury. No personal or family history of migraine. She had an upper airway infection 1 week before. At admission, she had a good general appearance, was apyretic and hemodynamically stable. Physical examination, including the neurological approach, was normal. Brain Computed Tomography (CT) was performed and showed a recent thrombus that obliterates the torcula, regions near the transverse sinuses, straight and sagittal lower sinus, Galen vein, internal cerebral veins, and proximal portions of the basal Rosenthal veins. She was observed by ophthalmology, and no alteration was described. She was admitted to the neuropediatric service, and anticoagulation with enoxaparin was initiated. A hypercoagulability workup was performed, which included homocysteine, antithrombin III, fibrinogen, proteins C and S, activated protein C, prothrombin G20210A mutation, PAI-1 gene polymorphism, anti-cardiolipin, anti-beta 2 glycoprotein, and lupus screen were all negative. In addition, hemogram, ionogram, renal, hepatic, and thyroid function were all normal as well. Serologies for CMV, EBV, parvovirus B19, herpes simplex virus 1 and 2, varicella-zoster virus, HIV, hepatitis B, and C and mycoplasma pneumoniae were negative. An echocardiogram performed was negative. Subsequent resonance imaging brain confirmed CT findings. Frontal headaches persisted until the eighth day of hospitalization. She was discharged from the hospital in the tenth day, asymptomatic and without any neurological sequalae, under warfarin monotherapy.

Conclusion: After wide investigation, the only risk factor for CSVT in our case was the use of oral contraceptive. CSVT is a challenging condition, and a high degree of clinical suspicion is essential.

ID: 152/Poster Viewing 1: 21

Poster Presentation

Altered Phenylalanine Metabolism in a Child with Acute Necrotizing Encephalopathy of Childhood (ANEC) with liver dysfunction

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Introduction: ANEC is a neurologically devastating condition following a viral infection with high morbidity and mortality. It is characterised by bilateral symmetrical lesions in the thalami and brainstem on imaging. ANEC can result in a cytokine storm with systemic symptoms such as liver dysfunction, shock, and disseminated intravascular coagulation (DIVC)1. Liver dysfunction alters amino acid metabolism and usually result in raised aromatic amino acids (phenylalanine, tyrosine, and tryptophan), and a decrease in branched-chain amino acids (valine, leucine, and isoleucine) as these compete for transport across the blood-brain barrier.

Case description: We report a case of a 10-year-old Indonesian Chinese boy, with mild language delay, who was admitted for Influenza B positive acute necrotizing encephalopathy (ANEC) with

significant-raised phenylalanine level. His condition is complicated by liver and kidney dysfunction and DIVC. He presented with 2 days of fever, seizure, and altered mental status and was treated for meningoencephalitis. Initial investigations include an infective, an autoimmune, and a metabolic screen. Lumbar puncture was held off due to concern of cerebral edema. Nasopharyngeal aspirate was positive for Influenza B, and MRI brain showed findings characteristic of ANEC. However, plasma amino acid showed raised phenylalanine (666umol/L) and urine organic acid showed raised excretion of phenylalanine metabolites. Other amino acids, including tyrosine level, were normal. Patient was treated with a phenylalanine-restricted diet to preserve neurocognitive function. Subsequent investigations showed the resolution of the hyperphenylalaninemia when liver function improved when placed on a regular diet. Raised phenylalanine is likely due to liver dysfunction resulting in the inability to metabolise aromatic amino acids and their amines. However, phenylalanine is the only amino acid raised, suggesting that a different mechanism may selectively inhibit phenylalanine hydroxylase. Also, it is unclear if high serum phenylalanine level translates to high phenylalanine in the CSF as brain accumulation of aromatic amino acids can induce a profound change in neurotransmitters resulting in encephalopathy. Our patient remains neurologically devastated, and it remains unclear if improving the amino acid profile changes his outcome.

Conclusion: The amino acid profile in patients with primary neurological encephalopathy with liver dysfunction differs from patient with primary hepatic encephalopathy. A comparison with CSF profile would give a clearer idea of amino acid transport and metabolism.

ID: 173/Poster Viewing 1: 22

Poster Presentation

Physical Activity Profile of Primary School Children in Northern Cyprus

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Introduction: Screening surveys play an important role to improve preventive medical policies in countries. There is no adequate information about the physical activity conditions of children living in Northern Cyprus.

Purpose: This study aims to investigate the physical activity profile of primary school children and specify the level of their physical activity.

Materials and methods: Pilot schools and required number of schoolchildren were firstly determined from six cities found in Northern Cyprus. Physical Activity Questionnaire for Children and Youth (PAQ-CY) was conducted with face-to-face interviews in the spring semester of the 2018–2019 year.

Results: 700 children from Nicosia, 624 children from Famagusta, 529 children from Kyrenia,223 children from Trikomo, 148 children from Morphou, and 59 children from Lefka were included. In total, 2283 children between 9 and 11 years old (1131 = girl, 1152 = boy) participated. The average level of physical activity was found to be 3.31 ± 0.02. There were significant physical activity level differences among the cities. Eastern cities had a lower level of physical activity than the western cities ($p < 0.05$). In addition, girls had a significantly lower level of physical activity than boys ($p = 0.001$). Girls (17.9%) mostly prefer to ride a bicycle, while boys (49.1%) prefer to play football. Lastly, while classes increased, the PAQ-CY scores significantly decreased ($F = 4.839$, $p = 0.008$).

Conclusion: The physical activity map of Northern Cyprus was specified, and significant differences were determined among the cities. Children had a medium level of physical activity on average in North Cyprus. The interventions should be specified according to these results, and more studies are required to determine the barriers and opportunities for the physical activity of school children.

ID: 273/Poster Viewing 1: 23

Poster Presentation

Ages and Stages Questionnaires (ASQ)- Standardization and application in practice in Serbia

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Introduction: Economic analysis shows that investing in early child development (ECD) is the most profitable investment for the future. The ASQ-3, in a timely manner, identifies children who may have developmental delays. Using this instrument, the detection is increased to 70-80%, and the possibility of early identification of delays and also allows immediate activities to encourage l development by parents or intervention by professionals. Altogether, this results in allowing children to fully develop in accordance with their biological potential. National Program for the Improving of ECD, adopted by the Government of the Republic of Serbia recommended ASQ-3 for mandatory screening of the development of children aged 1–66 months in five areas (communication, gross and fine motor activity, personality/sociability, problem solving), as well as for assessing the need for additional diagnostics or early intervention and reassessment.

Purpose: This paper aims to present the results of the study investigating whether ASQ-3 meets the standards of child development in Serbia and whether it should be used as a screening tool. Methods and Materials: The ASQ-3 standardization for children in Serbia lasted 1,5 year, included a representative sample of 1,390 parents and children from 22 districts across Serbia, with the participation of 69 pediatricians from 44 primary health centers, conducted by the PAS and the Institute of Psychology, Faculty of Philosophy in Belgrade, with the support of the Ministry of Health, the Open Society Foundation, and UNICEF. In the ASQ-3 standardization, descriptive measures and thresholds were calculated for each five domains for each age examined.

Results: Between 8-12% of children, depending on the domain, require follow-up, i.e., reassessment, after the use of stimulating activities by the parents, and about 5% of children should be referred immediately for further diagnosis. The results of standardization of ASQ-3 in Serbia were compared with those in the USA, Georgia, and Bulgaria. The findings were comparable. Results in Serbia are lower scores only at the age of 24 months than in the USA.

Conclusion: The ASQ-3 standardization has shown that questionnaires are discriminatory, reliable, and valid, enabling the identification of children who need further monitoring or detailed assessment. After that, seven selected health centers have involved in the implementation of ASQ-3.

ID: 119/Poster Viewing 1: 24

Poster Presentation

Asthma Severity and Control Screening Implementation at a Large Urban Health System: Challenges and Successes

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Introduction: Asthma severity and level of control classification is the first step in asthma management. To optimize asthma management, screening must be done routinely and in a standardized manner at the time of the patient's visit with the health-care provider.

Purpose: 1) To develop and implement asthma severity and control screening within electronic health record (EHR) system of a large urban health system to improve pediatric asthma care; 2) To increase asthma screening from 0% to 80% by December 2020. Materials and Methods: We developed an algorithm for asthma screening in EHR based on national guidelines that asked about medications taken at home, exercise-induced symptoms, medication adherence, daytime and night-

time symptoms, use of rescue medication and interference with activity in the past 4 weeks, and use of oral corticosteroids in the past year. Screening was conducted by the nursing staff prior to the patient being seen by the provider. Based on responses to the screening questions, severity/control classification is calculated and displayed in EHR for the provider to then treat patient accordingly. Classic Quality Improvement tools such as the Model for Improvement and Plan Do Study Act (PDSA) cycles were used to incorporate changes into daily workflow. Practice Advisory Board met monthly to discuss barriers to implementation and identify solutions. The Board made decisions on adopting successful strategies and brainstormed new strategies to address barriers.

Results: This project is ongoing, and preliminary results are available from three practices: small pediatric, large pediatric, and family medicine practices. The ultimate goal is to improve care and clinical outcomes of children with asthma. To date, a total of 4,057 screenings have been completed at these sites. Screening rates improved from 0% to 78.6% in a small pediatric practice, from 0% to 66.7% in a large pediatric practice, and from 0% to 38.7% in a family practice. Several challenges were encountered during the process of change: competition with other nurse-completed screenings; screening questions are available in English only within EHR; nursing staff shortages; nurses forgetting to conduct screening; and caregiver not knowing information about child's asthma or disagreeing with asthma diagnosis.

Conclusion: We developed an asthma screening algorithm within EHR, trained nursing staff, and implemented patient screening at the time of clinic visit allowing providers to take action on asthma management based on the screening result. Further collaborative efforts are needed to improve and sustain screening rates with the ultimate goal of improving patient clinical outcomes.

ID: 139/Poster Viewing 1: 25

Poster Presentation

Erythema Nodosum: an uncommon etiology

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Introduction: Erythema nodosum is a delayed-type hypersensitivity reaction that most often presents as erythematous, tender nodules on the shins. It can occur secondary to a wide variety of conditions such as infection, drugs, pregnancy, malignancy, and inflammatory conditions, but in many cases, no cause is found. Acute gastroenteritis a Campylobacter it's one of the possible etiologies as we will present in this case.

Case Description: Teenager, 17years, male gender, healthy, evaluated in the emergency department due to mild abdominal pain and liquid, sometimes blood and mucus-related defects with 5 days of evolution. No fever or vomiting. No rhinorrhea, cough, or diuresis changes. Epidemiological context of disease—mother with the same symptoms. On objective exam, apyretic, hemodynamically stable, with no sins of dehydration, abdomen painless to palpation, without signs of peritoneal irritation. He was discharged with the diagnosis of acute gastroenteritis, medicated with oral rehydration and probiotic. On the sixth day of the disease, maculopapular exanthema appears on the trunk, disappearing at digitopression, and on the 8 day, onset of painfull erythematous nodules on the anterior surface of the lower limbs of various sizes. No arthralgia or fever. At the objective examination, nodules were identified in the lower limbs compatible with erythema nodosum, without further changes. After treatment with anti-inflammatory and oral azithromycin, he had complete resolution of gastrointestinal symptoms and cutaneous nodules. In coproculture, identification of Campylobacter jejuni spp jejuni.

Conclusion: Infection is the most commonly identified etiology in erythema nodosum, and it's important to know the possible complications of common pathologies for adequate recognition and orientation.

ID: 174/Poster Viewing 1: 26

Poster Presentation

Neuropsychology Theories that could Help ASDs Caregivers and Designers to Understand the Disorder: A Review

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Introduction: Cure for autism does not exist. Behavioural intervention programs and appropriately designed tools can help.

Purpose: Identification of neuropsychology theories that could help caregivers and designers to understand the disorder.

Methods: Literature review.

Results: Foundational theories for ASDs are: 1) Theory Of Mind: The ability of an individual to recognize the mental states (beliefs, desires, intentions, imagination, emotions) of others. Autistics have a deficit of theory of mind: they do not understand that other people have thoughts and that those thoughts may be different from their own (mind-blindness). 2) Theory Of Executive Dysfunction: Many autistics are thought to lack certain executive functions that control cognitive processes. This impairment would be the origin of their stereotyped and repetitive behaviours. 3) Weak central coherence Theory: Failure to see the big picture. It explains the unusual attention to details and the piecemeal information rather than the global processing many autistics have. 4) Gestalt Theory: The whole of anything is greater than the sum of its parts. The ability to look at an object as a whole, not just as individual pieces, poses another cognitive processing issue for autistics (he/she may find it difficult to "break" the whole image into meaningful parts-the individual may focus on the pieces that grab their attention the most). 5) Sensory Integration Theory: The detection, integration, and use of the sensory information that helps a person interact with his/her environment. Autistics often have abnormal responses to incoming sensory information from the surrounding environment (hyper-sensitive/hypo-sensitive) due to the inability to process information from several senses. 6) Flow Theory: Flow state is the mental state in which a person performing an activity is fully immersed in a feeling of energized focus and enjoyment. This state is not related to the hyperfocus behaviour of autistics (rigid/repetitive behaviours, narrow interests). These behaviours come from the desire of autistics for predictability and to maintain control over their environment-however the accomplishment of flow state would be a target when designing for autistics. 7) Social Learning Theory: According to this theory, "I learn through observation and imitation of others". There is a deficit of this theory in autism: autistics are not interested in other people, or maybe they perceive them like objects-not persons (disorder inactivation of mirror neurons).

Conclusions: It is necessary for ASDs caregivers and designers to utilize multiple theories/models/perspectives from different research fields in order to understand the disorder and develop appropriate intervention strategies.

ID: 292/Poster Viewing 1: 27

Poster Presentation

A Case of Drug-Induced Encephalopathy in a Thirteen—Month Old Toddler as a Result of Accidental Ingestion of Aripiprazole: A Pediatric Case Report

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Introduction: According to the Greek Poison Control Center data, in 2017, 52.2% of the poisoning reports concerned children (0–14 years old) with the majority involving toddlers (81% in total). Almost all cases happen at home. Caregivers report accidental ingestion of various chemical substances (commonly drugs, detergents pesticides, etc.), with a wide range of clinical manifestations and ultimate consequences on child health. In some cases, the child exhibits CNS-related symptoms, like stupor, spasms, or even coma, that initially point to CNS infection or epileptic syndromes. This might result in unnecessary procedures and a crucial delay in appropriate treatment.

Purpose: To sensitive—general paediatrician- for further investigation in order to find among children arrive presenting behavioral disorder, which of them have accidentally received psychiatric medicine.

Case description: a thirteen-month-old girl was referred to the Pediatric Emergency Department due to febrile stupor. Upon admission, the child was somnolent, with retard reaction to external stimuli, without any signs of respiratory distress or circulatory failure.

Results: On suspicion of CNS infection, full blood count, including infection markers, fundoscopy, and lumbar puncture were performed, while Brain CT scan revealed no intracranial hemorrhage or any space-occupying lesion. The toddler was initially treated with iv Cefotaxime (50 mg/kg) and Acyclovir (10 mg/kg) per/dose. Since there were no signs of improvement, the child was referred to the regional tertiary hospital for further evaluation and treatment. During the transport, the caregivers recalled that the child's mother was under treatment with aripiprazole for bipolar disorder and that they had noticed a tablet missing the day before. All symptoms resolved completely within the next 3 days.

Conclusions: Doctors should remain alert to the possibility of drug ingestion, when a child is presented with altered behavior, reduced level of consciousness, spasms, or otherwise unexplained neurological symptoms and, upon suspicion, insist on extracting relevant information from the child's escorts. Caregivers should ensure that any dangerous substances are kept out of reach, supervise toddlers at all times, and report, immediately, any incident of ingestion to the responsible authorities.

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Poster Presentation

Abdominal Pain and Vomiting: When Dependence Lurks

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Introduction: Cannabis is one of the most commonly abused drugs worldwide. In Portugal, it is the most consumed recreational drug. In 2016/17, 15% of the population aged 15–34 referred to having experimented with cannabis for at least one time and 6% in the last 30 days. The long-term and short-term toxicity of cannabis is associated with pathological and behavioral effects.

Case Description: A 15-year female with no relevant past medical history presented to the emergency department with a 5-day history of recurrent episodes of periumbilical abdominal pain, constipation, nausea, and around three episodes of vomiting per day, all improved with a hot bath. During this time, she had three admissions to the emergency department and was treated for nausea and vomiting without clinical improvement. Due to the clinical presentation, she was admitted to the pediatric ward for investigation. On physical examination, there was pain on palpation in the periumbilical area. The blood count, metabolic panel, and renal function were unremarkable. Abdominal X-ray showed abundant stools. Ultrasonography was within normal limits. On day two of hospitalization, the patient was very appealing with severe colicky abdominal pain and needed intravenous analgesia. She was treated with esomeprazole, ondansetron, and started laxatives for presumed fecal impaction, although there was no improvement in abdominal

pain and vomiting. Meanwhile, the urine drug screen was positive for cannabinoids. When confronted with this result, the patient admitted cannabinoid use for the past 3 years (at least 3–4 cigarettes per day, the first one after waking up). She was evaluated by psychiatry and started lorazepam 1,5 mg but remained without clinical improvement, with persistent abdominal pain, nausea, and vomiting. Given the maintenance of symptoms, the patient started gabapentin 300 mg and chlorpromazine 25 mg, with significant clinical improvement in the following 3 days. She was referred to a drug rehabilitation clinic. On subsequent follow-up, she had abstained from cannabinoids and remained symptom-free.

Conclusion: Abdominal pain and vomiting are very common symptoms expressed in the pediatric population and may be associated with a variety of conditions. The nature of the association between abdominal pain, nausea, and vomiting with chronic abuse of cannabinoids is obscure. In some patients, these symptoms can have a pattern similar to cyclic vomiting syndrome with a peculiar compulsive hot bathing pattern that relieves intense feelings of nausea and accompanying symptoms. It is important do not forget drug abuse as a possible cause of abdominal pain, nausea, and vomiting.

ID: 239/Poster Viewing 1: 29

Poster Presentation

Beyond the Norm—Bullying Victimization and Adolescents Weight Status and Body Image

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Introduction: Appearance that deviates from the generally accepted norm is one of the reasons why adolescents become victims of violence.

Purpose: This study examined the relationship between bullying victimization and bodyweight categories in boys and girls using objective and subjective measures.

