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MODIFICATION OF EFFECT BETWEEN AIR POLLUTION AND LUNG FUNCTION BY THE INFLAMMATORY PORTENTIAL OF DIET IN CHILDREN: EVIDENCE FROM A CROSS SECTIONAL STUDY

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Background: Inhalation of fine particulate matter (PM) can cause systematic inflammation and oxidative stress, which may further aggravate the development and progression of asthma. Although nutritional intake of fatty acids and antioxidants may attenuate some effects of fine PM, the role of overall dietary intake has not been studied.

Objective: We aimed to investigate the modification of the association between air pollution and childhood asthma related outcomes by the effect of the inflammatory potential of diet.

Methods: In a cross-sectional study, 501 (48.1\% males, aged 7 to 12 years) of 858 children attending 71 classrooms from 20 local schools were selected. Spirometry and airway reversibility, exhaled level of nitric oxide, skin-prick testing and current symptoms (breathing difficulties and irritative cough) were assessed. Dietary inflammatory potential was evaluated by the Dietary Inflammatory Index (DII) and calculated from a 24-hour dietary recall. Indoor air quality measurements were conducted in 20 schools and 71 classrooms for one week. The proportion of effects explained by the exposures to PM2.5 and PM10 were measured by generalized linear mixed model.

Results: After adjustments for age, sex, body mass categories and exposure to tobacco, the exposure effect of PM2.5 and PM10 levels on children with asthma was 43 (OR=1.43; 95\%CI: 1.01 to 1.15) and 30\% (OR=1.30; CI95\%: 1.03 to 1.68) higher when diets were pro-inflammatory, respectively.

Conclusion: These findings provide further support to the role of diet’s inflammatory characteristics modulating the effects of indoor air pollution on lung function, highlighting the importance of children’s diet as a potential solution to reduce the risk of asthma due to air pollution.

Keywords: Particulate Matter, Asthma, Dietary Inflammatory Index, Children
RISK OF URINARY TRACT INFECTION IN INFANTS AND CHILDREN WITH ACUTE BRONCHIOLITIS.

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OBJECTIVES: To estimate the prevalence of urinary tract infection in infants and children with bronchiolitis.

METHODS: A retrospective cross-sectional study involving patients zero to 24 months of age who were hospitalized with acute bronchiolitis was conducted.

RESULTS: A total of 835 pediatric patients with acute bronchiolitis were admitted to the pediatric ward between January 2010 and December 2012. The mean (± SD) age at diagnosis was 3.47±2.99 months. There were 325 (39%) girls and 510 (61%) boys. For the purpose of data analysis, the patient population was divided into three groups: group 1 included children hospitalized with respiratory syncytial virus (RSV) bronchiolitis; group 2 included children hospitalized with clinical bronchiolitis with no virus detected; and group 3 included children hospitalized with clinical bronchiolitis due to a respiratory virus other than RSV. Results revealed that urinary tract infection was present in 10% of patients, and was most common in group 3 (13.4%) followed by group 2 (9.7%), and was least common in group 1 (6%) (P=0.030).

CONCLUSIONS: The possibility of a urinary tract infection should be considered in a febrile child with a diagnosis of bronchiolitis, particularly if the trigger is a respiratory virus other than RSV.
THE VALUE OF VITAMIN D IN HOSPITALIZED CHILDREN WITH PNEUMONIA

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Keywords: Pneumonia, children, vitamin D.

Introduction: Prior literature provides mixed evidence on the relationship between low level of vitamin D and the severity of the acute respiratory disease, therefore, there is a need to further investigate the link.

Objectives: The aim of this study was detection of the association between vitamin D low level and severity of pneumonia.

Materials and Methods: The study was conducted at «Muratsan»hospital in–patient pediatric care center in Yerevan from February to December 2017. A total of 70 children from 1 to 5 year old with pneumonia were randomly included in the study. According to serum 25-hydroxyvitamin D3 (25OHD3) level they were further divided to low vitamin level group (52 patients) and normal vitamin D level group (18 patients). The following variables were included as indicators for the degree of severity: signs of respiratory distress, laboratory findings (CBC, CRP).

Results: Overall 74,3% of study population had low serum level of vitamin D (vitamin D insufficiency or deficiency); comparing the severity degrees among those groups found no statistical differences among the children with normal levels of vitamin D and those with vitamin D insufficiency/ deficiency (p. > 0,05).

Conclusion: Vitamin D low level was prevalent in Armenian children with pneumonia. Even so, the low level of vitamin D was not associated with severity for pneumonia.
CORRELATION BETWEEN CORD BLOOD 25-HYDROXYVITAMIN D LEVELS AND RISK OF ATOPY IN CHILDREN

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Background: Vitamin D is known to have a role in body systems, such as immune mechanism, specifically allergic reaction. However, few studies which analyzes correlation between vitamin D deficiency in fetal placenta and risk of allergy outcome in children still give controversial results.