Material and methods: The study covered 5,225 students in the age of 11,13 and 15 years, surveyed in Poland as part of the HBSC 2018 study (49.2% boys). A group of adolescents who experienced bullying at school 2–3 times a month or more often in the last 2 months and have experienced cyberbullying at the same frequency was identified (N = 391; 7.5% and N = 332; 6.4%, respectively). The BMI z-score was calculated basis on self-reported data, and five BMI categories were distinguished using the AnthroPlus software and the WHO 2007 criteria. The following groups were, respectively: underweight 4.2%; at risk of underweight 13.6%; normal 60.9%; overweight 16.6%; and obesity 4.7%. Young people were also asked if they thought they were: much too thin, too thin, about right, too fat, much too fat. In subsequent categories, respectively: 3.7%, 12.0%, 45.2%, 32.4%, 6.7%.

Results: Boys are more often victims of bullying than girls (9.3% vs. 5.5%) and also more often experienced cyberbullying (7.2% vs. 5.6%). The relationship between body mass category and bullying victimization at school is symmetrical U-shaped ($p = 0.045$). A significant relationship is only observed in boys ($p < 0.001$). A significant relationship was not observed regarding cyberbullying victimization ($p = 0.450$). Bullying victimization at school is more visible among adolescents who consider themselves much too fat ($p < 0.001$). Among boys, the relationship is similar to the U-shaped one ($p = 0.006$), when among girls, it is linear ($p < 0.001$). Young people who perceive themselves as much too fat but also those who feel they are too thin are more often victims of cyberbullying ($p < 0.001$), which is applied in both genders.

Conclusion: Abnormal bodyweight category is a factor that is conducive to victimisation at school. While girls are more exposed to violence at a higher bodyweight category, boys are also at risk when they are too thin. Bodyweight category is not related to cyberbullying. Negative body image shows a strong relationship with both types of bullying. Among boys, not only assessing themselves as too fat but also perceiving themselves as too thin contributes to being a victim of bullying at school when according to cyber victimisation it is similar in both genders.

ID: 256/Poster Viewing 1: 30

Poster Presentation

Do Adolescents Suffer from Health Complaints Due to Problematic Social Media Use?

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Background: Both positive and negative aspects of the influence of social media use (SMU) on adolescents' health were widely discussed. Health complaints described in the literature include both somatic and psychological symptoms, but as so far, they have been rarely analysed in the context of SMU.

Objective: The objective of the paper was to investigate the association between problematic social media use and health complaints among school-aged children.

Material and Methods: The survey conducted in 2018 as a part of the HBSC survey involved 5225 Polish students aged 11–15, including 49.2% boys. The SCL (subjective complaints checklist) scale was a dependent variable. It is a non-clinical measure of subjective health complaints and includes eight symptoms (table). Their recurrent occurrence was defined as more often than once a week or every day. Problematic social media use symptoms were measured with the nine-item scale using a dichotomous (No/Yes) answer. The risk group are adolescents with five positive answers. The series of logistic regression models were estimated, examining the impact of problem media use on individual complaint adjusted for gender and age.

Results: 13.1% of the entire study population was included in the risk group of social media abuse: 10.9% of boys and 15.3% of girls—$p < 0.001$. Recurrent symptoms were reported with a different frequency: from 9.4%—stomach-ache to 36.5%—nervousness. In all eight models, the impact of problematic media usage significantly increased the risk of health complaints. The highest OR rates were obtained for nervousness and low mood (2.47 and 2.41, respectively). Due to problematic media use, youth suffered less frequently from somatic complaints than psychological problems.

Conclusion: The association between problematic social media use and health complaints among adolescents has been confirmed. SMU syndrome is more likely to cause psychological problems than somatic ones. This confirms the need to educate children, parents, and teachers about healthy social media use.

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Poster Presentation

Evaluation of Vascular Endothelium Growth Factor and Tumor Necrosis Factor in Children with Cardiomyopathies

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Introduction: The effect of cytokines on the clinical picture and course of cardiovascular diseases in children occurs through exposure to the immune, central nervous, and endocrine systems. In recent years, researchers have focused on interleukins, including endothelial vessel growth (VEGF) and tumor necrosis factor-α (TNF-α), which are very sensitive markers.

Purpose: The purpose of the study was to study the content of vascular endothelial growth factor and tumor necrosis factor in children with cardiomyopathies (CMP).Materials and methods. We examined 104 children with cardiomyopathies hospitalized in the cardiac rheumatology

departments of the RSSPMCP in Tashkent and the Republican Children's Multidisciplinary Medical Center of the Republic of Karakalpakstan in Nukus. The average age of patients was 8.9 ± 0.6 years. Immunological studies, including the determination of VEGF and TNF-α, were carried out in the clinical laboratory department of RSSPMCP using biochips technology RANDOX.

Results. Analysis of the research results indicates the ambiguous effect of hypoxia on the ability of children to produce TNF-α and VEGF. A study of the content of TNF-α showed that its level was increased in 70.5% of the examined children. So, if moderate hypoxia is accompanied by a slight increase in the level of serum TNF-α (9.2 ± 0.87 pg/ml), then in the case of severe hypoxia in these children, its level was quite high (16.7 ± 1.2 pg/ml) relative to normal values (2.28–7.81 pg/ml) A more pronounced increase in TNF-α was noted in dilated CMP with heart failure IIB–III degree ($p < 0.01$). Hypoxia increases the level of hypoxia-inducible factor-1-alpha (HIF-1α), which activates the expression of VEGF. VEGF increases vascular permeability, leads to the disorganization of the vascular wall. Analysis of the data showed that the level of VEGF exceeded normal values by 2–4.5 times in 95.5% of patients with CMP.

Conclusion: In children with CMP, there is an increase in the levels of TNF-α and VEGF, the content of which directly depends on the degree of heart failure and hypoxia.

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Poster Presentation

Influence of Physical Activity on Functional and Biochemical Characteristics of Children

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Introduction: One of the most important indicators of a child's health is the harmony of his physical development. Harmonious physical and mental development contributes to properly organized physical education and sports for children. Long-term adaptation of athletes to physical activity of different intensities is accompanied by specific changes in the structure of metabolism. The central place in such structural changes is occupied by the system of energy supply of muscular activity.

Aim: The aim of the study was to determine the effect of physical activity and sports on the functional and biochemical parameters of children.

Materials and research methods: 200 students (120—children involved in sports and 80—students involved in physical education in secondary schools) conducted studies aimed at studying the functional changes in the respiratory and cardiovascular systems (electrocardiography (ECG), blood pressure, respiratory rate and heart rate), as well as biochemical changes (indicators of calcium, phosphorus, creatinine, lactate, pyruvate, adenosine triphosphate (ATP), adenosine diphosphate (ADP), lactate dehydrogenase (LDH) and creatine phosphokinase (CPK) before and after e physical activity.

Results and judgment: According to the results of studies, young athletes did not reveal significant changes in the respiratory and cardiovascular systems in response to physical activity, while in children engaged in physical education after exercise, a significant increase in blood pressure, an increase in heart rate, and respiratory rate were revealed. ECG indicators of athletes were unchanged before exercise, and after exercise, they revealed only sinus tachycardia, which is a normal reaction of the cardiovascular system to physical activity, and indicators were restored in the first minute after it. And in children involved in physical education, ECG indicators indicated the occurrence of sinus tachycardia (97.5%), arrhythmias (8%), various cardiac conduction disorders—blockade (7.5%), and extrasystoles (1.25%) after exercise. The results showed that the respiratory and cardiovascular systems of the body of young athletes, unlike students involved in physical education, are more enduring to physical exertion, as well as their adaptation and restoration of the functional state in the systems proceed without significant changes.

Table 1. Subjective complaints among teenagers in the context of social media

Symptom	Recurrent complaints	OR related to problematic social media use*
Headache	14.6%	1.71 (1.39–2.09)
Stomach-ache	9.4%	1.89 (1.49–2.40)
Backache	11.3%	1.41 (1.12–1.78)
Feeling low	21.9%	2.41 (2.02–2.88)
Irritability or bad temper	30.4%	2.26 (1.91–2.68)
Feeling nervous	36.5%	2.47 (2.09–2.91)
Difficulties in getting to sleep	24.4%	2.03 (1.71–2.41)
Feeling dizzy	9.5%	1.89 (1.50–2.30)

*With 95% confidence interval

Conclusion: According to biochemical studies aimed at studying the energy metabolism and metabolism of the body of athletes and students involved in physical education, it was found that athletes after exercise significantly increase energy metabolism—lactate, CPK, and ATP. These indicators are of great importance in the function of the muscular system and the accumulation of energy potential. Among students engaged in physical education, such changes were not observed; on the contrary, these children showed a decrease in ATP and lactate, an increase in ADP. On the other indicators, no changes were noted. The level of inorganic phosphorus before and after exercise in these children was 5 times low compared to athletes. The results obtained indicate that in the body of young athletes, energy and metabolism proceed more intensively, and their body adapts faster to physical activity. Thus, sport activities have a positive effect on functional and biochemical parameters and contribute to strengthening the health of students.

ID: 220/Poster Viewing 1: 33
Poster Presentation
Bacteriophage Therapy in Georgia

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Introduction: Dramatic increase of antimicrobial resistance became an emerging problem of modern medicine. It revived interest in bacteriophage therapy (BT). Various studies are currently going on worldwide to determine the efficacy of bacteriophage use for the treatment of different bacterial infections. A special center for bacteriophage research—George Eliava Institute of Bacteriophage, Microbiology, and Virology is functioning in Georgia since the 1920s. Even when in western countries, bacteriophages were practically forgotten, in Georgia, both experimental studies and clinical usage of them still continued.

Aim: Purpose of our study was to study bacteriophage use in clinical practice in Georgia.

Materials and Methods: A special survey was done. Two hundred acting physicians (90 GPs, 86 pediatricians, and 26 surgeons) from different clinics in Tbilisi (capital of the country) and regions filled out anonymously questionnaires. The questions covered the following points—how often the bacteriophages were used in clinical practice, in which diseases, what was the general opinion of physicians regarding BT, how to facilitate the implementation of BT for optimizing antibacterial treatment. Demographic data were also collected.

Results: The majority (71.5%) of respondents use bacteriophage in clinical practice, mostly in outpatient settings (97.5%). There is no gender difference in physicians regarding prescription of bacteriophages, but physicians aged 45–50 years are using them most often (83.9%).

Bacteriophages are used by 48.9% GPs, 42.9 % pediatricians, and only 11.5% surgeons. BT is used mostly in respiratory system infections (40.5%) and intestinal infections (37.0%). More seldom in cases of urinary tract infections (12.5%) and skin infections (8.5%). The majority of respondents (53.5%) believe that phages can be used in all ages. 47.0% of respondents use bacteriophage without antibiotics. 41.5% of physicians rate the efficacy of bacteriophage on a five-point system with five points. 38.0% with 4, 5.5% with 3, 10.5% with 2 and 4.5% with 1 point. Physicians rate supply of bacteriophages by pharmaceutical firms as satisfactory (55.0% rate this by 3 out of 5). 23.5% of doctors want to reduce the price of bacteriophage, 23.0% believe that bacteriophage should be more accessible for patients, 24.0% recommend developing National guidelines on BT, and 28.5% would like to get more information about it.

Conclusions: The survey is first in this area, so additional investigations seem to be purposeful. Our results indirectly indicate on sufficiently high efficacy of BT. Possible ways to expand the use of BT were determined, such as educational measures and clinical trials.

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Poster Presentation

Clinical and Immunological Relationship in Children with Dilated Cardiomyopathy

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Introduction: Currently, there is no doubt that increased stagnation and increasing hypoxia of peripheral tissues and the myocardium, characteristic of heart failure (HF), can be the root cause of activation of the immune system. In this regard, it is of particular interest to study the role of cytokines in the processes of destruction of myocardial tissue in children at different stages of HF development, which is observed in dilated cardiomyopathy (DCMP) in children.

Purpose: Determine the clinical and immunological relationships in children with DCMP.

Materials and methods: We examined 45 children from 1 to 17 years old with DCMP who were hospitalized in the cardiac rheumatology departments of the Republican Specialized Scientific and Practical Medical Center for Pediatrics. The average age of the examined was 8.9 ± 0.6 years. We conducted clinical, instrumental, and laboratory studies. The examined patients underwent immunological research methods, including the determination of TNF-α, IL-1, IL-6, and IL-8, using standard test systems for enzyme-linked immunosorbent assay.

Statistical research methods: Carried out in the Windows 7 operating environment using the Statistica 6.0 program using the methods of parametric and nonparametric statistics, depending on the nature of the distribution of the studied parameters. Significance of differences was evaluated by student's criterion. For qualitative signs, a frequency analysis was performed with the determination of the significance of differences by the Pearson x2-criterion. The Spearman rank correlation coefficient was determined.

Results and discussions: The clinical course of DCMP was associated with the severity of heart failure at the time of the study. On the ECG, all patients showed signs of left heart hypertrophy, tachycardia, arrhythmias, violation of the repolarization phase, incomplete blockade of the right leg of the His bundle were recorded in patients. A correlation analysis between the level of cytokines and echocardiography revealed the dependence of the degree of dilatation of the left ventricle (LV) on the level of IL-1 and IL-8: the final diastolic size on the concentration of IL-1 ($r = 0.52$; $p < 0.05$); final diastolic volume from the level of IL-8 ($r = 0.57$; $p < 0.05$). An inverse relationship was established between the parameter of the exile fraction and IL-6 ($r = —0.48$). A decrease in the ratio of the amplitudes of early and late LV filling (V1/V2), indicating diastolic dysfunction, was also associated with an increase in the level of IL-8 (V1/V2—IL-8, $r = 0.59$; $p < 0.05$). The level of TNF-α in DCMP depended on the degree of circulatory failure.

Findings. In children with DCMP, there is a direct dependence of the degree of LV dilatation on the level of IL-1 and IL-8, the final diastolic size on the concentration of IL-1, final diastolic volume on the level of IL-8 and the inverse relationship between the parameter of the exile fraction and IL-6. The severity of these changes is determined by the stage of heart failure, its duration.

ID: 199/Poster Viewing 1: 35
Poster Presentation
Speech Disorders in Children with Down Syndrome

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Background: Down syndrome (DS) is the most common chromosomal abnormality whose incidence increases with advancing maternal age. However, approximately 70% of all DS fetuses occur in mothers aged less than 35. This is due to the greater number of pregnancies in this age group compared with the older women (Galeote M. 2008). Children with DS often have multiple anomalies, such as hypotonia, physical and mental retardation, congenital heart defects, and a typical facial phenotype. The speech development of children with DS lags behind typically developing children; the first words appear only by the age of 21 months, which is much later than that of normally developing children (Abbeduto 2007).

Objective: to study speech disorders in children with Down syndrome.

Materials and methods: we studied 22 children (13 boys, 9 girls) with DS. The age of patients at the time of analysis of clinical data ranged from 3 to 6 years. In addition, cytogenetic analysis was performed to these children. The studies were carried out at the Republican Screening Center and ReaCenter in Tashkent for the period from 2016 to 2019.Results: All observed children with DS experienced feeding, swallowing, and speech difficulties varying degrees due to a high-arched palate, small upper jaw, as well as low muscle tone in the tongue and weak oral muscles. The main syndromes of speech disorders were dysarthria, which is found in 12 patients (54.5%), delayed speech development in 6 patients (27.3%), alalia in 4 children (18.2%). Cytogenetic analysis showed that simple trisomy of chromosome 21 was detected in all children. All proband parents were not relatives.

Conclusion: Findings from our study showed that due to various stigmata of faces, all observed children had speech disorders varying degrees. Dysarthria prevailed in the examined children.

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Poster Presentation
Nodular Sclerosis Classical Hodgkin Lymphoma in a 11-year-old girl

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Introduction: Hodgkin lymphoma (HL) accounts for 5% to 6% of all childhood cancer. Nodular sclerosing Hodgkin lymphoma (NSHL) differs from other subtypes of classic Hodgkin lymphoma based on the appearance of the cells, and the most likely areas of the body where they occur.

Case report: The authors report a case of an 11-year-old girl who presented with chest pain that was felt as a continuous anterior mid-chest pressure. The patient was also complaining of mild fatigue, moderate shortness of breath, night sweats, and weight loss. She denied palpitations, fever, cough, sputum, or other complaints. Previous medical and family history was unremarkable. At physical examination, the patient appeared comfortable and not in pain or respiratory distress.

Cardiac examination showed rhythmic heart sounds without murmurs, and ECG was normal. Thoracic examination was within normal limits. The abdomen was soft and non-tender, with normal bowel sounds and no hepatosplenomegaly. Genitourinary, cutaneous, and neurologic examinations were normal. The examination of neck region showed the presence, in both supraclavicular spaces, of several rubbery non-tender enlarged lymph-nodes, which, at ultrasound evaluation, were round-shaped, hypoechoic, and partially conglobated,28 mm of maximum diameter. Chest X-ray showed multiple lymphadenopathy of the superior mediastinum and a poly-lobated mass in the middle lobe of the right lung. Surgical excision of a supraclavicular lymph-node was performed, and pathological examination was diagnostic for NSHL. The diagnostic work-up included a bone marrow biopsy showing no bone marrow involvement and a PET-CT scan, which showed multiple, partially conglobated lymphadenopathies located in the anterior mediastinum in the supraclavicular fossae, and in the right pulmonary hilum, with intraparenchimal peribronchial extension according with the diagnosis of a stage IIB HL. EuroNet-Paediatric Hodgkin's Lymphoma protocol was started with two cycles of chemotherapy plus radiotherapy. She had a poor response to the first line of treatment with the growth of the chest mass with a fixation on the PET-CT scan. High-dose chemotherapy and autologous stem cell transplantation were performed. The patient had a good clinical response with PET-CT scan without disease progression in 5-year event-free survival (EFS).

Discussion: Although a rare pathology in the pediatric setting, Hodgkin lymphoma should always be remembered as a possible diagnosis when studying a patient with adenopathies, especially cervical and supraclavicular. Chest X-ray is very important, as well as fine-needle aspiration cytology, which allows for a quick diagnosis. Autologous SCT has become the standard of care for refractory/relapsed HL, leading to durable responses in approximately 50% of relapsed patients and a minority of refractory patients. The long-term toxicities of such treatments should be carefully evaluated, and specific follow-up should become part of global care.

ID: 182/Poster Viewing 1: 37
Poster Presentation
Eosinophilic Esophagitis and Food Hypersensitivity

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Introduction: Eosinophilic esophagitis (EoE) is an inflammatory condition of the esophagus. It is one of the most prevalent esophageal diseases and the main cause of dysphagia and food impaction in pediatrics. Other associated symptoms are abdominal pain, vomiting, and gastroesophageal reflux disease-like symptoms.