Objective: To assess the correlation between cord blood 25-hydroxyvitamin D levels and risk of atopy in children

Materials and Methods: This research was a nested-study from Indonesian Pneumonia and Vitamin D study (IPADS) held in Yogyakarta since October until December 2017. This study used cross sectional method. Cord blood 25-hydroxyvitamin D level was examined in University of Western Australia by using liquid chromatography-tandem mass spectroscopy (LC-MS/MS) method. Scoring of atopic risk in children assessed by trace card from the Allergy-Immunology Indonesian Pediatric Association (IDAI) Working Group. Statistical analysis using Chi-square for categorical variable and One-way ANOVA for continuous variable

Results: Cord blood 25-hydroxyvitamin D levels was examined in 65 newborns. In normal placental vitamin D serum level we identified there were 4 babies with low allergy risk, 7 babies with moderate allergy risk, and 2 babies with high allergy risk. However, in low placental vitamin D serum level, we found 15 babies with low allergy risk, 36 babies with moderate allergy risk, and 1 baby with high allergy risk. Mean scores of placental vitamin D serum in each group were 56.1 nmol/L in high allergy risk, 30.43 nmol/L in moderate allergy risk, and 34.43 nmol/L in low risk allergy. Statistical analysis with Annova shows a significant difference of mean score between those 3 group (p=0.033), Chi Square shows there is no correlation between cord blood 25-hydroxyvitamin D levels and risk of atopy in children (p=0.107, (p> 0.05s).

Conclusion: There was no significant correlation between placental newborn vitamin D serum level and cord blood 25-hydroxyvitamin D levels and risk of atopy in children but there was a mean difference between low risk, moderate risk, and high risk groups in vitamin D serum data

Keyword: cord blood 25-hydroxyvitamin D, Atopy, Children
ADRENOCORTICAL STATE IN CRITICALLY ILL INFANTS AND CHILDREN WITH PNEUMONIA COMPLICATED BY SEPSIS AND SEPTIC SHOCK

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Background and Aims: Critically ill infants and children with pneumonia complicated by sepsis and septic shock remains a major cause of morbidity and mortality in Paediatric ICU (PICU). These patients may have adrenocortical insufficiency (AI) that justify steroid use. We aimed to assess adrenocortical state (AS) in these patients.

Method: AS was assessed in critically ill infants and children with pneumonia complicated by sepsis and septic shock by estimation of cortisol levels at baseline and after high-dose ACTH stimulation in 20 cases and 30 controls. Absolute adrenal insufficiency (AAI) was defined as basal cortisol levels <7 micg/dl and peak cortisol level <18 micg/dl. An increment <9 micg/dL after stimulation was diagnosed as relative adrenal insufficiency (RAI).

Results: Twenty cases with pneumonia were admitted to PICU. Their ages ranged from 3 months _ 5 years; 11 males and 9 females, 9 cases had sepsis (45%), 5 cases had severe sepsis (25%) and 6 cases developed septic shock (30%). Overall mortality was 55%. The mean cortisol level at baseline in cases (57.73 micg/dl) was higher than that of the controls (12.83 micg/dl), p=0.000. The mean cortisol level 60 minutes after ACTH stimulation (79.305 micg/dl) was higher than that of the controls (32.8 micg/dl) p=0.000. Six cases (30%) had RAI. Four cases (66.6%) of those with RAI were on inotropic support, mechanical ventilation and died.

Conclusion: RAI in cases was associated with higher mortality, inotropic support and mechanical ventilation. Basal and post-stimulation cortisol levels were markedly elevated in cases than controls, thus there was no AAI in cases.
PRECISION MEDICINE ADVANCES IN CHILDHOOD ATOPIC DISEASES: RESULTS FROM ATOPIC DERMATITIS AND ASTHMA

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Background: Atopic dermatitis (AD) and asthma are common childhood atopic diseases that occur due to immune system dysregulation and manifest as allergic inflammation. 10-20% of children in US and Western Europe have atopic dermatitis and are treated with anti-inflammatory steroid creams. Asthma is the most common chronic respiratory disease in children worldwide affecting 1-20% of the child population. Therapeutic approaches include inhaled treatment or pills to reduce inflammation and facilitate breathing. The etiopathogenesis of atopic diseases includes genetic factors and environmental triggers. Currently, the diagnosis of atopic diseases can be difficult due to the lack of useful markers in a clinical setting. Precision medicine integrates data from genome, microbiome, dietary and lifestyle habits to study the human body as a whole.

Objective: To identify the underlying cause of pediatric asthma and atopic dermatitis and manage the triggers of the disease to improve clinical symptoms.

Materials and Methods: Targeted Metabolomic analysis and subsequent personalized treatment were performed in 30 Korean infants diagnosed with (AD), that did not respond to standard therapeutic actions and 72 children with mild asthma. Metabolomics was performed in blood and urine samples using Gas chromatography-Mass Spectrometry and personalized treatment included nutritional intervention to restore the deficiencies in nutrients and biochemical disruptions. In the case of asthma, the pulmonary function was assessed using spirometry and bronchial inflammation by fractional exhaled nitric oxide analysis. For atopic dermatitis skin lesions were assessed before and after treatment (medical pictures).

Results: Metabolomic analysis of children with AD revealed significant metabolic disruption in Citric Acid Cycle compatible with mitochondrial dysfunction due to xenobiotics toxicity, lack of the amino-acid glutamine and ubiquinol, cytochrome C dysfunction, and imbalances in selected fatty acids markers. The metabolomic analysis of mild asthmatic children showed a strong association between key metabolic markers and pulmonary function measurements. Restoration of specific nutrient deficiencies and personalized diet based on the metabolomic analysis resulted in drastic improvement of the skin lesions and lung function respectively, within a few weeks from start of treatment in most cases.

Conclusions: We demonstrated that diet and lifestyle had a determinant role on the disease progression and highlighted the potency of metabolomics in identifying the nutritional deficiencies in the disease state.
FULMINANT COURSE OF VALVULAR INSUFFICIENCY ON A MALE PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOSOUS, MEKELLE, ETHIOPIA

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Background: Systemic lupus erythematosus (SLE) is a chronic inflammatory disease of unknown cause that can affect the multiple organs of the body. Cardiac involvement among children with SLE ranges in various studies from 12 to 54 percent. The manifestations are varied in nature and severity. Valvular lesion is the most encountered form of heart disease in systemic lupus erythematosus (SLE). The mitral valve being the commonest site.

Case presentation: We report a case of 16 years old adolescent who was referred from district hospital in Tigray region. He was newly diagnosed Systemic lupus erythematosus with rapid progression of valvular insufficiency and congestive heart failure. This is a rare case reports on with diagnostic and therapeutic challenge.

Conclusions: Cardiac involvement in systemic lupus erythematosus is a multifaceted disease with irreversible valvular damage. Frequently changes over short period of time and is associated with substantial morbidity and mortality unless immediate medical and/or surgically intervened. High index of clinical suspicion of SLE must be considered in patients with polyserositis and multi organ involvement.

Key words: Valvular insufficiency, Systemic lupus erythematosus, Mekelle, Ethiopia
TREATMENT WITH POLYMERIC MEMBRANE DRESSING FOR HEMANGIOMA ASSOCIATED ULCER

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Background: A healthy five weeks old baby was admitted to the ER for an extensive hemangioma on his buttocks. According to the infant's parents, three days before the admission redness appeared around the anus, it bled and then started to ulcerate. The child was admitted for what the parents had described as a "severe rash", during this period the child had been treated with a number of different ointments with no relief. The parents consulted with a dermatologist who diagnosed the "rash" as a hemangioma, referred them to Emek Hospital's dermatologic ward for further evaluation and treatment.

Observation: When arriving at the hospital, the infant had been examined by a pediatrician at the pediatric emergency ward, at which time the hemangioma was cleaned and treated with polymeric membrane dressing (PMD) the child was referred to the dermatologist ward for further consultation; since the hemangioma was extensive (6-8) cm and located around the anus, spread on both sides of the buttocks with ulcers at the center. It was decided to treat it with systemic oral medication, Deralin (Beta-blocker) and to complete enquiry to eliminate the possibility of "lumbar syndrome"

Key message: Polymeric membrane dressing has been shown to have a good effect on the ulcerated lesions. The dressing was changed every day and a good result was achieved. This is a novel use of these dressings.
CLINICAL MANAGEMENT OF ATOPIC DERMATITIS IN CHILDREN <2 YEARS OLD BY PRIMARY CARE PROVIDERS

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Background: Atopic dermatitis (AD) afflicts at least 10% of US children, and most commonly develops early in life. Management guidelines for children <2 years old do not exist. Treatment practices by primary care providers for these children are not known.

Objective: Examine primary care provider management of AD in children <2 years.

Design/Methods: Pediatric providers from 12 Pediatric Practice Research Group (PPRG) practices completed an online survey assessing AD care for young children. One year of data (2017) from a common electronic health record were used to evaluate AD treatment practice documentation. Data reviewed included demographics, AD-related visit and problem list diagnoses, prescriptions, and referrals. Frequencies and chi-square test were applied.