Case Report: A 13 years-old girl was admitted to our emergency room with epigastric pain started 12h before. Nausea, vomiting, or diarrhea were denied. The year before, she had recurrent episodes (once or twice monthly) of epigastric pain, sometimes associated with heartburn and regurgitation and others with constipation, nausea, and vomiting. First, these episodes were associated with anxiety and bad eating habits. She had a history of asthma, seasonal rhinitis, and food allergies. The physical examination was normal, except for epigastric and lower abdominal pain. Vital signs, urinalysis, and analytic study with blood cells count, C protein reactive, hepatic, and pancreatic enzymes, and renal function were normal. She also did an abdominal and pelvic ultrasonography without relevant changes. She was treated with proton pump inhibitor (PPI), with transitory improvement, and oriented to General Pediatric Consult. There, she did the study for celiac and inflammatory bowel diseases, and they were also negative. Then, she performed an upper digestive endoscopy with biopsy, which revealed negative H.Pylori and Eosinophilic Esophagitis (alterations of stratified paved epithelium and intraepithelial inflammatory infiltrate due to eosinophils, >20 per high-powered field) of lower and middle esophagus. The

initial treatment was PPI, with improvement, but not totally remission of symptoms. Then, the proposed treatment was to maintain PPI and start food eviction and inhaled fluticasone propionate. She remains without new episodes now.

Conclusion: There are many causes for abdominal pain or regurgitation, including anatomical, functional, and psychogenic disorders. However, we have to take into account the diagnosis of Eosinophilic Esophagitis, when complementary exams are normal, symptoms are refractory to treatment, and if exists a history of allergies. Endoscopic evaluation with a biopsy is mandatory, whenever clinically suspected since diagnosis is based on histological findings.

ID: 137/Poster Viewing 1: 38

Poster Presentation

Correlations between Serum High-Density Lipoprotein Cholesterol Profile with Inflammatory Markers of Atopic Asthma and Aeroallergens Sensitization

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Romania

Introduction: Asthma is a chronic inflammatory disorder of the bronchi with heterogeneous pathogenesis. Studies have reported that a link between eosinophilic inflammation and serum lipids profile in atopic asthmatic children may exist. Blood eosinophil counts (B-Eos) and measurement of the fraction of nitric oxide in expired air (FeNO) are biomarkers of type 2 inflammation.

Purpose: The purpose of this study was to assess the correlation between serum HDLc values and FeNO values, B-Eos count, in atopic asthmatic children with aeroallergens sensitization.

Materials and Methods: A prospective study was conducted in "Victor Gomoiu" Clinical Children's Hospital from January 2016 until December 2018. This study included 100 children aged between 5 and 18 years diagnosed with atopic asthma and aeroallergens sensitization. In each patient, serum high-density lipoprotein cholesterol profile (HDLc) and systemic and local markers of inflammation for bronchial asthma were measured. The normal B-Eos level was considered >400 cells/mmc. The normal FeNO value varied according to age. Thus, the value is considered normal < 20 ppb in children aged 5–12 years old and in children aged 12–18 years old < 25 ppb; and modified lipid profile was defined according to National Cholesterol Education Program (NCEP) as high-density lipoprotein cholesterol (HDLc) <45 mg/dl. FeNO was measured using a chemiluminescence analyzer (NIOX MINO). B-Eos were determined using the complete blood count. Finally, the correlation between HDLc profile and B-Eos, FeNO value, was assessed using the Pearson Chi-Square test.

Results: Out of 100 patients, 34 had low HDL-c; out of these, only 13 had increased B-Eos, and 21 had normal B-Eos. 66 patients had normal HDL-c; out of these, only 43 had increased B-Eos, and 23 had normal B-Eos. Using the Pearson Chi-Square test to evaluate the correlation between HDL-c value and B-Eos count in atopic children with asthma and aeroallergens sensitization, we have obtained a p-value 0.01, B-Eos negatively correlated with serum HDLc. Out of 100 patients, 34 had low HDL-c; out of these, only 16 had increased FeNO value, and 18 had normal FeNO value. Sixty-six patients had normal HDL-c; out of these, only 34 had increased FeNO value, and 32 had normal FeNO value. Using the Pearson Chi-Square test to evaluate the correlation between HDL-c value and FeNO value in atopic children with asthma and aeroallergens sensitization, we have obtained a p-value > 0.05 (statistically insignificant).

Conclusion: In this study, HDLc is negatively correlated with B-Eos (at normal HDLc are increased B-Eos value, and at modified HDLc, the B-Eos has low value). HDLc is not correlated with FeNO value in atopic asthma and aeroallergens sensitization.

ID: 155/Poster Viewing 1: 39
Poster Presentation
Antibiotic Allergy In Children … Perception Versus Reality In A Level II Hospital in Portugal

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Introduction: Antibiotics are one of the most commonly prescribed drugs in children, and amoxicillin is the most used. The estimated incidence of amoxicillin allergy ranges from 1% to 10%, but over 90% are able to tolerate it once assessed. It seems that the rate of amoxicillin allergy may be decreasing, especially in children, but many patients are labeled as allergic without performing appropriate diagnostic tests, causing an overestimation of its true frequency. On the one hand, this causes an increase in parents' concern and medical visits. On the other hand, clinicians are often hesitant to prescribe an antibiotic to patients with suspected, but unproven, allergy, using alternative drugs that are usually more expensive and have a broader spectrum of antimicrobial coverage, causing higher rates of antibiotic resistance.

Purpose: Our purpose was to review the children with suspected amoxicillin or amoxicillin, and clavulanic acid allergy referred to a level II Hospital in Portugal.

Materials and Methods: We evaluated children referenced to our hospital from 2014 to 2018. The results were analyzed using Microsoft Excel Version 16.25.

Results: There were 88 children referred for evaluation. Sixty-one percent were female. The mean age at the time of the referral was 4 years (min 3 months, max 15 years). Seventy-two percent of the children were referenced from the emergency department, and 73% of the referrals were made since 2017. Forty-one percent had a suspicion of amoxicillin allergy and 59% of amoxicillin and clavulanic acid allergy. The suspicion was based on the development of exanthema (78%), edema (3%), and urticarial exanthema (2%). In some patients, specific IgE screening for amoxicillin, clavulanic acid, and penicillin was performed, but there were no positive results. All patients were submitted to an oral provocation test, and none had the suspicion confirmed.

Conclusion: Amoxicillin is a commonly prescribed antibiotic for the treatment of community-acquired bacterial infections in children. Given that it is a first-line treatment for most bacterial infections and the high frequency of viral exanthemas in this age group, it is common for the development of rashes during the course of treatment. Many cases are diagnosed as allergic reactions; however, only appropriate diagnostic tests can determine its true diagnosis. In our hospital, there were no confirmed allergies so far.

ID: 286/Poster Viewing 1: 40
Poster Presentation
Is it Really Temporary?—A Case Report

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Background: Hypersensitivity reactions are commonly classified into four types (Type I, II, III, and IV). Type IV hypersensitivity reactions are delayed and cell-mediated and are the only hypersensitivity reaction that involves sensitized T lymphocytes rather than antibodies. Henna skin painting plays an important role in various religious and cultural ceremonies. However, it is becoming more extensive worldwide, and temporary henna tattoos are becoming more popular, especially among teenagers. It can easily be obtained from a street-side artisan who uses black henna mixtures, including textile dye paraphenylenediamine (PPD), added to henna with the purpose of speeding up dyeing. However, it has been known as a strong, delayed-type skin sensitizer.

Case report: A 7-year-old healthy Caucasian girl, with a medical history of allergic rhinitis, admitted at the outpatient clinic due to a pruritic, erythematous papulovesicular eruption on her left leg. This lesion appeared after having applied a temporary henna tattoo by a street artisan during her vacation. The tattoo was painted on her left leg with a preparation advertised as "black henna." No injectable ink was used. Three weeks after the application of black henna, a pruritic, erythematous papulovesicular lesion on her skin, following the contours of the tattoo. A diagnosis of a type IV delayed hypersensitivity reaction was made. She started treatment with a topical corticosteroid for 1 week and an oral antihistaminic for 15 days with clinical improvement; however, it was required a five-day treatment with an oral corticosteroid for the resolution of the skin lesion. Subsequently, she remained with a hypopigmented skin lesion for several days.

Discussion: Natural henna is relatively safe; however, the addition of PPD to henna may increase the risk of allergic reactions and sensitization to PPD. Since PPD is a compound of a variety of hair and textile dyes, patients sensitized to PPD can manifest long-term contact dermatitis to these products. Hypersensitivity reactions to PPD tattoos may carry long-term risks, as permanent scarring, keloid formation, and postinflammatory pigment changes on the site of the tattoo. Therefore, clinicians should advise parents against these so-called "temporary" tattoo and its complications. Additionally, clinicians should report these cases to the public health department since PPD is not FDA approved for use as a skin product at any concentration.

ID: 138/Poster Viewing 1: 41

Poster Presentation

Imaging Features in a Neonate with Perinatal Stroke

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Introduction: The clinical signs and symptoms of perinatal arterial ischemic stroke (PAIS) may be subtle and nonspecific. Imaging studies provide a good choice for early diagnosis.

Case description: A 1-day-old male neonate was born at 37 weeks' gestation via cesarean section due to breech presentation. He weighed 2225 g (10-25th percentile), was 48 cm in length (50-75th percentile), and had a head circumference of 33 cm (50th percentile). Apgar scores were 6 and 8 at 1 and 5 min, respectively. Maternal hypertension developed 2 weeks before delivery and was treated. After birth, delayed initial crying and cyanosis were noted. Resuscitation was done, and the infant was hospitalized for observation. On physical examination, weak sucking and breath-holding while crying were noted. Cranial ultrasound on day 3 revealed very mild-increased echogenicity over the left thalamus, basal ganglia, and periventricular area with ventricular compression (Figure 1). Decreased right upper and lower limb movements were observed on day 4 of life. Repeated cranial ultrasound on day 5 of life revealed more echogenicity over left thalamus, basal ganglia, and periventricular area (Figure 1). For further evaluation, magnetic resonance imaging (MRI) and magnetic resonance angiography (MRA) with diffusion-weighted imaging (DWI) were performed on day 5 of life. The T2-weighted brain MRI (T2WI) showed high signal intensity (SI) over the left fronto-parieto-occipital cortical and white matter areas. MRA showed a flow reduction over the left MCA branch (Figure 1). Middle cerebral artery (MCA) infarction was diagnosed. Pre-Wallerian degeneration was also noted on DWI, with high SI over the left posterior limb of the internal capsule (PLIC), cerebral peduncle, and basis pontis (Figure 2). On the sixth day afterbirth, progressive ischemic change of finger/toe tips over the four limbs was noted. Heparin therapy was given for 7 days, and the skin gradually turned pink. Prothrombin time, activated partial thromboplastin time and survey for coagulation/thrombophilia, including antithrombin-III, protein C and protein S activities, and hyperhomocysteinemia, were unremarkable. For this index case, pregnancy-induced hypertension may be the only risk factor for stroke. The patient developed spastic hemiplegia in the following months. MRI performed when he was 8 months of age revealed multicystic encephalomalacia and Wallerian degeneration (Figures 1, 2).

Conclusion: Serial cranial sonographic follow up, and MRI examinations provide good diagnosis and outcome prediction in PAIS.

Poster Viewing 2

ID: 151/Poster Viewing 2: 1
Poster Presentation
The Level of Erythropoietin in the Blood of Obese Children is Lower than in Healthy Children

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Introduction. Obesity in children is associated with the development of metabolic disorders, iron-deficiency anemia, and obesity-related nephropathy.

Objectives: To assess and compare the level of hemoglobin and erythropoietin in obese and non-obese children.

Methods. We examined 77 children from 10 to 17 years old: 55 children with obesity (body mass index—BMI—from 25.0 to 43.25) and 22 children with normal BMI. The following laboratory data were screened: level of hemoglobin, red blood cell count (RBC), total protein, and liver enzymes level. In addition, we analyzed serum concentrations of Erythropoietin—marker that indicate the presence of renal tissue damage and disorders of erythropoiesis. Data were analyzed with the use of statistical package Statistica 10.0 for Windows-10. The significance of the differences was determined at P-value <0.05.

Results: According to the results of laboratory investigations, anemia was not detected in any of the surveyed children. There were no differences between the groups of patients ($p>0.05$) on the level of HB (141.55 ± 18.16 g/l vs. 139.00 ± 13.3 g/l), RBC (5.08 ± 0.66 x1012/l vs. 5.01 ± 0.64 x1012/l) and total protein level (74.33 ± 3.8 g/l vs. 74.09 ± 4.26 g/l). We revealed a positive correlation between the BMI and the level of HB ($r = 0.34$; $p<0.05$), and RBC ($r = 0.34$; $p<0.05$). Meanwhile, the level of erythropoietin in children with obesity was lower than in children with normal BMI (17.24 ± 10.9 and 36.31 ± 31.41; $p<0.001$), and a negative correlation was found between the BMI and the level of erythropoietin ($r = -0.26$; $p<0.05$).

The ALT level in children of both groups was comparable (18.98 ± 10.64 U/l and 15.40 ± 4.5 U/l; $p>0.05$); however, the number of children with an increased level of ALT was higher in the group with obesity (13.2% and 0%, $p < 0.05$). Was revealed a positive correlation between BMI and ALT level ($r = 0.32$; $p<0.05$); however, no correlation was found between the levels of ALT and erythropoietin concentration in the serum.

Conclusion: Despite the fact that obesity in children is not accompanied by anemia, the level of erythropoietin is this group was reduced in comparison with healthy children. Liver damage is not associated with a decrease in the level of erythropoietin, probably a decrease in its level is associated with obesity-related kidney damage. The role of erythropoietin as an early marker of obesity-related nephropathy requires further investigations.

ID: 222/Poster Viewing 2: 2
Poster Presentation
Olfactory Bulb Hypoplasia: Two Different Manifestations, Same Etiology

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Introduction: Kallmann syndrome (KS) is a rare genetic disorder that causes hypogonadotropic hypogonadism in association with hyposmia/anosmia. It affects both sexes with male predominance since it can be inherited as an X-linked, autosomal recessive or dominant trait. Absence of spontaneous puberty is the most characteristic aspect of hypogonadism, and it is important to differentiate between hypogonadism and constitutional delay of puberty since the last one is much more common. Some patients can also present with midline cranial anomalies, dental agenesis unilateral renal agenesis, cleft lip/palate, abnormal eye movements, and hearing loss, amongst others.

Purpose: Our aim is to highlight the variety of clinical manifestations in KS, especially at younger ages.

Case Report: A previously healthy 13-year-old male was observed in the outpatient department for puberty delay. His parents had noticed a small penis since he was 5. Pubic hair growth started at 9 years-old. He suffered from bullying at school. His father had a history of unilateral cryptorchidism. In physical examination, body mass index was 25 kg/m2, he presented with gynecomastia, 4 mL of testicular volume, and 5,5 cm penis. His serum levels of testosterone, luteinizing hormone, and follicule-stimulating hormone were very low. Skeletal age was 13,5 years. Abdominal and renal ultrasound were normal. Brain magnetic resonance imaging (MRI) showed hypoplasia of the olfactory bulb and nerves with normal appearance of the hypothalamus and pituitary. This confirmed the diagnosis of KS, so he started the induction of puberty with intramuscular testosterone. He is currently pending genetic testing results.

The second case is a 16-months-old girl with failure to thrive since birth. Normal psychomotor development. No relevant prenatal or family history. In physical examination, she had a relative

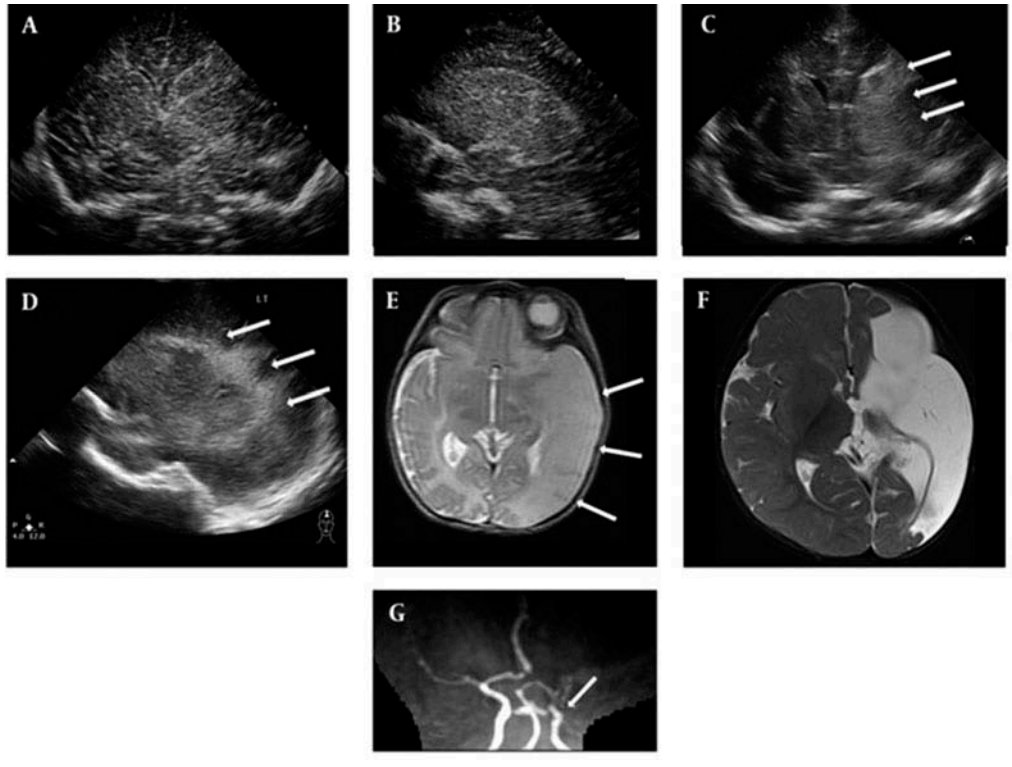

Figure 1. Ultrasound scan on day 3 (a, b) and day 5 (c, d) of life with coronal and left parasagittal views showed increased echogenicity over the thalamus and basal ganglia. The echogenic area was more apparent on day 5 than day 3 of life (arrow). On day 5 of life, T2WI showed left MCA territory infarction with a "missing cortex sign" (e) (arrow), and MRA showed flow reduction in the left MCA (g) (arrow). Multicystic encephalomalacia was demonstrated on T2WI when the patient was 8 months old (f).