Results: 52/135 providers (39%) completed the survey. Providers had a median 19.0 (3-41) years in practice, cared mostly for privately insured patients (79%), and most (73%) belong to practices with 4-14 providers. All providers were comfortable treating mild and moderate AD, and 30 (58%) were uncomfortable treating severe disease. 41 (79%) reported under use of topical steroids, and 19 (37%) reported parents do not always follow topical steroid recommendations. Providers expressed a need for stepwise management guidelines and quicker access to specialists. There was no difference in AD management practices by provider type, experience or practice size. Among the 70,084 patient encounters 51.7% were from females, and 55.5% not Hispanic. Topical anti-inflammatories for AD were prescribed in 1,485 (2%) encounters. Of topical steroids prescribed, 39 were high potency (3%), 298 were medium potency (20%) and 1,148 were low potency (77%).

Conclusions: Primary care providers are comfortable managing mild to moderate AD in children <2 years. Further guidance is needed to improve provider ability to manage severe AD, especially on addressing under-treatment of AD with topical steroids, improving access to specialists and family adherence to provider recommendations.

Keyword(s): Toddlers, infants, atopic dermatitis
ANALYSIS OF OUT-OF-HOSPITAL PAEDIATRIC CARDIAC ARREST IN THE NETHERLANDS, A HEMS- BASED NATIONWIDE RETROSPECTIVE STUDY.

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Keywords: Pre-hospital, cardiac arrest, paediatrics

Introduction: The Netherlands has a reputation in the organisation and outcome in out-of-hospital cardiac arrest in adults. However, very little is known about paediatric cardiac arrest in The Netherlands. Even about in-hospital events no data is known. This initially first study was to determine the incidence, origin and outcome of out-of-hospital cardiac arrest (OHCA) in children in The Netherlands. Although the Dutch ambulance protocol states several treatments, only Helicopter Emergency Medical Services (HEMS) provided additional Advanced Life Support (ALS) care in this patient category.

Materials and methods: We provided a retrospective evaluation of all paediatric (0-17 years) OHCAs within a 2-year period. These cardiac arrests were attended by one of the four Dutch HEMS-teams during the period July 2015 to July 2017. Data of all Dutch HEMS-teams were collected.

Results: During the study period we registered 205 OHCAs. The overall mortality rate was about 61%. 73/205 (35.6%) were traumatic, 128/205 (62.4%) were non-traumatic and 4 (2%) were from unknown origin. Due to the ongoing analysis when submitting this abstract, less data can be shown yet. We will be able to show more data in about 2 weeks.

Conclusion: This study gives insight in the incidence, origin and outcome of out-of-hospital cardiac arrest in children in The Netherlands. The Helicopter Emergency Medical Service brings essential medical expertise in the field not provided by regular emergency medical service.
CHARACTERISTICS, MANAGEMENT AND OUTCOME OF PREHOSPITAL PEDIATRIC EMERGENCIES BY A DUTCH HEMS; AN OBSERVATIONAL STUDY OF 1,905 DISPATCHES

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Background: Currently there is little information regarding pediatric patients requiring Helicopter Emergency Medical Service (HEMS) assistance in the Netherlands. According to dispatch protocol HEMS is dispatched for patients likely to require prehospital interventions out of Emergency Medical Service (EMS) protocol.

Methods: Retrospective chart review of patients ≤17 years, receiving medical care from the Rotterdam HEMS from January 2012-December 2017.

Results: We included 1905 patients, 59.1% male. Average age 6.1 years, 53.2% ≤3 years of age. Trauma patients formed 53.6% of the population, non-trauma 49.7%, some patients were classified as both. Intubation was performed in 18.8%, surgical procedures such as thoracostomy in 0.9%. Cardiopulmonary resuscitation (CPR) was necessary in 12.9%. HEMS transferred care back to EMS in 50.7% at the scene. Out of patients of whom in-hospital follow-up was available(n=884), 379 (42.9%) were admitted to Intensive Care Unit, 266 (30.0%) required mechanical ventilation in hospital. Mortality in the trauma group was 5.3%**, for non-trauma 15.2%**. A total of 74 (3.9%) of patients was pronounced dead at the scene.

Conclusion: EMS has little exposure to critically ill or injured children, these patients however frequently require advanced prehospital interventions and have a high mortality therefore additional HEMS expertise is required.

We found a remarkable lower survival in the non-trauma patient, possibly due to underlying illnesses and nature of events such as cardiopulmonary arrest. Further research is needed to recognize these patients in an early stage and adjust EMS and HEMS protocol for this vulnerable group.

Keywords: EMS; HEMS; Prehospital; Pediatrics; Outcome

** We have additional follow up data concerning mortality, this will be available in 1-2 weeks
Background: Emergency Medical Service (EMS) is primary responsible for theprehospital care of all patients. Additionally the physician staffed Dutch Helicopter Emergency Medical Service (HEMS) is dispatched for more advanced care. In the Netherlands 12.7% of births are planned home deliveries guided by midwives (N=21,434). No data is available about neonates in need of prehospital emergency care.

Methods: Retrospective chart review, January 2012-December 2017, neonates on the day of birth receiving medical care from Rotterdam HEMS.

Results: We included 52 patients 73.1% full term. Home delivery was intended in 63.5%; in 20% an uncomplicated delivery was followed by a poor start of life. Most of unintended deliveries were preterm (70.6%). Two babies were born by resuscitative hysterotomy, one survived in good neurological condition, the other died at the scene. Fifteen (28.9%) required cardiopulmonary resuscitation, in two no resuscitation was started on medical grounds due to extreme prematurity/low birth weight, 12 of the other 13 regained spontaneous circulation. In 63.5% respiratory interventions were required, 8 (15.4%) needing intubation. Death was confirmed in 5 (9.6%), all preterm, babies.

Conclusion: Considering the amount of home deliveries only a few neonates required HEMS assistance. We found a low percentage of preterm infants compared to international literature, although all mortality was in the preterm group. A high percentage of neonates required respiratory interventions and resuscitation, as expected considering dispatch criteria. The Dutch prehospital system seems well equipped for neonatal emergencies. All neonates received adequate basic life support either by attending midwife or first responder.

Keywords: EMS; HEMS; Neonatal; Prehospital; Resuscitative hysterotomy
CORRELATES OF EATING BEHAVIORS IN OVERWEIGHT/OBESE ADOLESCENTS IN TAIWAN: PSYCHOMETRIC AND CORRELATION ANALYSIS OF THREE-FACTOR EATING QUESTIONNAIRE-R21

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Background: Eating behaviors are important for human survival but unhealthy eating behaviors, like overeating of sugared and energy-dense foods, may contrarily contribute to the current epidemic of obesity. The Three-Factor Eating Questionnaire (TFEQ) is a self-assessment scale used widely in the studies of eating behaviors, but its short form TFEQ-R21 has not been validated in the Taiwanese population.

Objective: To assess the factor structure and reliability of TFEQ-R21 in obese and non-obese individuals in Taiwan, and to identify the correlates of eating behaviors in overweight/obese adolescents in Taiwan.

Materials and Methods: Data were obtained from Taiwanese adolescents recruited from the clinics and communities. We applied the confirmatory factor analysis to test the model fit of pre-conceptualized three domains on the present data. Further univariate and multivariate linear regression analyses were applied to identify the correlates of different TFEQ-R21 subdomains.

Results: The Comparative Fit Index for the TFEQ-R21 was 0.908, which confirmed the three-factor structure (i.e. cognitive restraint [CR], uncontrolled eating [UE], and emotional eating [EE]) of the Taiwan version of TFEQ-R21. Only CR correlated with SCOFF scores (r=0.351). Body shape discrepancy, rather than weight status, was associated with CR in both males (β=0.12, 95% odds ratio [CI] 0.03-0.22) and females (β=0.22, 95% CI 0.12-0.31). Gender difference was noted in the correlates of UE and EE, as ideal body shape in males and self-perceived stigma in females were the main associative factors.

Conclusions: The Taiwan version of TFEQ-R21 is a robust and reliable tool measuring the eating behaviors in adolescents. Gender differential correlates of eating behaviors require clinical and public health attention when implementing weight management programs.

Keywords: adolescent; eating behavior; obesity; Three-Factor Eating Questionnaire
AUDIT: DATA COMPLETION IN ADULT HEALTH REPORTS FOR FOSTERING AND ADOPTION

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Background: The requirements to collect information on prospective adoptive applicants and foster carers are laid down in the relevant adoption and fostering regulations in the UK. CoramBAAF has devised an Adult Health (AH) Report Form to obtain information on the applicant’s health in order to secure the future wellbeing of any child placed. Part A is completed by the agency. Part B is to be completed by the applicant and reviewed by the General Practitioner (GP). Part C is to be completed by the GP.

Aim: To assess the completion and quality of information in the AH report forms

Objective: To improve the matching process in the fostering and adoption of vulnerable children

Method: Retrospective audit of completion of demographics, physical and mental health, lifestyle, BMI, CVS risk score, income support, immunizations including Hepatitis B, GP comments and additional information required from secondary care in 25 random AH forms in 2018

Results: >95% of the data was complete only for physical, mental health, income support and drugs. Further information from secondary care was required only in 8%. The demographic data was complete in 80%. Information on exercise, diet, smoking and alcohol was complete only in 48%, 52%, 44% and 20% forms respectively. 88% and 80% of the forms had a BMI and CVS risk score complete respectively. 84% of the immunization data was complete and only 19% of the applicants were immunized against Hepatitis B. The GP comments were appropriate in 24%, less relevant in 12%, insufficient in 56% with no comments in 8%.