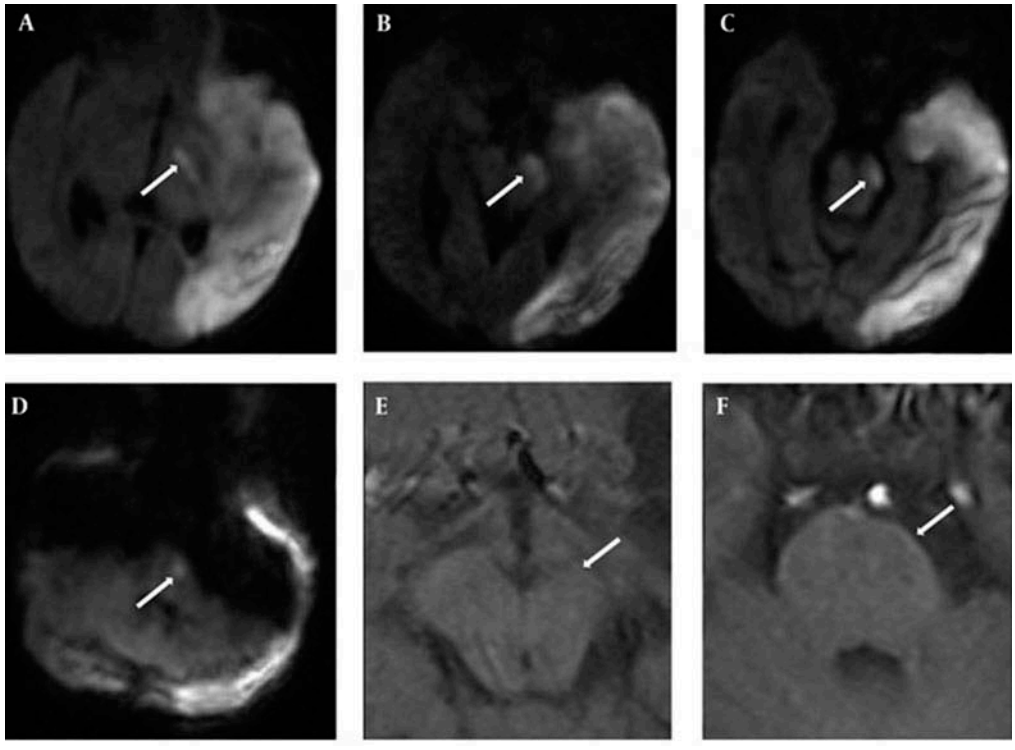

Figure 2. DWI findings on day 5 of life with DSCT Pre-wallerian degeneration over the PLIC (a), Peduncle (b, c), and basis pontis (d). T1WI performed when the infant was 8 months of age showed volume loss over the left cerebral peduncle (e) and basis pontis (f), compatible with Wallerian degeneration (arrow).

macrocephaly and an ogival palate. Basic blood workup was normal, and celiac disease and cystic fibrosis were excluded. Abdominal, cardiac, and renal ultrasound were normal. The arrayCGH for short stature investigation showed a deletion in the PROK2 gene, previously described in association with KS. Brain-MRI showed hypoplasia of the olfactory bulb, complementing the diagnosis.

Conclusion: KS morbidity is related to poor sexual health, infertility, and increased risk of osteoporosis. The first case is a typical presentation of KS and how it affects male individuals physically and psychologically. In the second case, we aim to show, even when the diagnosis is accidental, early diagnosis provides the opportunity for appropriate and individualized treatment to induce puberty and fertility at the right age, considering the patient's growth potential and psychosocial needs.

ID: 161/Poster Viewing 2: 3

Poster Presentation

The Case of Mediastinal Teratoma in Neonate Which wasn't Detected During the Antenatal Period

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Introduction: Teratoma of the anterior mediastinum is a rare (7-10%) location of encapsulated extragonadal teratomas, thus being congenital germ cell tumor. Mature mediastinal teratomas are composed of tissues derived from more than one germ cell layer and often include thyroid tissue. They are considered to be benign, but their presentation depends on the size, position, and lesions they cause.

Purpose: A clinical case report aimed as an improvement in managing a neonate with large mediastinal teratoma is presented.

Case description: The neonate presented with acute severe respiratory distress immediately after birth and required urgent intubation. Invasive artificial lung ventilation and measures for haemodynamic stabilization had begun. Antenatal ultrasound at 19–20 and 30–31 weeks of gestation exposed the absence of the tumor. The chest X-ray revealed large anterior mediastinal heterogenic mass limited by the lower lobe of the left lung. CT scan was not provided. The thoracic surgeon suspected the presence of cystic adenomatoid malformation. On the 3 days of life, despite intensive care due to unstable hemodynamics a death of a neonate occurred. Autoptical evidence is a large mediastinal teratoma 10x8x5 cm, weight 135,0 g, moderate secondary lung hypoplasia. The proximate cause of death was acute severe respiratory distress due to secondary hypoplasia of lungs together with considerable hemodynamic changes. A heart was shifted down and covered with teratoma. Thymus was not revealed. Histological processing revealed an encapsulated mass lesion of the anterior mediastinum, which was presented with immature discohesive mesenchyme with lymphoid assembly, brain tissue, multiple cysts of different sizes with inclusions of cartilage tissue, normal thymus tissue.

Results: In our case, a heart was shifted down, and the esophagus was compressed with the mass, thus causing complications in swallowing, secondary hypoplasia of lungs, and considerable hemodynamic changes.

Conclusion: Effective antenatal visualization, CT scans, and timely provided surgical intervention—these are key factors of successful management newborns. A prognosis for life depends on the timely diagnosis of the mass and a possibility of surgical treatment.

ID: 164/Poster Viewing 2: 4

Poster Presentation

Perforated Prostatic Utricle Cyst—An Unusual Cause of Isolated Neonatal Urinary Ascites

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Introduction: Isolated neonatal ascites is a rare condition with heterogeneous etiology with urinary ascites been an unusual cause. It occurs either due to distal urinary tract obstruction leading to its perforation or due to severe reflux of urine into the peritoneal cavity. We present a rare, previously unreported case of perforated prostatic utricle cyst presenting with neonatal gross ascites requiring peritoneal drainage.

Case Description: Term male infant with a birth weight of 3610 g was born via caesarean delivery to a 33-year-old primigravida mother. Serial antenatal scans detected small, left pelvic kidney with a cystic structure posterior to the urinary bladder. Cystic structure, which measured 3X3mm at 16 weeks scan, increased in size to 17X21X27mm by 34 weeks of gestation with possible fetal ascites. At birth, the baby presented with a distended, shiny abdomen with no generalized edema. He required non-invasive mechanical support for respiratory distress due to the splinting effect of gross ascites. Physical examination and blood investigations were unremarkable for an obvious cause of ascites. Peritoneal fluid analysis was suggestive of transudate, with low levels of protein, lactate dehydrogenase, triglycerides, and white blood cells. Raised levels of ascitic fluid creatinine (176umol/L) compared to plasma creatinine(108umol/L) confirmed urinary ascites. Postnatal US scan showed an anechoic (3X2.4X2cm) structure posterior to the bladder, whereas Micturating Cystourethrogram (MCU) confirmed the abnormal configuration of urinary bladder with a distended posterior urethra and no vesicoureteric reflux. MRI scan revealed a large (3X3X2.2cm) midline cystic structure located posterior-inferior to urinary bladder communicating with prostatic urethra, representing a utricle cyst(Figure 1). Operative cystoscopy showed a floppy utricle cyst likely causing partial bladder outlet obstruction at posterior urethra with possible leak site at posterior cyst wall. Intra-operative cystourethrogram showed distension of cyst with contrast with no identifiable leak. The child underwent vesicostomy with stent left in situ and was discharged on day 36 of life with oral uroprophylaxis antibiotics.

Discussion: Urinary ascites can occur as a result of the rupture of calyceal fornixes, ureter, or urinary bladder often associated with distal obstruction. Prostatic utricle cyst, an embryonic remnant of Mullerian duct, is usually asymptomatic but may present as urinary tract infection, urinary incontinence, or constipation. Besides routine diagnostic workup with peritoneal fluid examination and ultrasound, MRI and cystoscopy can help locate the exact cause of urinary ascites. Basic aim of management includes decompression by abdominal paracentesis, catheter drainage with or without vesicostomy or surgical exploration, and repair of perforation site. Prognosis depends on age, degree of compression, and extent of changes in the urinary tract.

ID: 171/Poster Viewing 2: 5

Poster Presentation

Noonan Syndrome with Multiple Lentigines and Congenital Myotonic Dystrophy Type 1 in a Newborn

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Introduction: Noonan syndrome with multiple lentigines (NSML), also called the Leopard syndrome, is a complex dysmorphogenetic disorder. The term LEOPARD is an acronym consisting of the main clinical features: (L)entigines, (E)lectrocardiographic conduction abnormalities, but also hypertrophic obstructive cardiomyopathy, (O)cular hypertelorism, (P)ulmonary stenosis, (A)bnormalities of genitalia, (R)etardation of growth, (D)eafness. The syndrome is part of RASopathies, disorders characterized by mutations in the genes encoding the proteins of the RAS/MAPK pathway. NSML is usually caused by a mutation in the PTPN11 gene, encoding tyrosine phosphatase SHP2. Myotonic dystrophy type 1 (MD1) is an inherited type of muscular dystrophy affecting muscles and other body systems. The forms of MD1 are mild, classic, and congenital, characterized by severe-generalized weakness and respiratory insufficiency at birth. MD1 is caused by mutations in DMPK (myotonic dystrophy protein kinase) gene. The inheritance of both NSML and MD1 is autosomal dominant.

Purpose: We present a case report about the rare form of RASopathy and congenital myotonic dystrophy 1 diagnosed prenatally in a patient with the familial incidence of these disorders.

Methods: Our patient is a boy born at gestational age of 38 weeks by caesarean section. After delivery, there were signs of perinatal asphyxia with the necessity of prompt resuscitation and endotracheal intubation. The neonate had clinical signs of foetal hydrops. Echocardiographic examination on the first day of life revealed extreme hypertrophy of interventricular septum, decreased systolic, and diastolic function. The heart function and pulmonary hypertension were improving according to regular cardiac examinations, and ventilatory support was terminated after 18 days. Regarding to neurological finding, there was severe hypotonia present from birth. The other clinical findings were low-set ears, high forehead, carp mouth, gothic palate, and equinovarus deformity of both feet. The patient was dismissed at the age of 2 months in stabilized health condition.

Result: Postnatal genetic testing confirmed mutation in PTPN11 and DMPK genes. At the age of 15 months, the boy has severe psychomotor retardation with the central hypotonic syndrome. He attends regular cardiac examinations; there is progressive hypertrophic obstructive cardiomyopathy with extreme hypertrophy of interventricular septum (17,3 mm), the function of the left ventricle is normal. Otoacoustic emissions are not present.

Conclusion: Hypertrophic cardiomyopathy played a major role in cardiopulmonary instability after birth; congenital MD1 probably had a share in serious patient´s condition. The long-term prognosis is unfavourable due to extreme hypertrophy of interventricular septum and associated cognitive deficit in both disorders.

ID: 180/Poster Viewing 2: 6

Poster Presentation

Outcome Trend of Hypoxic Ischemic Encephalopathy in Term and Near-Term Neonates

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Introduction: Hypoxic ischemic encephalopathy (HIE) has a prevalence of 2.5–3 per 1000 live births in the UK. It is a common cause of death and abnormal neurological outcome in term neonates. Therapeutic hypothermia (TH) became a standard treatment for moderate to severe HIE since 2010 and is known to improve outcome. We analysed data over 12 years period during 2007–2010 (pre-TH), 2011–2014 (TH becoming standard practice), and 2015–2018 (TH established as standard practice) to assess the outcome of local patients.

Purpose: To assess whether the evidence-based treatment has improved the outcome of term and near-term infants born with HIE in a large DGH over a 12-year period.

Methods: Retrospective data collection from the neonatal electronic dataset (SEND and Badgernet) and clinic notes on neurodevelopmental outcome.

Results: The total number of babies admitted with a diagnosis of HIE during these 4-year consecutive periods is 51 (2007–2010), 57 (2011–2014), and 54 (2015–2018). During these periods 39%, 41% and 26% babies had mild HIE; 40.3%, 33.3% and 26.3% had moderate HIE and 25.9%, 51.8% and 22.2% had severe HIE, respectively. During the three consecutive periods, TH was offered as a treatment in 27.2%, 68% and 89.2% of moderate and 44.4%, 50%, and 100% of severe HIE patients, respectively. No deaths were noted in mild HIE group in any of these periods. Total deaths in moderate and severe HIE were 11.7%, 10.7%, and 7.4% in consecutive

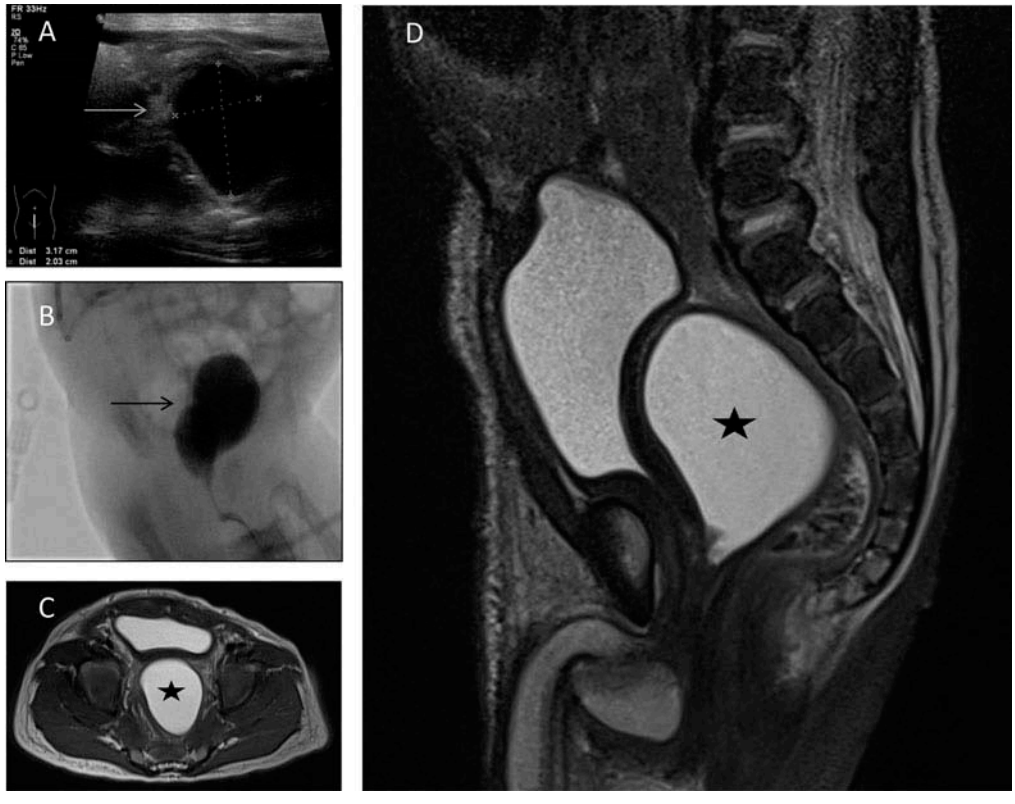

Figure 1. a) US scan showing 3X2.4X2cm anechoic structure posterior to bladder (whitearrow), b) MCU showing abnormal configuration of urinary bladder with a distended posterior urethra (black arrow), (c) and (d) MRI showing large midline cystic structure located posterio-inferior to urinary bladder communicating with prostatic urethra, representing a utriclecyst (star). US–Ultrasound;MRI–MagneticResonantImaging; MCU–Micturating-Cystourethrogram

periods. Of those neonates who were treated with TH at 2-year follow-up outcome was normal in 50% (2011–14) and 59.4% (2015–18). Not enough follow-up data were available for the period 2007–10. For moderate to severe HIE combined outcome of the death and CP or abnormal neurology was seen in 66.6% infants during both periods of 2011–14 and 2015–18 for those not treated with TH; as compared to 30% (2011–14) and 27% (2015–18) for those receiving TH. During 2011–14 no babies born at 35 weeks with HIE were accepted for TH and had a poor outcome, as compared to during 2015–18 when 35-week neonates received TH and had good outcomes.

Conclusion: Prevalence of HIE remains unchanged over a 12-year period locally. The establishment of a neuro-developmental follow-up programme locally, along with improved documentation, supports the provision of outcome data for high-risk infants. The trend shows better categorisation of HIE and easier acceptability of tertiary centres to offer TH as a treatment for eligible neonates over the years. Reduction of the combined outcome of death and CP or abnormal neurology by half demonstrates the definitive benefit of TH in moderate and severe HIE.

ID: 207/Poster Viewing 2: 7

Poster Presentation

Neonatal supraventricular tachycardia—An atypical presentation

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Introduction: Supraventricular tachycardia (SVT) is the most common symptomatic arrhythmia in children. It usually appears in the first year of life with a male predominance. There is a wide clinical spectrum from hydrops fetalis in utero to congestive heart failure in newborns and infants and palpitations in older children. Unspecific symptoms like poor feeding, vomiting, lethargy, pallor, or poor perfusion may represent a diagnostic challenge in the neonatal period as they can often be caused by sepsis or metabolic disorders. Medical management of SVT consists of vagal maneuvers, adenosine, and synchronous cardioversion if hemodynamic instability is present.

Purpose: To bring attention to SVT as a paroxysmal entity manifested by intermittent tachycardia episodes that need to be recognized and promptly managed.

Case description: We report a case of a full-term male newborn admitted to the neonatal intensive care unit at birth for grunting and respiratory distress. The antenatal history was uneventful besides isolated ventricular extrasystoles detected at 24 weeks' gestation ultrasonography. On examination, the vital signs were normal, but the child presented grunting and nasal flaring. Cardiac auscultation showed rhythmic heart sounds without murmurs. On pulmonary auscultation, he had the symmetric entrance of air. Chest radiograph showed an enlarged heart and normal pulmonary parenchyma. Sepsis workup was normal, but broad-spectrum antibiotics were initiated. Thirty minutes after admission, the patient presented with sudden pallor and poor perfusion, suggesting cutis marmorata (Figure 1). Cardiorespiratory monitoring showed a heart rate of 245–260 beats/min and regular narrow QRS complex tachycardia without P waves that suggested supraventricular tachycardia. Vagal maneuvers were started by placing an ice pack on the neonate's face followed by the administration of intravenous adenosine. After five adenosine bolus, the SVT was reverted. An ECG was performed afterward, showing normal sinus rhythm, and transthoracic echocardiogram showed no structural lesions. He was discharged from the hospital on day 13 of admission, receiving oral propranolol, which was suspended at 6 months of age. The infant is currently on follow-up, and there was no recurrence of SVT.

Conclusion: Episodes of SVT are characterized by abrupt onset and termination. A high index of suspicion is necessary, and this diagnosis should be kept in mind in neonates with sudden signs of poor perfusion since SVT in early infancy is dangerous and potentially fatal if not treated appropriately.

ID: 212/Poster Viewing 2: 8

Poster Presentation

Identification of Noise Sources and Possible Solutions for the Neonatal Unit in Francesc de Borja Hospital of Gandia

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Introduction: In neonatal units, due to its normal functioning and environment, electromagnetic contamination, vibro-acoustic contamination, light contamination, and ultraviolet radiation exist, among other harmful agents. The main aim of the hospitals must be to reduce the effect of those contaminating agents to levels that do not negatively affect the proper development of the children, who are generally in a vulnerable situation.

Purpose: In this work, the diagnosis of the noise levels in the neonatal unit was carried out, which consisted in the detection of the different sound sources and its characterization. Once the sound sources were characterized, some actions were suggested in order to reduce the contamination levels that exceeded the values suggested by pediatric associations and the World Health Organization.

Materials and methods: In order to carry out the acoustic analysis and the sound sources identification in the room, several sonometers were used inside and outside the incubators. Measurements were carried out in different periods of the year, as well as in different work shifts. In this way, different types of noise sources could be identified. Those sound sources were identified and characterized and some initial possible options for reducing their noise levels were presented. These solutions focus on the area closest to the incubators of the neonatal unit.

Results: Global sound pressure levels and detailed frequency responses of the different sound sources are presented. The sound sources were classified in two groups, those due to the day-to-day activity of the sanitary attention and those due to the sanitary instrumentation typical of neonatal units. Different blankets made from technical textiles are presented as possible solutions. Changes in sound pressure levels across the frequency inside the incubator, with and without these solutions, are presented in this work.

Conclusion: A preliminary study of the main noise sources that exist in the neonatal unit in Gandia Hospital was carried out. All the obtained sound pressure levels were higher than the noise level of 45 dBA recommended by pediatric associations. The design and organization of the neonatal room, with all the required equipment, does not leave too much room for the installation of classical acoustic conditioning solutions, so additional actions are required. These actions may involve the protection of the incubators by using blankets made from technical textiles that provide some degree of acoustic insulation.

ID: 111/Poster Viewing 2: 9

Poster Presentation

Relationship between Body Weight Perception and Weight-related Behaviours

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Background: Research on how the perception of being overweight relates to weight-related life-style behaviours is still controversial. Some studies have found that adolescents who perceive themselves as overweight are more likely to report using exercise as a weight control strategy. Other studies have shown that perceptions of being overweight are associated with lower physical activity, and some studies have reported no significant relationships between these factors.

Objectives: This study aimed to examine the prevalence of weight misperception and to explore the association of weight perception with physical activity and dietary intake.

Methods: A population-based, nationally representative cross-sectional survey was conducted of 920 Thai adolescents aged 13 to 24 years. Respondents were selected using stratified multistage sampling. Respondents who agreed to participate were asked to complete the Youth Risk Behavior Questionnaire. Descriptive statistics were generated to characterize the samples and to estimate the prevalence of weight perception, physical activity, and dietary intake. Correlations between BMI and weight perception were calculated using Spearman's correlation, and weight perception by gender was estimated using odds ratios (OR). Chi-square analysis was used to describe the independence for weight control behavior, dietary intake, and physical activity against gender and weight perception.

Results: Females were more likely than males to misperceive themselves as overweight (21.8% vs. 11.7%), whereas males were more likely than females to misperceive themselves as underweight (12.3% vs. 3.4%). Males were more likely than females to report a high intake of vegetables (45.7% vs. 38.0%), milk (39.1% vs. 38.0%), 100% fruit juice (20.9% vs. 17.7%) and soda or pop (38.5% vs. 20.6%). Males were also more likely than females to report vigorous physical activity of more than 60 min per day (38.1% vs. 21.3%) and vigorous exercise to strengthen or tone muscles (37.3% vs. 13.2%).

Conclusions: Gender differences in dietary intake and physical activity were identified. However, there were no significant differences in dietary intake and physical activity between adolescents who correctly perceived themselves as overweight and those who misperceived themselves as overweight.

ID: 135/Poster Viewing 2: 10

Poster Presentation

Nutritional Status In Children Under Palliative Care In Ukraine

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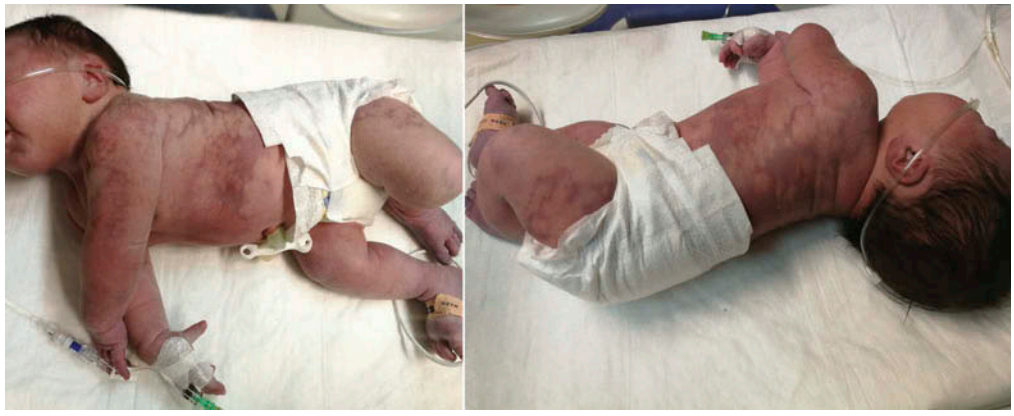
Background: Protein-energy deficiency (PED) is one of the most serious medical problems around the world. The prevalence of PED in different countries, depending on economic development, is 7-30% (in developing countries—20-30%). In Ukraine, a protein-energy deficiency is detected not quite actively, and knowledge about the importance of nutrition as well as special products of clinical nutrition is not sufficient between physicians.

Aim. To optimize the nutritional support of children with life-limiting diseases due to the different origin of the pathology of the central nervous system in palliative care.

Materials and Method. Three-centered cross-sectional study of nutritional state was held in 73 children with neurologic life-limiting diseases (cerebral palsy (40), congenital malformations of the central nervous system (28), genetic syndromes (5)): 14 toddlers, 23 children of preschool age, 18 children of elementary school age, 10 children of middle school age, eight children at the age of puberty. All children were under observation of mobile paediatric palliative care teams in two metropolises of Ukraine, Kyiv (59) and Kharkiv (14). The body weight, body length or height, body mass index (BMI), and skin folder thickness (SFT) were assessed. Requirements in energy were calculated, and individual nutritional support was organized.

Results. Due to difficulties of body length or height evaluation, we used ESPGHAN guidelines for segmental measurement (height of knee). We found that the body weight <-1 z-score was in 55 children (75.34%), the height of <-1 z-score was in 44 children (60.27%). Totally PED was diagnosed in 34 children (46.6%), among them severe PED degree was revealed in 29 children (85.3%). All children with severe PED had both stunting and wasting sings, SFT measured by Harpenden caliper ranged from 1.5 to 4.5 cm. No differences between data from all centers. For children who

Figure 1.



have been diagnosed with PED, the needed amount of clinical nutrition according to energy requirements was prescribed. In case of early age and severe wasting, the clinical nutrition was the only source of food. For 15 children with severe PED (20.54% from all observed children), a decision-making was worked-out for the placement of percutaneous gastrostomy. After 1 month of special feeding, anthropometric data were reevaluated. The number of children with severe PED has decreased up to 21 (61.76%) with a corresponding decreasing in frequency of wasting but not stunting. The hypercaloric clinical product (1.5–2.0 kcal/ml) was prescribed for eight children due to small-tolerated volume. Also, we recommended speech therapists and physical therapists, and individual monitoring of the nutritional status involving parents as additional support.

Conclusion. Children with life-limiting diseases are in the high-risk group for a multifactorial nutritional deficiency. Organizing of feeding with special isocaloric/hypercaloric products improves the nutritional state of children with neurological impairments. Most obvious improvements were revealed in children under 3 years. Careful monitoring of the nutritional status with worked-out individual feeding programs are crucial factors for surviving of children with life-limiting diseases through the normalization of nutritional state.

There were no conflicts of interest for the authors.

ID: 188/Poster Viewing 2: 11

Poster Presentation

Parental Perception of Childhood Ideal Weight and Healthy Diet in the State Of Qatar

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Objectives: To investigate the parents understanding and perception of their children ideal weight and healthy diet in the State of Qatar

Methods: A cross-sectional prospective study was conducted at Hamad Medical Corporation in the State of Qatar. Parents of children under the age of 14 years were offered an interview

Results: A total of 398 parents agreed to be interviewed (response rate 94%), Around 230 (58%) parents have at least one housemaid to help with housework, including food preparation. Almost 151 (37%) of the children fell into the category of overweight and obese, and only 68 (17%) of parents perceived the same. More than 179 (45%) of participants stated that childhood weight should be monitored prior to 5 years of age, while around 35% stated the same, but for children ages 5–14 years. When asked if parental eating habits can have an influence on childhood weight, 324 (81%) agreed, mothers were the main category who was ere preparing food at home with almost 50% of the times, while housemaids did 30%, followed by grandmothers (16.6%) and

fathers (3.4%), however only (60%) schools meals were prepared at home. Sixty-three percent of parents chose the quality of food based on nutritional values, while 44% and 35% chose it based on safety and taste, respectively. It was found that 187 (47%) of families did not receive counseling by their children's health-care providers about healthy children's diet. Around 372 (94%) and 379 (96%) of families agreed that a healthy diet would lead to better school performance and better quality physical activity, respectively. It was found that parents living in the capital Doha, have a better insight that healthy diet results In better school performance ($p = 0.032$) compared to families living in the rural areas

Conclusion: Parents play an important role in preventing childhood obesity, and they are often a target for public health interventions. Our families are aware of the positive impact of a healthy diet on overall well-being. The State of Qatar is a very well-resourced country, including the medical field, and it would be cost-effective to train and professionally develop our pediatricians and primary care physicians to be more experts in tackling obesity. Counseling the whole family (rather than children alone) regarding a healthy diet and exercise can have a great impact on childhood weight and overall wellness.

ID: 246/Poster Viewing 2: 12

Poster Presentation

Nutritional Risk and Malnutrition in Pediatrics: From Anthropometric Assessment to STRONGkids Screening Tool

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Introduction: Prevalence of malnutrition in hospitalized children is high and associated with negative health impact.

Purpose: The authors aim to characterize the nutritional status of hospitalized children as well as to compare nutritional risk stratification using the STRONGkids tool and anthropometric assessment.

Methods: A prospective study was conducted from March to June 2019 in a pediatric unit of a second-level hospital. Children with ages between 1 month and 17 years were included. Nutrition screening (STRONGkids) was performed, and demographic and anthropometric variables were determined (z-scores for height-for-age, weight-for-age, weight-for-height, and body mass index were compared to the World Health Organization reference values) and related to the underlying disease (cause of hospitalization; hospital stay; the presence of chronic disease).

Results: A total of 209 children were evaluated, and 188 of which were included. Median age was 4.6 years, and the median hospital length of stay was 4 days. Fifty-four point 3% were classified with "moderate risk" and 2.1% with "high risk" of developing malnutrition; 25.3% were effectively malnourished. Of the 105 children from whom it was possible to calculate the z-scores, 6.2% presented acute malnutrition, and 13.9% presented chronic malnutrition. The STRONGkids score correlated positively with nutritional status at admission, pathology type at admission, and presence of previous disease ($p < 0,05$).

Conclusion: STRONGkids is a simple and quick nutritional screening tool for hospitalized children that relates with nutritional status at admission. Due to a considerably high percentage of children identified at risk for malnutrition, it's essential to early identify and provide nutritional intervention during hospitalization.

ID: 133/Poster Viewing 2: 13
Poster Presentation
A Common Symptom Hid a Rare Diagnosis

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Introduction: Rhabdomyosarcoma (RMS) is rare, representing only 3 to 4% of pediatric cancers overall; however, it is the most common soft tissue tumor of childhood and is responsible for approximately one-half of all soft tissue sarcomas in this age group. The main sites involved are head and neck structures (~40%), genito-urinary track (~25%), and extremities (~20%).

Case report: A 13-year-old caucasian, previously healthy male, admitted in a paediatric emergency department for liquid stools (around 12 episodes/day), some of them bloody, without mucus, for about 1 week. No vomits. No fever. A lump in the inguinal region had been noted 1,5 months before, with more evident growth in the last few days. On physical examination, he had reasonable general state, pale skin, dry lips, adherent, hard, and painful lymphadenopathies on the left and right inguinal regions, about 3–4cm, hard mass in the perineal region, without local inflammatory signs. Laboratory tests revealed LDH 1697U/L and CK 324U/L. An inguinal ultrasound showed bilateral inguinal lymphadenopathy and a solid heterogeneous mass, about 10x5,5 cm. On Magnetic Resonance Imaging (MRI), the tumour seemed to have its origin on the prostatic gland, invaded the pelvic structures—rectum, anal canal, penile root, and urethra—and metastasized to regional and distant lymph nodes, liver and bone. The patient was referred to an oncology hospital where biopsy diagnosed Alveolar Prostatic Rhabdomyosarcoma histology and the presence of FOXO1 translocation.

Conclusion: Prostate primary site, presence of distant metastases, tumor size > 5 centimeters, and age > 10 years at presentation are all associated with poor prognostic in rhabdomyosarcoma. Alveolar histology and presence of FOXO1 translocation anticipates a very poor outcome with a 5-year event-free survival of around 10%.

ID: 254/Poster Viewing 2: 14
Poster Presentation
Good Death Term in the aspect of Paediatric Palliative Care Nursing

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Introduction: When faced with serious illness and the possibility of a child's death, a family experiences many uncertainties and traumatic experiences. The expected normal order of life is significantly disrupted, and a diagnosis of a life-threatening or life-limiting illness can greatly alter family functioning and overall well-being. The importance of addressing a child and their family members' physical, emotional, cultural, spiritual, and psychosocial needs has been well documented in pediatric palliative care.

Discussion: Death is one of the main threats for a human being. It is usually seen as an adult or geriatric populations' problem, so the idea of "children and babies may die, too" is mostly avoided or prohibited from talking by societies, families, health-care professionals, etc. And all of these children and families suffer from during end of life or/and bereavement process. To stop these nurses and other health-care professionals are important to deliver care in the aspect of good death. Good death or die with dignity for child and their families contain "free from avoidable

distress and suffering for patients, families, and caregivers; in general accord with patients' and families' wishes; and reasonably consistent with clinical, cultural and ethical standards in terminal illnesses'. In other words, freedom from distressing symptoms, dying in a favorite place, good relationships with family members and medical staff, a feeling that the dying person's life is complete, maintained dignity, preparation for death were also other parts of a good death. To ensure good end for pediatric palliative care, nurses should take advanced nursing practices and responsibilities, but this is not simple because this aspect of nursing is not given by education, neither undergraduate nor post-graduate education. Nursing education at the undergraduate level is mainly based on the medical model. Therefore, while students are receiving detailed information about the protection, prevention, treatment, and rehabilitation of diseases, and they have a limited education on the end of life. As a result, the student nurses and nurses do not want to care for the individual who has a terminal illness, do not feel ready for them, feel a sense of inadequacy, and the care of the patient and his/her family is negatively affected. So education should be planned end of life care, a good death, and palliative care to stop possible negative effects.

ID: 261/Poster Viewing 2: 15
Poster Presentation
Claudication, Petechiae and Homeopathy, What is the Relationship?

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Introduction: Leukemia is one of the most common oncologic disorders in pediatrics, with acute lymphoblastic leukemia (ALL) being the most common neoplasia of pediatric age.

Case Description: 15-year-old male, piano player, and rock climber, with no relevant personal/familiar background. In September 2018, he started feeling bone and joint pain, with no history of trauma. Initially diagnosed as right acromioclavicular arthritis. He resorted multiple times to medical care due to maintenance and aggravation of complaints, having been assumed overload injury, medicated with NSAID and antibiotic. He started physical therapy with partial improvement for some periods. He was submitted to analytical, immunological, and peripheral blood smear studies, all without changes. Ankle MRI showed significant bone marrow edema of the astragalus. In January 2019, the patient noticed petechiae in the lower limbs and some episodes of epistaxis. In the emergency department, the objective examination revealed a hemorrhagic blister in the jugal mucosa, enlargement of the lower limb petechiae, splenomegaly, and gait supported by crutches. The patient was under therapy with homeopathic medicines for about a month. On complete blood count, he presented 39.4% of leukoblasts and less than 10.000/uL platelets. Splenomegaly was confirmed on an abdominal ultrasound. Thereafter, he was transferred to the Portuguese Institute of Oncology, where the diagnosis of ALL strain B with testicular involvement was confirmed.

Conclusion: This case aims to raise awareness about the importance of valuing the patient's clinical status and having in mind the most common symptoms of each pathology so that an early diagnosis is possible. Massive dissemination of homeopathy and patient's compliance with alternative treatments may contribute to the irreversible delay of diagnoses and treatments.

ID: 149/Poster Viewing 2: 16
Poster Presentation
Agenesis of Lateral Incisors as an Indicator for Hereditary Syndromes

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Introduction: The differentiation of the dental lamina takes place during the sixth week of embryonic development. Later, at 8 weeks of development, the emergence of the 10 dentary buds that correspond to the deciduous teeth takes place. Dental dysplasias are associated with alterations of genes involved in either dentinogenesis or amelogenesis, as well as the stimulating factors that induce said processes during the second month of intrauterine life. Specifically, mutations in homeobox genes MSX1 and MSX2 are related to incisor agenesis. (1) The objective of this paper is to identify the hereditary syndromes that are most frequently associated with lateral incisors agenesis.

Materials and Methods. A review of scientific journals was carried out. The sample consisted of review papers and original meta–analysis studies published between the years 2014 and 2018, in both English and Spanish. Keywords used were: agenesis, lateral incisors, hereditary syndromes, MSX1, and MSX2. The search engines that were utilized were Medline, Scopus, Scielo, and Latindex.