Outcome: The results demonstrate that there is insufficient information for most of the questions, despite the prompts in the form. This results in a delay in the assessment process and might impact the placement of children. The GP completing the comments part appropriately considering the relevant data for each applicant would assist the medical adviser in providing a report quicker than now and in the long-term GPs could be looked into being recruited as medical advisers themselves for cost effectiveness.

Recommendations: The audit results and the importance of improving the quality of completion of forms with emphasis on specific areas of alcohol and smoking quantity, BMI, CVS risk score, recommending Hepatitis B immunization are being communicated to the local GPs in the form of a letter.

Keywords: Adult Health, data
AUDITING THE QUALITY OF HEALTH INFORMATION DURING THE INITIAL HEALTH ASSESSMENT OF CHILDREN IN CARE BASED ON THE STATUTORY GUIDANCE FOR PROMOTING HEALTH OF LOOKED AFTER CHILDREN

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Aims: To ensure that appropriate health information was captured and of high quality during the medicals for “children in public care”.

Background: It is a statutory requirement that the health information collated during the initial health assessment of children in care is of good quality and that the information is transferable and easy to understand. There is a requirement during the CQC inspection process that this is evident from the reports. Robust systems of ensuring that these medicals are timely and comprehensive have been in place.

Methods: An unannounced quality assurance audit has been undertaken of all the health assessments for the month of December 2017 (18 children) and 10 children in January 2019 placed in care in Stoke on Trent and North Staffordshire.


Results: All the health assessments passed the quality assurance process and were within the specified timescale except one which was out of time scales due to 2 children not being brought for their appointments. The audit included babies, toddlers, teenagers and Unaccompanied Asylum Seeking Children and all were found to be very comprehensive assessments with the voice of the child clearly documented throughout. Reference was made to the medical records, carers and social worker where applicable and referrals/liaison with other professionals evident. Red Cross referrals made for family contacts. The audit revealed that numerous medical concerns were identified and referred on appropriately for example heart murmur, blood screening, enlarged liver and spleen. Potential implications for the child’s future health were explained in detail.

Conclusion: The initial health assessments were of a high standard.

Suggestions for strengthening the quality -
1. Dental and optical health to be included on the health plan, with the name of the dentist and optician recorded with the date of the child’s most recent appointment recorded.
2. Documentation of written consent.
3. Consideration to who is bringing the child and what their relationship with or knowledge of the child is and whether they should be in the consultation room.
4. Supporting evidence should be obtained from the social worker to ensure a comprehensive holistic assessment.
ASSESSMENT OF THE BODY POSTURE AMONG CHILDREN WITH LOIN BACK PAIN IN THE DIERS IMAGE.

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Introduction: Among young people, backache is often the beginning of the chronic and non-stationary health issues, evincing in the intrusive discomforts influencing the disturbance of life quality. The symptoms are mainly localised in the lumbar segment of the spine. This leads to the formation of disturbances of muscles, ligaments and joints.

The aim of the thesis: The aim of the thesis is to assess the body posture of patients with spine pain using the DIERS Formetric 4D system as objective diagnostic tool. Material and methods: The research included 32 patients, 13 boys and 19 girls, aged 15-17 years, hospitalized at the Department of Orthopedics and Traumatology of the Świętokrzyskie Center of Pediatrie in Kielce with back pain. They were diagnosed of lumbosacral disc disease, confirmed by computed tomography or magnetic resonance imaging. The interview and medical examination did not show any comorbid conditions that could affect the reported symptoms. DIERS Formetric 4D system examination was conducted in order to analyse the spine disorder in three planes. The measurement was conducted on the first day of the patient's stay at the Orthopedics Department and on the last day of the stay. The study evaluated: torso inclination, lumbar lordosis angle, lateral deviation and spinal rotation were evaluated in the research. Pain severity and intensification and their change were monitored by using the numerical NRS scale. The patients were improved by individually selected therapy using the techniques of the McKenzie and Vojta methods. An important role was also played by reeducation of the patient in the area of taking by the patient the optimal treatment for the process of improving the body posture.

Results: Among the patients being kept under observation, the torso inclination towards the front reduced by an average of 1,92 degrees was noticed. In examined patients the angle of lordosis increased by 7,4 degrees. The arch of the Lateran spinal curvature of the spine was reduced by 8,97 mm. The torso's rotation was reduced by 4,86 degrees. Pain complaints among patients during their stay at the ward were reduced to 0.