Results. It has been determined that lateral incisors agenesis can be present in several hereditary syndromes and, in some cases, can be essential to establish a diagnosis (see Table 1).

Discussion. An important number of hereditary syndromes present dentary dysplasia's as a clinical sign, and, in most cases, it can be crucial to establish a diagnosis. Another important aspect to consider is the association that exists between mutations of the MSX1 and MSX2 genes, the presence of cleft palate, and the occurrence of colorectal cancer. (3)Conclusions. In order to establish the diagnosis of certain hereditary syndromes, the knowledge of its association with dental anomalies can be of vital importance

ID: 191/Poster Viewing 2: 17
Poster Presentation
If He had not Eaten Fish

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Introduction: Several metabolic disorders manifest themselves by a sui generis odour of the patient. Primary trimethylaminuria is a rare-inherited disorder and is characterized by a fishy odour that results from excess excretion of trimethylamine in the urine, breath, sweat, and other body fluids. It is the result of a deficiency in the flavin-containing monooxygenase 3 enzyme that converts trimethylamine to non-odorous trimethylamine N-oxide. The trimethylamine is derived from dietary precursors, such as choline and trimethylamine N-oxide. This condition is generally considered benign as elevated trimethylamine levels are not toxic, but patients often suffer from social rejection that can lead to major psychosocial problems.

Purpose: Diagnosis is often missed and delayed because few health professionals can recognize it. The early diagnosis can avoid many of the psychosocial problems and offer treatment to alleviate manifestations.

Case description: We report the case of a 4-year-old boy who was hospitalized during an asthma exacerbation. In the ward, after lunch with fish, a fishy smell was noticed and seemed to come from this boy. His parents reported that they had already noticed that when he eats fish became smelly and for that. Parents also reported that there was a first cousin who also had these symptoms. Due to his asthma, the boy has multiple hospitalizations without any suspicion being raised. There were reports that in the kindergarten some days, the other children put him aside because of the smell. Following the presentation of the diagnostic hypothesis to the parents and obtaining their written consent, a genetic study of the flavin-containing monooxygenase-3 gene. The study confirmed the diagnosis was given some guidance to control the smell, and a genetic consultation was requested for Family genetic counseling.

Conclusion: Primary trimethylaminuria is a rare genetic disease that can go unnoticed for a long time. It manifests itself with the fishy smell of the patients when they eat certain foods that

contain trimethylamine precursors. There are no physical signs associated with primary trimethylaminuria. The main treatment options are a diet low in trimethylamine precursors and the use of acidic soaps and body lotions. Although it does not cause increased mortality or physical morbidity, it may be the cause of social isolation and low self-esteem. The proper diagnosis facilitates clinical management and can avoid psychosocial issues.

ID: 236/Poster Viewing 2: 18

Poster Presentation

A 3-Year-Old Child Killed a Dog – Bad Behavior or Pathogenic Variant in the ZMIND11?

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Introduction: ZMYND11 gene is expressed in several tissues, including the brain; however, little is known about its function, making it difficult to establish a genotype-phenotype correlation in patients with pathogenic variants of this gene.

Case Report: A boy was born after an uncomplicated pregnancy at 39 weeks, from a non-consanguineous, Portuguese, and healthy parents. The delivery was by C-section because of fetal macrosomia. Weight and length were between percentile 50 and 85. There was no family history of neuropsychiatric diseases. At the age of three, he starts to show low frustration tolerance and aggressive behavior like killing a dog, trying to stab family members, and destroying toys. He often hurts himself without apparent pain; he cut his lip and a finger without reaction. He also often places objects in his nose and mouth. He had a moderate global developmental delay, more prominent at speech level. At the age of five, he was medicated with Methylphenidate and at six with Risperidone for hyperkinetic behavior and significant behavior difficulties. He also started special education and speech and occupational therapy. Psychological assessment at the age of 10 showed a mild intellectual disability (Full-scale IQ 55, Verbal IQ 54, Nonverbal IQ 61—WISC III). The patient has subtle dysmorphic features (low set ears, prominent and anteverted ear lobes, hypertelorism, and middle phalanx hypoplasia of the fourth toes of both feet). He also has Hashimoto's thyroiditis. During the etiological investigation, he performed brain MRI, karyotype, molecular testing for fragile X and Smith-Magenis syndrome, telomere rearrangements, biotinidase enzymatic analysis, aCGH, all with normal results. Clinical Exome revealed a de novo pathogenic variant, c.884C>T in exon 10 of the ZMYND11 gene, associated with autosomal dominant mental

Table 1. Hereditary syndromes frequently associated with maxillary and/or mandibular lateral incisors agenesis

Syndromes	Maxillary incisors	Mandibular incisors
Down	*Unilateral or bilateral*	*NA*
Kalimann	*NA*	*Bilateral*
X-linked hypohidrotic ectodermal dysplasia (HED)	*Bilateral*	*NA*
Rieger	*Bilateral*	*NA*
Johansson-Blizzard	*Bilateral*	*Bilateral*
Lacrimo-auriculo-dento-digital	*NA*	*Bilateral*
Wolf-Hirschhorn	*Bilateral*	*Bilateral*
Witkop	*Bilateral*	*Bilateral*

retardation type 30 (MIM616083). Currently, the patient is 12 years old, maintains an aggressive, opponent, and challenging behavior, and is under multidisciplinary care.

Conclusion: Pathogenic variants in ZMYND11 gene have been recently reported in patients showing intellectual disability, social difficulties, aggressive behavior, and subtle dysmorphic facial features. Currently, to the best of our knowledge, there are 10 published cases of patients harboring pathogenic variants in the ZMYND11 gene. Early diagnosis might be critical to improve prognosis and to allow genetic counseling. Next-generation sequencing, as shown by this case, is a time-saving and cost-effective procedure, allowing a remarkable improvement in the etiological diagnosis of childhood neuropsychiatric diseases.

ID: 250/Poster Viewing 2: 19

Poster Presentation

A Common Respiratory Infection brings to Light a rare Renal Abnormality

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Introduction: Unilateral renal agenesis (URA) is defined as the one-sided congenital absence of renal tissue resulting from the failure of embryonic kidney formation at about the fifth gestational week. The incidence of URA is unknown because it is usually asymptomatic. Autopsy studies report an occurrence of 1 in 1000, while the incidence of symptomatic URA is 1 in 1500. The male-to-female ratio is 1.8 to 1, and it occurs more frequently on the left.

Purpose: The purpose of this case report is the presentation of a 14-year-old male with a solitary kidney, as a finding during his hospitalization for lower track respiratory infection.

Case description: A teenage male student of 14 years of age presented to our emergency department due to high fever ≤40oC for 24h and complaints of lack of appetite, reduced feeding, and fluid intake. On examination, the patient was febrile (T: 38,7 oC) with the mildly affected general condition. During auscultation of the respiratory system, breath sounds of right lower lobe were diminished without crackling sounds, while findings of other systems were normal. We performed a complete blood count (CBC), routine biochemical investigations, a chest x-ray, and admitted the patient to our clinic for lower track respiratory infection. Hemoglobin was 15,8, total leukocyte count was 6,840/mm3 with differential count of polymorphs 74,4%, lymphocytes 18,4%, monocytes 2% and platelets 227,000/mm3. Blood urea was 31.5mg/dL, and serum creatinine level was 1.07mg/dL, considerably elevated for the duration of symptoms. Urine sample was sent, which revealed proteinuria. Based on these findings, we performed an ultrasound scan of the abdomen, which revealed the absence of the left kidney. Further investigation via magnetic resonance imaging took place and confirmed the unilateral renal agenesis without the presence of other abnormalities of other mesonephric duct derivatives.

Results: Upon consultation with a pediatric nephrologist, we followed up the patient with daily blood pressure measurements and repetition of urea and creatinine levels for a week, as well as blood gas sample, biochemical tests of urine and C3, C4 complement levels which all came back normal. URA is compatible with normal longevity; nevertheless, patients should have annual surveillance. For that reason, the teenager remains under regular, annual surveillance of his kidney function by a nephrologist.

Conclusion: This case emphasizes the importance of assessing a patient with a holistic approach without focusing on the system that the presenting illness is localized in. Laboratory findings are useful tools when they are continuously compared to patients' clinical manifestations; otherwise, important diseases may remain undetected, or we over-diagnose our patients.

ID: 269/Poster Viewing 2: 20

Poster Presentation

Severe Hypotonia And Seizures In A Newborn

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Introduction: D-bifunctional enzyme (DBP) deficiency is a rare autosomal recessive disorder caused by mutations in the HSD17B4 gene that lead to impaired β-oxidation of very long-chain fatty acids (VLCFA) in peroxisomes. Characteristics of the disorder, already manifesting during the neonatal period, include craniofacial dysmorphia, muscle hypotonia, hepatomegaly, weakened neonatal reflexes, hearing impairment, and epileptic syndrome.

Case Report: So far, there have been three patients with the disease diagnosed in Slovakia. In the case report, we present the fourth diagnosed case of DBP deficiency. The child was from uncomplicated pregnancy, with prenatal and perinatal history without remarkable features, without a consanguinetic relationship of parents. After birth, the baby was significantly hypotonic. Occasional twitches of limbs were observed, but these spontaneously subsided. The child had absent otoacoustic emissions; other screening tests were normal. Since the second day of life, seizure activity gradually became generalized. Severe hypotonia, tendon reflexes absence, weaker sucking reflex, and minimal spontaneous physical activity persisted. The child required continuous anticonvulsant treatment. MRI brain examination in the first month of life showed delayed white matter myelination, supratentorial leukoencephalopathy, and probable bilateral perisylvian polymicrogyria. Genetic examination revealed normal 46XX karyotype. Zellweger and Prader-Willi syndrome, spinal muscular atrophy, and congenital myotonic dystrophy syndrome were excluded. At the age of 4 months, otoacoustic emissions were still absent. Based on the pathological profile of VLCFA, we thought of DBP deficiency, which was later confirmed by mutation analysis, with a finding of causal mutation of 46G>A in a homozygous state. In the eighth month of age, the child had still delayed psychomotor development; it was significantly hypotonic, had hepatomegaly and nystagmus. There were minimal spontaneous movements, and the child had difficulty eating.

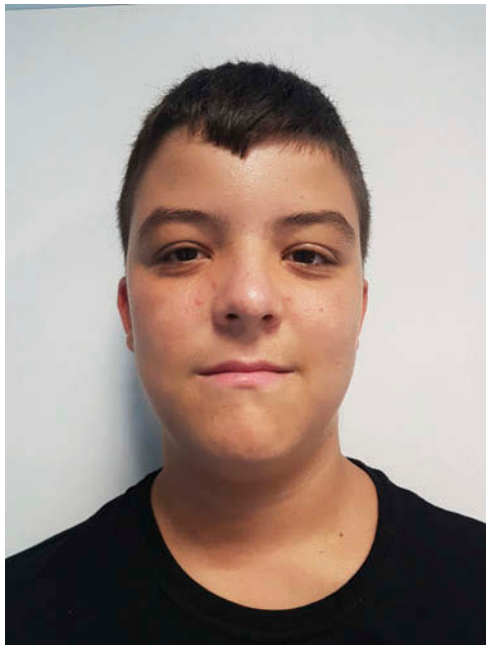

Figure 1. Photograph of the patient shows subtle dysmorphic facial features.

Conclusion: In children with the severe hypotonic syndrome, hearing impairment, and epilepsy manifesting during the early neonatal period, it is necessary to take hereditary disorders of peroxisome metabolism into consideration. Nowadays, diagnostic methods, along with molecular genetic analysis, are available. Despite the current unfavorable prognosis of children with DBP deficiency, the correct diagnosis is needed for the possibility of prenatal diagnostic testing.

ID: 140/Poster Viewing 2: 21

Poster Presentation

Innominate Artery Compression Syndrome: A Case Report

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Introduction: Stridor is a frequent physical sign in the pediatric population, present in a great number of both acute and chronic conditions. Differential diagnosis is based on the age of presentation and speed of onset. In infants, persistent biphasic stridor is more often due to a congenital abnormality, resulting in fixed airway obstruction, either by extrinsic compression, intraluminal mass, or mural change of the airway.

Case Description: Infant boy, 5 months old, admitted since birth in a level III pediatric hospital, with a history of prematurity (32 weeks and 5 days), low weight at birth, and corrected esophageal atresia with tracheoesophageal fistula, with associated severe gastroesophageal reflux disease and feeding difficulties. Over the course of several weeks, he presented with persistent biphasic stridor with multiple episodes of severe dyspnea, requiring supplementary oxygen. These episodes were not related to feeding and were not always attributable to body position changes. A bronchoscopy was performed, revealing tracheomalacia of the middle third with a reduction of 40-50% of the lumen, as well as a pulsatile impression on the anterior aspect of the trachea consistent with the brachiocephalic artery. CT angiography confirmed the diagnosis of innominate artery compression syndrome, with the aberrant vessel molding the trachea and left main bronchus. The patient was referred for surgery and underwent aortopexy with an excellent outcome.

Conclusions: Innominate artery compression syndrome is a rare congenital anomaly, included in the group of vascular rings and slings. These abnormalities of the aortic arch are frequently associated with other congenital malformations, including tracheoesophageal fistulae. Surgical treatment is indicated only in symptomatic cases, which represent a minority of patients. This case illustrates the importance of investigating uncommon causes of stridor in infants presenting with persistent and not fully explained stridor, especially in those with known congenital malformations.

ID: 169/Poster Viewing 2: 22

Poster Presentation

Evaluation and Treatment of Primary Nocturnal Enuresis in Secondary Health-Care Facility

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Introduction: Primary nocturnal enuresis is defined as a condition of continuing urine incontinence depending on several factors in children older than 5 years.

Aim: To present the possibilities of a general hospital for diagnostic evaluation and treatment of children with primary nocturnal enuresis.

Material and method: data for this retrospective study were collected from the author's hospital electronic system, "moj termin" for the period 1.01.2016–31.01.2019. Standard statistical procedures were used for data analyses.

Results: Out of 37 children who were sent by their family doctors or urologist because of urinary incontinence. Six children were excluded from the study, 2 because of the presence of diurnal enuresis and 4 because of age less than 5 years. Thirty-one children were evaluated with complete history, physical examination, urinary tract ultrasound, urinary, and blood sample. Thirty-one children were treated with oral desmopressin and proper follow-up. In 19 children, desmopressin reduced the number of wet nights, 6 children achieved complete dryness, and 5 children had no effect on the treatment. Relapse occurred in 12 children (63,1%).

Conclusion: primary nocturnal enuresis can be managed successfully by an appropriately trained paediatrician in general hospital.

ID: 153/Poster Viewing 2: 23
Poster Presentation
Examining the Effects of Zoloft at Time of Delivery: An Interesting Case Study

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Introduction: The effect of SSRIs on newborns is not currently well understood.

Purpose: Our objective was to examine the consequences of a 25 mg dose of Zoloft on a newborn at the time of delivery.

Materials and Methods/Case Description: This is a retrospective case study of the effects of Zoloft on an infant born to a healthy 17y/o white female via normal vaginal delivery in a rural community hospital.

Results: The newborn exhibited hypoxia related to perinatal depression, which resolved with CPAP and supplemental oxygen. We suspect the cause for hypoxia in the newborn is explained by Zoloft at the time of delivery.

Conclusion: Mood and anxiety disorders are common in women during their childbearing years, especially during and after the gestational period. There is an increasing need for further studies to better examine the consequences of exposure to SSRIs and other antidepressants on newborns at the time of delivery.

ID: 172/Poster Viewing 2: 24
Poster Presentation
Clinical Case of the Reproductive System Congenital Malformation: Deficiency of 17-β hydroxysteroid Dehydrogenase

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Introduction: Over the last decade, scientific studies have revealed an increase in the number of patients with sexual development pathology. Timely diagnostics, in this case, is necessary for the choice of sex and further child's social rehabilitation. The choice of gender should be determined by both chromosomal and gonadal sex, and appropriate surgical correction of the external genitals should be performed as early as possible. Therefore, it is interesting to describe a clinical case of

the patient S. diagnosed with "Congenital anomaly of the reproductive system, charged for diagnostics and treatment in Scientific center of pediatrics and children's surgery.

Anamnesis vitae: patient S., 16 years old. The child had been growing and developing as a female. Heredity is not burdened. Behavioural abnormalities were not observed. There were no appeals to the doctors due to the lack of complaints. In March 2018, the first visit to the doctor reasoned by the lack of mensis. Medical examination on admission: the child's health status is relatively satisfactory. Status genitalis: external genitalia with signs of impairment, developed according to the mixed type, the clitoris is hypertrophied, external genitalia are in the form of large labia. Urogenital sinus is determined.

Laboratory studies: whole blood analysis, biochemistry tests—without pathology, infectious status-negative. IHL: DHEA—227.4 μg/DL, LG-46.5 IU/ml (reference values: 2–12 IU/ml), FSH −29.3 (3–12), estradiol −32.0 PG/ml (12–166 PG/ml). Pelvic MRI: aplasia of the prostate and uterus. Signs of bilateral cryptorchidism. Cytogenetic study: male karyotype 46: XY was detected in female phenotype.

A preliminary diagnosis: true hermaphroditism? Repeated pelvic organs ultrasound investigation: uterus and ovaries—are not visualized. Hypoechogenic oval formations are visualized on both sides of the inguinal canal, near the inner ring: at the right side—2.77x1.44x1.11 cm (at the entrance of the inguinal canal), left-2.59x1.29x1.5.

Discussion: Endocrinologist consultation: According to the results of physical, laboratory, and instrumental studies, a preliminary diagnosis: Sexual development disorder, 46 XY. Deficiency of 17β-hydroxysteroid dehydrogenase. Surgical intervention for the extirpation of the testicles is recommended. Unfortunately, it is not currently possible to confirm the diagnosis with genetic studies, due to the lack of the necessary equipment. The patient underwent diagnostic laparoscopy during which the inguinal canal was revised, and the presence of both hypoplastic testicles with elements of the spermatic cord was determined. During further examination, female genital organs were not found. Urologists' and surgeons' discussion during laparoscopy resulted in a decision to temporarily abstain from male gonads extirpation. The main problem is the psychological status of the patient, who, throughout his life (full 15 years) has been feeling as a woman and is not prepared for gender reassignment. However, in the future, signs of virilization may appear (enlargement of the penis, the appearance of male secondary sexual signs), and a change in sexual orientation may be probable. Without legal justification, the doctors did not consider it possible to remove the testes. In this regard, the decision will be made by the patient herself upon reaching adulthood.

ID: 200/Poster Viewing 2: 25

Poster Presentation

Solitary Functioning Kidney—Retrospective Study of a Paediatric Nephrology Unit

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Introduction: Solitary Functioning Kidney (SFK) is a Congenital Anomaly of Kidney and Urinary Tract (CAKUT) characterized by a significant reduction of renal mass and hyperfiltration in the residual nephrons. Despite the hemodynamic adaptations observed in SFK, it is not yet clear if there is a significant risk of Chronic Kidney Disease (CKD) in this patients.

Purpose: The aim of this study was to investigate the demographic, clinical, analytic, and imagiological variables associated with SFK.

Methods: Retrospective observational study of patients with SFK followed at a tertiary care hospital over a period of 20 years.

Results: A total of 165 patients with SFK were analysed: 110 (66.7%) were males, and 55 (33.3%) were females, with a mean of 12.0 years of follow-up. One hundred and forty-one (85.5%) SFK were identified by prenatal ultrasound screening, and 18 (10.9%) were incidental findings after the first week of life. There was no statistically significant difference regarding the affected side. The primary diagnosis was hypodysplasia (71 cases, 43.0%), followed by agenesis (50 cases, 30.3%) and Multicystic Dysplastic Kidney Disease (MCKD) (44 cases, 26.7%). Forty-six patients (27.9%) had CAKUT on the SFK, mainly due to urinary collecting system anomalies (82,6%). Nephrectomy was performed in 36 (21.8%) patients. Microalbuminuria was observed in 33 (20.0%) patients—14 (42.4%) of which had CAKUT on the SFK—after a mean of 11.8-years follow-up. Hypertension was diagnosed in 16 (9.7%) patients—7 (43.8%) with CAKUT on the SFK—after a mean of 14.3-year follow-up, but only 1 patient had hypertension before 10 years of follow-up. CKD stage II or higher was observed in 8 patients (4.8%) after a mean of 14.0-years follow-up. In this group, 2 patients had MCKD, and 2 had vesicoureteral reflux in the functional kidney. All these patients showed significant morbidity: microalbuminuria (7), hypertension (5), obesity (2), hyperuricaemia (1), dysmorphic syndrome of unknown aetiology (1), nephrocalcinosis (1) and diabetes mellitus (1). Thirteen patients (7.9%) did not show signs of renal hypertrophy in the functional kidney and, in these, 2 were diagnosed with microalbuminuria, 4 with hypertension and 2 with CKD stage III.

Conclusion | Prenatal ultrasound screening plays a crucial role in both early detection of congenital functional kidney and associated CAKUT. Although the prevalence of renal damage was relatively low in this study, patients with SFK should have a long-term follow-up since changes in kidney function are only observed later in life.

ID: 229/Poster Viewing 2: 26

Poster Presentation

Terminal Hematuria and a Bladder Mass: Eosinophilic Cystitis in 7-Year-Old Boy

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[1]General Hospital Kumanovo, Macedonia, Former Yugoslav Republic of; [2]General Hospital Prilep, Macedonia, Former Yugoslav Republic of

Introduction: Terminal hematuria is occurring as a result of inflammation of the bulbar urethra and bladder neck. Terminal hematuria is manifested in eosinophilic cystitis and bladder cancer. Eosinophilic cystitis is an inflammatory condition characterized by eosinophilic infiltration of the bladder wall. It is rare amongst children: the mean age of occurrence is 6 or 7 years with predominantly male cases and unknown etiology. This condition, therefore, requires thorough diagnostics to rule out malignant diseases.

Aim: The aim of this presentation is to demonstrate a case of a 7-year-old boy with terminal hematuria (manifested as endoluminal proliferation of the bladder) through ultrasonographic examination; to apply suitable treatment and to conduct follow up of the patient.

Case description: a 7-year-old boy was admitted to our secondary hospital complaining of 3-day terminal hematuria, abdominal pain, and frequent painful urination. The patient had been prescribed a 3-day antibiotic treatment prior to admission (amoxicillin and clavulanic acid 625 mg) that proved no effectiveness. Personal anamnesis revealed that the patient had been subjected to prophylactic therapy with topical corticosteroid due to a positive history of allergies (wheezing and sensitivity to pollen). Physical examination was with mild tenderness to profound palpation over the suprapubic region.

Results: Urine analysis revealed sterile urine culture and positive presence of blood and protein. Hematologic analysis results:—Hgb- 11,5 mmol/L, Le = 8,6 109/L, (Ne = 5,38 109/L; Ly 3,5 109/L), Platelets-230 109/L). C reactive protein was normal (2,3 mmol/L). Blood creatinine was 35 umol/L, total serum proteins, and serum albumin were normal. Eosinophilia in blood was 6%, IgE was 276 IU/ml. Ultrasonography showed diffuse enlargement of the bladder wall with irregular endoluminal proliferation. An empiric treatment was applied with nitrofurantoin (3 mg/kg), antihistamine (desloratadine 5 mg), and NSAID (Ibuprofen 5 mg/kg). The therapy proved effective, resulting in a decrease of bladder wall

thickness and the absence of macroscopic and microscopic hematuria. The patient was then transferred to a tertiary center for further analysis as cystoscopy, biopsy, and histological examination.

Conclusion: Patients with terminal hematuria and bladder mass on ultrasound should be subjected to cystoscopy, biopsy, and further histological examinations in order to confirm the diagnosis. Treatment is with non-specific medical therapy, including non-steroidal anti-inflammatory agents and antihistamines.

ID: 234/Poster Viewing 2: 27

Poster Presentation

Premature Newborn Monitoring Protocol in a Portuguese Hospital

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Introduction: In Portugal, 8.1% of newborns are born prematurely (less than 37 weeks of gestation), presenting an increased risk of neurodevelopmental sequelae which include cerebral palsy, cognitive impairment, neurosensory changes, as well as minimal brain dysfunction, specific language or learning disorders, attention-deficit hyperactivity disorder or other behavioral changes. Adopting the recommendations of the American Academy of Pediatrics (AAP), since 2012, all premature children born in our hospital have been accompanied by a multidisciplinary team, according to the Premature Follow-up Protocol, developed for this purpose.

Purpose: Neurodevelopment evaluation of a cohort of preterm infants born from January 2012 to February 2013, followed in early intervention consultations, speech-language therapy, psychology, and pediatrics under the Protocol.

Material and methods: Retrospective study of a cohort of 33 preterm infants born in a Portuguese hospital, with serial assessments of neurodevelopment using multiple formal instruments over 6 years. Data were collected from the children's clinical registry, and a database was created, which includes demographic and perinatal variables such as gestational age, gender, type of delivery, birth weight, Apgar score, and associated comorbidities.

Results: With the implementation of the Protocol, 63.6% of premature infants were referred to speech-language therapy, 6% to physiotherapy, and 15.1% to the local early intervention team. About 90% have an average intellectual development level as expected for their age and 6% a low average level. Six percent of cases were diagnosed with intellectual developmental disorders. About 35% have formal evaluation results suggestive of attention difficulties. Three percent of cases of Cerebral Palsy were identified.

Conclusion: Based on international and national recommendations, the Protocol makes it possible to identify early developmental problems and their appropriate referral, as well as providing support to families by promoting bonding and active involvement in child stimulation. Thus, it contributes significantly to reduce risk factors and improve prognosis.

ID: 245/Poster Viewing 2: 28

Poster Presentation

Association of Maternal and Neonatal Risk Factors with the Incidence and Severity of Neonatal Respiratory Distress Syndrome in term Neonates Admitted to a Tertiary Neonatal Intensive Care Unit

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Background: Neonatal Respiratory Distress Syndrome (NRDS) is mainly associated with premature birth (≤37 weeks), but it can also affect term neonates (≥37 weeks). In contrary to pre-term neonates, the risk factors associated with NRDS in term neonates have not been studied extensively. The aim of this study is to examine the association of maternal socioeconomic and clinical characteristics as well as neonatal clinical parameters with the incidence and severity of NRDS in term neonates admitted to a Neonatal Intensive Care Unit (NICU).

Methods: All term neonates admitted to the NICU of Archbishop Makarios III Hospital, Nicosia, Cyprus, between April 2017 and October 2018 were the study subjects. This NICU is the only neonatal tertiary referral centre in Cyprus, serving 854,802 population. Clinical data collection was based on the review of medical files, while information on maternal demographics and socioeconomic status was collected through a specifically designed questionnaire. Statistical analysis was carried out using logistic and linear regression analysis for binary and continuous outcomes, respectively.

Results: A total of 134 term neonates were admitted to the NICU during the 18-month study period. Fifty-five (41%) of them were diagnosed with NRDS. Compared to 79 non-NRDS term neonates, NRDS neonates were more frequently males (74.5% vs 53.6%, p-value: 0.01), had a lower mean fifth minute Apgar Score (8.92 vs 9.46, p-value: 0.002) and were more frequently born by elective caesarean section (90.1% vs 53.9%, p-value:0.001). In addition, mothers of NRDS neonates were more frequently employed in occupations involving manual labor (32.7% vs. 14.9%, p-value: 0.02). In the multivariate-adjusted analysis, maternal manual labor (OR: 16.5 (95%CI: 1.2–235.9) and elective caesarean section (OR: 39.5 (3.1–499.4) were identified as independent predictors of NRDS. Regarding markers of NRDS severity, there was a weak association between pulmonary hypertension and number of surfactant doses (β: 2.17, 95%CI: −0.3–4.66, p-value:0.076) as well as between neonatal hypotension during the first 24h of life and duration of mechanical ventilation (β: 4.24, 95%CI: −1.86–10.35, p-value: 0.140).

Conclusions: This study highlights the importance of elective caesarean section as well as maternal manual labor as risk factors for NRDS. These results can inform the development of evidence-based strategies for improved prenatal and perinatal monitoring of pregnant women.

ID: 280/Poster Viewing 2: 29

Poster Presentation

Periodic Fever—Diagnostic Challenge

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Background: Periodic fever is defined as recurrences of seemingly unprovoked episodes of fever that last from a few days to a few weeks, separated by symptom-free intervals of variable duration. Periodic fever syndromes represent a group of autoinflammatory diseases, which include the Periodic Fever, Aphthous Stomatitis, Pharyngitis, and Cervical Adenitis syndrome (PFAPA)—the most common.

Case Report: A 2-year-old male child, previously healthy, with no epidemiological context of disease, first child of healthy non-consanguineous parents, starts with multiple admissions (practically monthly) to the emergency service, with fever, cervical adenitis and recurrent tonsillitis with poor or no response to antipyretics neither the antibiotics. On different examinations, vital signs were stable with a maximum temperature of 39,9°C and erythema of the posterior pharynx without exsudate and enlarged cervical lymph nodes bilaterally (without other adenopathies and

without organomegaly). Laboratory tests showed leukocytosis (24x10^9/L) with neutrophilia (17,700/u3) and C-reactive protein (CRP) levels at 16 mg/dL. Routine chemistry and urinalysis were normal. The rapid strep test and IgM EBV/CMV were normal. Lymph nodes ultrasound did not show liquid content. The overall presentation was felt to be consistent with autoinflammatory syndrome—Periodic Fever, Aphthous Stomatitis, Pharyngitis, and Cervical Adenitis syndrome (PFAPA), Cyclic neutropenia and Hyper-IgD syndrome were excluded and was given an indication to do prednisolone (1mg/Kg) in the following episodes which resulted in rapid resolution of fever.

Conclusion: Autoinflammatory diseases are characterized by recurring episodes of fever and inflammation in the absence of infection or autoantibody formation. The diagnosis of PFAPA disease remains one of exclusion, and consequently, patients often undergo several investigations. Additionally, its symptoms are frequently misinterpreted as upper respiratory infections, leading to an inappropriate therapeutic strategy. Therefore, it's necessary a complete medical history, high index of suspicion, and specific diagnostic criteria of this disease, in order to make an early diagnosis and proper therapy.

ID: 215/Poster Viewing 2: 30
Poster Presentation
Seize the Day; A Fitting Audit of AED Prescribing Practices

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Introduction: Prescribing errors can impact patient morbidity and mortality. This risk is augmented by the complexity of anti-epileptic drugs (AEDS), whereby patients may be on multiple medications with known interactions.

Purpose: The aim of this audit was to assess the prescribing practices of AEDS in our Paediatric Department.

Methods: The quality of prescribing was compared against the Standard-The Joint Guidance of the Medical council and PSI's "Safe Prescribing and Dispensing of Controlled Drugs" Guidelines. The medication records of 10 inpatients on AEDs admitted during February–March 2019 were examined. Inpatient prescriptions were evaluated for the number of correctly prescribed AEDs, MRN, allergy status, signature, start date, dose, frequency, route, generic name, milligrams, solution concentration, and charting of rescue medication including dose, frequency, and indication. Re-audit was conducted in April–May 2019. Nine medication records were evaluated.

Results: In total, 10 medication records were examined with 35 AED's prescribed, 57% (20) correctly. All (100%) prescriptions had correct doses, frequency, and route, while 60% (21) were in capital letters. Rescue medication was prescribed in 50% with the correct dose and route in 40%. The most common omission was the indication for administration of rescue medications. Only 31% (11) of prescriptions used generic names. On completion of the first cycle, an education session was held at our medication safety meeting, the "DRUGgle". The various errors identified were listed. Emphasis was placed on not naming prescribers so as to promote a safe learning environment and to develop a culture of awareness. Awards were given to doctors who made the best effort to successfully adhere to the prescribing guidelines. During re-audit, there were 26 AED prescriptions, of which 80% (21) were correctly prescribed, a marked improvement (23%) from baseline. One hundred percent compliance was noted for the inclusion of patient demographics, allergy status, dose, frequency, and route. There was an improvement in the legibility of prescriptions, with 73% (19) of prescriptions in capital letters. Eight of nine medication records included a rescue medication, with 77% of these having the correct dose. The correct route was recorded with all rescue medications, and 66% (two-fold increase) of these had the indication documented. During re-audit, 46% of prescriptions used generic names.

Conclusion: There is a large evidence base to support the use of educational interventions in improving prescribing competency amongst doctors. This was reflected in the 23% improvement in prescribing practice of AED's in our centre after completion of our audit cycle.

ID: 110/Poster Viewing 2: 31
Poster Presentation
Newborn Examination—Is Family Tree Important?

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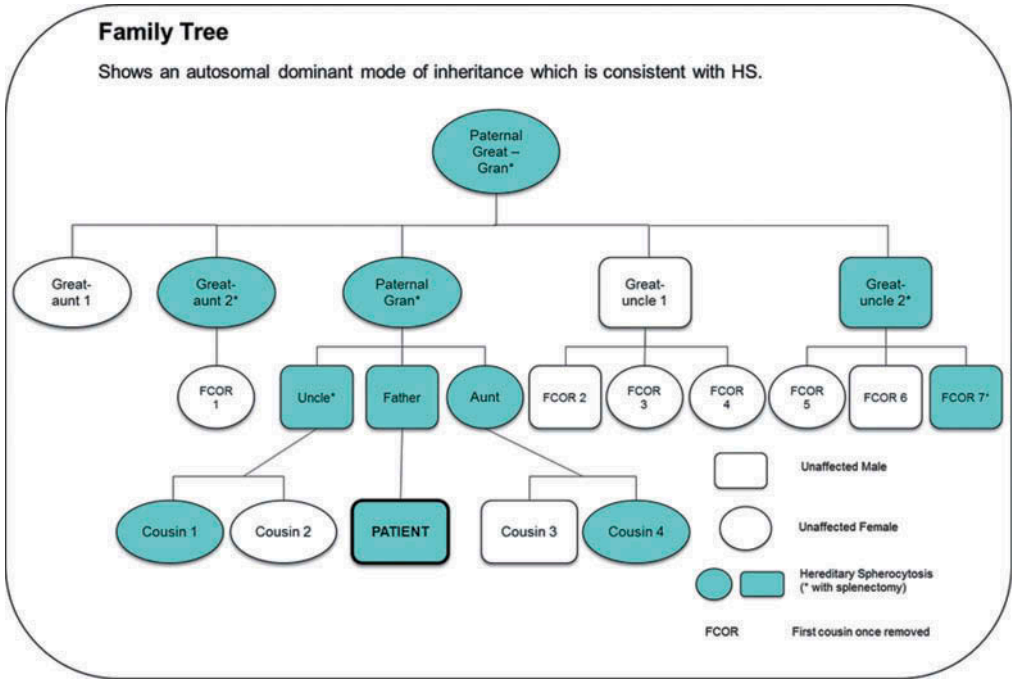
Background: In Northern Europe and North America, hereditary spherocytosis (HS) is the most common cause of inherited chronic haemolytic anaemia. It is most commonly inherited in an autosomal dominant fashion. In the neonate, this presents with jaundice and a Coombs negative haemolytic anaemia.

Observation: This case of neonatal jaundice displayed the typical clinical course of hereditary spherocytosis in the neonate. A preterm 36 weeks male infant was noted to be jaundiced at 24h of life with initial bilirubin level just below the exchange transfusion level; however, he responded well with triple phototherapy. The child's father was noted to be affected by HS at prenatal appointments. On staff noticing the child's jaundice, the father's history was explored in more detail. Once fully drawn, the father's family tree shows a very clear pattern of autosomal dominant inheritance of HS throughout several generations (Figure 1). Had this been known prior to birth, the child's jaundice may have been recognized more quickly, and treatment could have been instigated more promptly (Figure 1).

Key Message: If any condition is identified in either parent prenatally, a detailed family tree may be of use to show inheritance pattern and to highlight the probability of the neonate being affected. HS should always be considered as a possible cause for neonatal jaundice.

Figure 1.



ID: 268/Poster Viewing 2: 32

Poster Presentation

Dynamics of Psychomotor Development of Full Term and Premature Children with Delay of Prenatal Growth in the Period of Early Childhood

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Introduction: The delay of the intrauterine development of the child continues to be one of the urgent problems in Pediatrics. The need to study the psychomotor development of such children, during an early age, is dictated by the possibility of predicting long-term results and finding solutions to problems in the development of children.

Purpose: to Study the process of psychomotor development, the formation of the psyche, and the formation of motor activity of children born with intrauterine development delay. Material and methods: Research of 236 children were divided into 2 groups: 146 (51.0%) full-term babies with IUGR were in the first group; however, the second group consisted of 90 (31.5%) premature babies with IUGR. Tabular method were used for the mental development of children in particular 1 year, in 2 and 3 years of life. Forty healthy full-term children constituted the control group.