Conclusions: The examination of patients before the start of therapy shows that among the patients with discopathy, the torso inclination, angle of the lumbar lordosis, lateral deviation and rotation of the spine are disturbed. There is a need to conduct further research on the posture of children with back pain by using an objective diagnostic tool, the DIERS system.

Keywords: DIERS, Physiotherapy, Back pain.
THE COMPARISON OF IMPACT OF PHYSIOTHERAPY ON SPINE SHAPE AMONG CHILDREN WITH POSTURE DEFECTS DEPENDING ON THE DEPTH OF THORACIC KYPHOSIS.

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Introduction: There are postural disorders observed in the child population. It causes disorders related to incorrect load of the spine and its joints. Backs with reduced curvatures are more susceptible to curvature of the spine in the frontal plane. Early detection of postural disorders would affect the development of effective prophylaxis and treatment.

The aim of the thesis: The aim of the thesis is to compare the impact of individual improvement on the spine shape among children with faulty posture on the following values: thoracic kyphosis depth, lateral deviation of the spine and rotation of its physical segments.

Material and methods: The research included 200 patients. The age range of the studied group was between 8-11 years. According to gender, there were 102 boys and 98 girls in the group. The interview and medical examination did not show any comorbid conditions that could affect the reported symptoms. Measurements of parameters that were undergone the analysis were made before the first therapeutic session and after 6 weeks of therapy. The angle of thoracic kyphosis, lateral deviation of the spine and rotations of its physical segments were assessed. The therapy consisted of techniques of PNF methods and Vojta method. The results were assessed separately for both genders, and separately for patients with thoracic kyphosis <42 ° and patients with thoracic kyphosis ≥42 °. Statistical analysis was performed by using the Chi² test p <0.05.

Results: The normalization of thoracic kyphosis angle in the range from 0,21° (in the group of boys with thoracic kyphosis <42 °) to 5,57 ° (in the group of girls with thoracic kyphosis ≥42 °), spine rotation in the range from 0,52° (in the group boys with thoracic kyphosis ≥42 °) to 4,54° (in the group of patients with thoracic kyphosis ≥42 °), and lateral variation in the range from 1,43 (group of boys with thoracic kyphosis <42 °) to 3,21mm (in the group of patients with thoracic kyphosis ≥ 42 °) was observed.

Conclusions: An individual therapy based on a combination of neurophysiological methods allows to achieve positive effects, in the form of thoracic kyphosis angle, spine rotation and lateral deviation among patients with posture defect. Children with shallow thoracic kyphosis are characterized by a smaller improvement in the angle of thoracic kyphosis, lateral deviation and spinal rotation than patients with thoracic kyphosis, the size of which exceeds 42 °.

Key words: Faulty postures, DIERS, Physiotherapy
LIVER DYSFUNCTION SECONDARY TO EXTRAHEPATIC DISEASES IN CHILDREN

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Introduction. The liver seems to be a susceptible organ that is involved in various extrahepatic diseases. Being at the crossroads of the systemic circulation and between the digestive tract and the body's internal environment, it is exposed to numerous pathologic factors, including toxins, drugs, infections, antigens, inflammatory mediators, metabolic disorders, etc. At the same time, it is a stable organ that is able to recover after the damage and inflammatory process. Evaluation of hepatic functional reserve is important for both the treatment and the risk prediction for liver failure. Because the elevated serum levels of liver enzymes do not accurately reflect hepatocellular dysfunction but rather liver damage, there is a need for alternative methods to assess active hepatocellular function. Such a marker is OCT, its activity is detected in only liver mitochondrial matrix and participates in urea cycle.

Objective: Use of marker OCT for early recognition of liver damage in children with various extrahepatic diseases.

Materials and Methods: The prospective cohort study done in the YSMU Department of Pediatrics No1 have shown the role of hepatic mitochondrial biomarkers, such as OCT, for early detection of liver dysfunction in children (171) with various extrahepatic conditions: acute respiratory infections (84), urinary tract infections (25), gastroduodenal diseases (35), cystic fibrosis (27).

Results: The study demonstrates that OCT is released earlier than other liver enzymes. Also, a strong correlation between OCT's level and severity of extrahepatic disease is found. In cases of practically normal levels of serum transaminases, elevation of OCT activity was seen in patients. Using the high OCT activity (> 21.1 U/L) as a starting in the proposed diagnostic algorithm and allows to recognize different degrees of severity liver dysfunction.

Conclusions: Various diseases are accompanied by changes in liver function that are often not clinically apparent, but may have a significant impact on the course of disease. Therefore, the use of sensitive markers (such as OCT) is important for early detection of the liver injury.