Results: Results of research According to our data, delayed mental development in children was 25 (32.8%) in and 52 (57.8%) in the second group as in premature infants ($P < 0.01$). In the control group, the number of children with deviations is 4%. At the age of 2 to 3 years in the first group, the number of children with disabilities increased by 28% in the second group by 17.1%. By the age of 3, there has been a tendency to improve the neuropsychic development of children. The number of children with a lag in mental development in group 1 decreased in twofold, in group 2, by 2.9 times. By the age of 3 years, significant mental improvement was observed. 50.0% of premature infants under one-year-old had a delay in the development of the auditory cortex, while full-term infants consisted of 28.9%. However, as it was observed by the end of the second year, 15 (19.7%) children of the first group and children of the second group consisted of 21 (23.3%). By the age of 3 years, delays in the development of the auditory cortex were noticed in 10 (13.2%), and children of the second group reached 8.9%Conclusion: As it was mentioned earlier, mental development is important to consider in the aspect of early stimulation of behavioral skills in children with IUGR, as well as their consolidation in the second and third years of life. This also applies to the formation of motor and speech reactions in them. We think that the worst health indicators of our patients obviously require the need for individual pedagogical influences.

ID: 210/Poster Viewing 2: 33

Poster Presentation

The Role of Pneumoproteins in Forecasting the Results of Respiratory Distress Syndrome in Premature Children

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Introduction. The urgency of the problem of bronchopulmonary dysplasia (BPD) in premature infants in our country is associated with the transition of the Republic of Uzbekistan to world standards for live births. Despite a significant number of studies on the genesis of BPD in newborns, the role of the mechanism of damage to the alveolar-capillary barrier is not well studied. In violation of the integrity of the lung tissue and the formation of pathology, much attention is paid to pneumoproteins. Pneumoproteins are specific proteins of the epithelium of the lungs, of which the less studied are the surfactant protein D (SPD) and the secretory protein of Clara cells (PCC).

Purpose: To study the prognostic value of pneumoproteins in preterm infants with respiratory disorders in the development of BPD.

Materials and methods. Sixty-six preterm infants with a gestational age of 28.9 ± 1.6 weeks, with a bodyweight of 1002.4 ± 55.67 g and a body length of 39.6 ± 2.2 cm. were examined. Used clinical and instrumental diagnostics, studied the content of surfactant protein D and protein of Clara cells by IFA, using a set of reagents from Biovendor (the Czech Republic).

Results: As a result of the studies, it was found that the condition of newborns at birth was severe. The degree of respiratory failure at birth was evaluated according to the Silverman-Andersen scale, while the respiratory failure of the I and II degree was observed in 38.8%, and III degree in 67.5% of children. In order to stop the symptoms of respiratory failure, all newborns underwent respiratory therapy. The duration of respiratory therapy averaged 24.6 ± 5.2 days. When studying the content of SPD, depending on the severity of respiratory distress syndrome (RDS), it was noted that the SPD in newborns with RDS I and II degree on the 5-7th day of life were 377.49 ± 68.4 ng/ml, which is significantly higher than the rate of newborns with RDS III degree which is 198.45 ± 55.4 ng/ml ($p < 0.01$). An assessment of the level of PCC in the blood serum of these children showed that in newborns with RDS I and II, the content of this protein was 18.5 ± 0.87 ng/ml, which is also significantly higher than in newborns with RDS III degree −7.3 ± 0 74 ng/ml ($p < 0.01$). By the end of the neonatal period, 12 (18.1%) infants developed BPD. The indices of SPD and PCC for BPD significantly decreased and amounted to 79.8 ± 2.47 ng/ml and 2.8 ± 0.57 ng/ml, respectively.

Findings: Thus, the low content of pneumoproteins indicates damage to the integrity of the alveoli. It should also be noted that this is due to the low functional activity of Clara cells, which are the main protectors of the respiratory tract. The data obtained indicate a decreased synthesis of pneumoproteins, which contributes to the development of BPD and reduces the anti-infection protection of the lungs in premature infants.

ID: 214/Poster Viewing 2: 34

Poster Presentation

The Value of Neurospecific Enolase on the Course of Congenital Pneumonia in Newborns with Lesions of the Central Nervous System

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Introduction: The defeat of the Central nervous system in newborns weakens the immune and biological resistance and reduces the reactive protection of the child's body, is a heavy premorbid background for bronchopulmonary diseases in children. Pneumonia in newborns is one of the severe pathologies leading to increased neonatal morbidity and mortality. Therefore, it is important to study the value of neuro-specific enolase (NSE) in newborns with combined somatoneurological pathology, as it is an early marker of brain damage.

Objective: To study the serum content of NSE in congenital pneumonia (CP) in newborns with CNS lesions.

Materials and methods: We examined 48 full-term newborns with perinatal CNS lesion with confirmed CP (main group). The comparison group included 26 full-term newborns with CP without CNS lesion. Newborns of both groups did not differ in body weight, and gestational age was the average body mass 3214,6 ± 123,5 g and gestational age within the 38.1 ± 1.3 weeks. The control group consisted of 20 healthy full-term newborns. In addition to clinical, laboratory and radiological diagnostics, special biochemical research methods were carried out, which consisted in determining the content of NSE in blood serum on the third day of the life of newborns by the method of ELISA according to the standard protocol using sets of reagents "Fujirebio" (Sweden).

Research result: Newborns of both groups showed clinical signs of intoxication from the first days of life, inflammatory changes in the blood (changes in the leukocyte formula, increased levels of C-reactive protein). Was auscultation listen weakened breath. Radiologically, marked by an increase bronchoscopists pattern and a local reduction in the transparency of the lung fields in the first 24–72 h of life. 79.2% of children in the main group, and 42.3% of children in the comparison group needed respiratory support. In infants of the main group were also observed neurological disorders in CNS excitation syndrome—half of the children (50,0%), syndrome of oppression—in 29,7% of children, oppression oral and spinal reflexes, apnea in 25,0% of children. A comparative study of the serum NSE index in the early neonatal period revealed the presence of significant differences between groups of newborns, in children of the main group the content of NSE, was increased by 2.7 times compared to the control group ($P < 0.001$), in the comparison group this indicator was increased by 1.5 times compared to the control group. Probably, in case of combined pathology due to violation of adaptive and immunochemical mechanisms of the newborn due to hypoxia and infection, the level of NSE increased, which contributed to a more severe course of CP.

Conclusion: Thus, the change in the level of NSE in inflammatory diseases of the lungs of newborns can be used not only as a marker of brain damage but also as an agent of influence on the pathogenetic links of the inflammatory reaction. Also, the content of NSE in serum in newborn children with congenital pneumonia can be used as a criterion for early diagnosis and prediction of the severity of perinatal CNS lesions.

ID: 224/Poster Viewing 2: 35

Poster Presentation

Food Intake in Hospitalized Children with and Without Nutritional Risk

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Introduction: Nutritional disorders can cause complications and extend patients' hospitalization. Therefore, nutritional assessment plays an important role in their therapy.

Purpose: The aim of this study is to analyse if there is a difference in food intake between hospitalized children with and without nutritional risk. The second aim is to compare the subjective statement about nutritional status recorded during the nutritionDay survey (an international project founded in order to spread awareness of nutritional disorders in hospitals) with the nutritional status assessed using STRONGkids questionnaire (a nutritional risk screening tool).

Materials and Methods: The study includes 50 patients (mean age 13,48 years ± 3,79, median age 14 years, 22 males) who participated in the nutritionDay survey in November 2018 at the UHC Zagreb in Zagreb, Croatia. Their nutritional intake and risk of malnutrition were estimated using the nutritionDay questionnaire and the STRONGkids questionnaire.

Results: In the nutritionDay survey, 36 patients were marked as those without nutritional risk, 11 patients as those at risk, and three patients as malnourished. For further analysis, malnourished and those at risk were joined into one group that needed special nutritional attention, either as a preventive or curative measure (14/50). STRONGkids questionnaire identified more patients with a nutritional risk. Using this method, 14 patients were found to be at low risk, 23 at medium risk, and 13 at high risk. To be able to compare the results of both methods, patients at medium and high risk were united in the group with nutritional risk (36/50), and the rest were considered as those without the need for special nutritional observation. Statistical analysis showed a low degree of agreement between the results of nDay survey and STRONDkids questionnaires in identifying patients at risk ($\kappa = 0,263$, 95% confidence interval = 0,107–0,418). On the day of the survey, 30/

50 patients did not achieve adequate nutritional intake, with leftovers ranging from 0-100% of offered food. There was no difference in the percentage of nutritional intake between patients with or without nutritional risk, regardless of the method applied for nutritional risk assessment (Mann-Whitney: z1 = −0,968, p1 = 0,333; z2 = −1,275, p2 = 0,202).

Conclusion: Food intake in hospitalized children is unsatisfactory in a large proportion of patients, with no difference between patients with or without nutritional risk. nutritionDay questionnaire and STRONGkids questionnaire shows a low degree of agreement regarding nutritional risk assessment, but STRONGkids seems to identify more subjects at risk (14/50 vs. 36/50).

ID: 285/Poster Viewing 2: 36

Poster Presentation

Childhood Langerhans Cell Histiocytosis: A Disease With Many Different Forms of Presentation

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Introduction: Langerhans Cell Histiocytosis (HCL) is a rare disease resulting from the proliferation of dendritic cells with morphological and immunophenotypic characteristics of Langerhans Cells (CD1a+/CD207+), which most often involves bone, but can affect almost any organ. The clinical presentation varies depending on the sites and extent of involvement.

Case description: We present three cases evaluated at the pediatric emergency department (PED) for different complaints, but with the common final diagnosis.

Case 1- A previously healthy 34-month-old girl presents in the PED with complaints of polyuria and polydipsia in the last 2 weeks. Physical examination was normal. From etiological investigation, we highlight, normal serum glucose (116mg/dL) and plasma osmolarity (286mOsm/kg H2O), but a decreased urinary osmolarity (89mOsm/kg H2O). A water deprivation test was performed, confirming the presence of diabetes insipidus. Cerebral and pituitary magnetic resonance showed thickening and contrast uptake of the pituitary stem, not identifying the normal hypersignal at T1 in the posterior pituitary slope, and a lytic bone lesion in the temporal region and left sphenoid wing with intense contrast uptake.

Case 2- Previously healthy 4-year-old girl brought to the PED due to a scalp swelling detected at the day of admission with no history of witnessed trauma. On physical examination, she had a soft, painful, and well-defined swelling, with approximately 2 cm of diameter, located in the right parietal region. Imaging study revealed a skullcap lytic lesion.

Case 3- A 14-year-old boy went to the PED due to pain and edema of the right supraciliary region with 2 weeks of evolution, with no other associated complaints or history of trauma. On physical examination, he had a discreet asymmetry of the supraciliary and upper eyelid region (more prominent on the right), without individualizable swelling or inflammatory signs. There was no proptosis or oculomotricity compromise. Imaging study revealed a destructive bone lesion on the supero-external quadrant of the right orbital cavity walls.

In all cases, a bone lesion biopsy was performed, revealing HCL compatible cytological changes, with positive immunochemical staining for CD1a, S100, and CD68.

Conclusion: The authors intend to illustrate with this case reports the clinical presentation diversity of LCH, whose timely diagnosis has a strong impact on prognosis. LCH can be difficult to diagnosis since it is an uncommon disease that can affect many organ systems, so it is necessary to maintain a high suspicion index.

ID: 209/Poster Viewing 2: 37

Poster Presentation

The Two Sides of An X-ray: Innocent or Foreign Body?

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Introduction: Foreign body (FB) ingestion is a common problem in pediatrics and may have a surprising clinical presentation. Due to the narrowing caused by the aortic arch and left main bronchus, the FB is often retained in the cervical or superior thoracic portion of the esophagus, which is not detected in a thoracoabdominal radiograph.

Case Description: An 11-month-old female infant medicated for recurrent wheezing was admitted to the pediatric emergency department with a 24-h history of fever. The infant presented a 4-month history of hoarse and productive cough and intermittent feeding difficulties, with a normal thoracic radiograph performed 3 months earlier. On examination in the emergency department, because of crackles in pulmonary auscultation, a thoracoabdominal radiograph was performed, revealing a round radio-opaque image in the cervical region. The upper gastrointestinal endoscopy revealed a coin, retained in the esophagus 10 cm below the superior dental arch, with a fibrin-coated ulcerated area at the pressure points of the FB on the esophageal wall. A 50 cents coin was removed without complications. The infant was discharged home medicated with esomeprazole and amoxicillin for acute otitis media. Since then, the infant remains asymptomatic and recovering weight.

Conclusion: Many situations of FB ingestion in children are not witnessed by adults, making this diagnosis a challenge. In the case presented, considering the findings of the upper gastrointestinal endoscopy and the resolution of symptoms after the removal of the FB, it is very likely that the ingestion may have occurred 4 months before. We alert pediatricians on the occurrence of atypical clinical presentations of FB ingestion in order to avoid late diagnosis and consequential complications. It is also important to include a cervical image in the initial radiograph in the suspicion of an esophageal FB or when badly explained digestive and/or respiratory symptoms are present.

ID: 266/Poster Viewing 2: 38

Poster Presentation

Endocarditis. A Neonatal complication not to forget

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Introduction: The increasing use of invasive techniques to treat newborns (NB) has contributed to the growing incidence of endocarditis. The clinical manifestations have a variable and nonspecific presentation indistinguishable, even without risk factors such as structural cardiac pathology.

Case Description: A twin newborn admitted to the NICU for prematurity (31 weeks) and respiratory distress on mechanical ventilation and central venous catheter. On the seventh day of life, he was started on empirical cefotaxime, vancomycin and gentamicin for sepsis with subsequent bilateral knee, second right toe and second right finger inflammatory signs. Blood and CSF cultures were positive for methicillin-resistant Staphylococcus aureus (MRSA). At D14, despite the apparent osteoarticular improvement, he maintained fever, a new systolic heart murmur, CRP oscillation, severe thrombocytopenia, liver microabscesses, and persistent bacteremia. Linezolid was initiated, and the echocardiogram showed a large sessile vegetation adhering to the septal leaflet of the

mitral valve. Blood culture was negative after the first 48h of linezolid, however, ruptured chordae tendineae of the mitral valve conditioned dilatation of the left cavities with moderate mitral insufficiency (MI). Captopril was started but not tolerated by hypotension. Discharged at 72 days of life asymptomatic without medication. At 13 months, favorable evolution, with mild MI without left cavities dilation and no osteoarticular sequelae.

Discussion: Although endocarditis is a rare diagnosis in the NB, the presence of central venous access, persistent bacteriemia, and a new murmur, even in the absence of structural heart disease, should raise suspicion for this entity. The presence of an infectious focus such as osteomyelitis does not preclude the presence of another serious disease such as endocarditis. Early ultrasound assessment and extensive targeted investigation can avoid associated serious complications and reduce morbidity and mortality.

ID: 294/Poster Viewing 2: 39

Poster Presentation

Group B Streptococcus Late-Onset Disease—A Uncommon Clinical Presentation

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Introduction: Group B streptococcus (GBS) is a leading cause of severe neonatal infections. Late-onset disease (LOD) can be defined as GBS disease that presents at the age of 6 to 89 days. The infection often presents with unspecific symptoms, and the most common presentation is bacteraemia with meningitis. We report a case of an uncommon clinical presentation of LOD.

Case description: A 29 days old female infant presents in an emergency room with fever, irritability, and unilateral periorbital edema with few hours of evolution. She was born at 41 weeks by caesarean to a GBS-negative mother, with a normal pregnancy. Ocular examination of the right eye revealed erythema, swelling, and pain, normal ocular movements, without proptosis. Initial investigation has shown leucocytosis with neutrophilia (leucocytes 23.300/uL, neutrophils 16.000/uL), C-reactive protein 1.46 mg/dL and procalcitonin 0,08ng/mL. She was admitted to the neonatal care unit, and blood and urine cultures were obtained. She was empirically started intravenous ampicillin and cefotaxime and topic chloramphenicol for presumed periorbital cellulitis. On the third day, blood culture was positive for GBS. Cefotaxime was discontinued, and the infant completed 14-day of intravenous ampicillin. The infant clinically recovered only had a fever on the first day, and the periorbital inflammatory sings improved after a few days of treatment. She was discharged on the 14th day, without any sequelae.

Conclusion: Late-onset disease can have less common clinical presentations, such as localized infections. GBS should be considered as an etiological agent in an infant presenting with localized infections such as cellulitis.

ID: 160/Poster Viewing 2: 40

Poster Presentation

The Detection of Mesenteric Ischemia in Preterm Infants with Near-Infrared Spectroscopy Data

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Introduction. Necrotizing enterocolitis is a challenge in the care of preterm infants. Particularly acute is the question about the timely diagnosis of the early stage of NEC during progressive increasing of enteral feeding.

Purpose. The aim of the research was to determine of absolute data of abdominal oxygenation and calculated indices after NIRS.

Materials and Methods. Continuous NIRS was provided in 58 newborns with gestational age 28–32 weeks (average weight 1285 ± 250 g) on 10–30 day during progressive enhancement of enteral feeding. Data were analyzed with a glance of the velocity of feeding volume and its type (breast milk vs. milk formula for preterm infants). We used INVOS 5100 C (Covidien, USA) with abdominal saturation measurements over the anterior abdominal wall. Exclusion criteria were unstable hemodynamic, artificial ventilation, and severe infection. Splanchnic-cerebral oxygenation ratio (arSO2/crSO2), fractional tissue oxygen extraction (FTOE = (SpO2—rcSO2)/SpO2) and burden of hypoxia (%-hours) were counted.

Results and discussion. NIRS technology can detect launching ischemia during progressive enlargement of feeding volume. The increasing frequency and time (length) of mesenteric ischemia were observed in all infants after a high rate of increase of feeding volume (more than 10 ml/kg/day). There was an increasing of %-hour на 20% with EBM and 23% with MF. The tight correlation with feeding volume ranging from 0,79 to 0,83, respectively, was revealed. The duration of severe abdominal ischemia period (less 40%) consisted of 33% of the total burden of hypoxia (%-hour). A significant difference between abdominal NIRS data depending on the type of milk was not revealed. Splanchnic-cerebral oxygenation ratio decreased lower of references threshold (<0,7) and ranging from 0,54 to 0,61 in case of more than 10 ml/kg/day feeding volume increasing rate. FTOE rising was founded. Moreover, the duration and level of this changing of FTOE did not depend on the kind of enteral substrate and increasing of feeding volume rate.

Conclusion: NIRS technology is feasible and useful noninvasive method for application in intensive care of preterm infants. Abdominal NIRS data are an early indicator of splanchnic ischemia/NEC and maybe the base for feeding decision-making.

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