Keywords: hepatic dysfunction, mitochondrial dysfunction, ornithine carbamoyltransferase (OCT).
A CASE OF GI TUBERCULOSIS PRESENTING AS INTESTINAL OBSTRUCTION; AFAR, ETHIOPIA

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Background: Gastrointestinal tuberculosis with manifestations reflecting intestinal ulcero-constrictive disease can present as a case of intestinal obstruction. The diagnosis of the might also be very difficult before biopsy and pathologic confirmation.

Case presentation: A 15 year female patient presented with 3 days of failure to pass feces and flatus. The abdominal x ray showed features of intestinal obstruction. With the impression of intestinal obstruction she was operated on and was released and biopsy sent from mesenteric lymphadenopathy. Histo-pathological findings were consistent with tuberculosis. Patient was started on anti TB and discharged on follow up with improvement.

Conclusion: GI tuberculosis is catastrophic to the patient who might pose to increased morbidity and mortality. It is very important to have high index of suspicion especially lack of specific signs and symptoms. We have reported the case to show difficulties faced in establishing diagnosis of intestinal TB. Medical management remains to be the mainstay of treatment. Surgery is warranted for complications such as high-grade obstruction and perforation.

Key Words: Gastrointestinal Tuberculosis, Intestinal obstruction, Dubti Hospital
Infectious diseases

MYCOTIC MYCETOMA IN PATIENTS ADMITTED TO SURGICAL WARD DUBTI HOSPITAL AFAR

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Background: Mycetoma is a unique neglected tropical disease which leads to granulomatous inflammation of subcutaneous tissue. The diagnosis of the disease is very difficult before it granulates.

Case: We report case of mycotic mycetoma of the 3rd toe in a 8 year-old child, pastoralist, treated by Ketoconazole in 6 months after which excision was done and subjected to histopathology. There are also cases with mycetoma of the chest and the foot with different outcome.

Conclusion: Mycotic mycetoma is described as a preventable common neglected disease, with a favorable prognosis when detected earlier. The treatment of mycotic mycetoma depends on the individual clinical scenario, the ultimate aim being limb preservation with medical intervention. Despite the medical treatment of mycotic mycetoma surgical intervention with amputation and debridement is required when patients of late presentation. Thus, an earlier diagnosis and treatment can elicit good results.

Key Words: Granulomatous Disease, Subcutaneous Tissues, Mycotic Mycetoma
DISTRIBUTION OF HEPATITIS B VIRUS (HBV) MARKERS AMONG HEPATITIS B INFECTED PATIENTS ATTENDING BENUE STATE UNIVERSITY TEACHING HOSPITAL, MAKURDI NIGERIA.

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Background: Diagnosis of HBV infection in most health institutions in Benue state is based on serological screening for the presence of HBsAg alone in the blood of the patients.

Aim: This study was set up to ascertain the distribution of HBV markers among patients attending BSUTH Makurdi.

Methods: The study was laboratory based and retrospective in nature involving compilation of laboratory data on HBV markers among patients from 25 June 2015 to 24 June 2016 at Medical Microbiology laboratory of BSUTH. Data obtained was analysed using SPSS 20 version and P values ≤ 0.05 were considered significant.

Results: Six hundred and eighty eight patients were tested for HBV markers consisting of 375 (54.8%) males and 313 (45.5%) females. The age range was 3 to 75 years; mean age was 40; Median age 43 and mode 41. Serological tests among 223 (32.4%) showed that HBsAg, anti-HBs, HBeAg, anti-HBe, and anti-HBc were all negative implying no infection; and in 190 (27.7%) patients, the following result was obtained: HBsAg-negative, anti-HBs-positive, HBeAg-negative, anti-HBe-negative, and anti-HBc-positive also implying no ongoing infection. In 32 (4.6%) of the patients: HBsAg was negative, anti-HBs-positive, HBeAg-negative, anti-HBe-negative, and anti-HBc-negative which also means no active infection; while in 162 (23.5%) of the patients, HBsAg was tested positive, anti-HBs-negative, HBeAg-positive, anti-HBe-positive, and anti-HBe-positive signifying acute HBV infection. Also in 67 (9.7%) of the patients, the following result was obtained: HBsAg-positive, anti-HBs-negative, HBeAg-negative, anti-HBe-positive, and anti-HBe-negative signifying ongoing chronic HBV infection; and in 14 (2.1%) patients only anti-HBe was positive and the rest negative implying inconclusive result. Among the 67 persons with chronic HBV infection, 61.2% (41) and 38.8% (26) were males and females respectively (P<0.05); and among the 162 patients with acute HBV infection, 57.4% (93) and 42.6% (69) were males and females respectively (P>0.05). And among the indeterminate group of 14 persons 35.7% (5) and 64.3% (9) were of male and female gender respectively (P<). Conclusion: HBV infection is still endemic in Benue state and indeed Nigeria, serological tests should not only stop at HBsAg screening alone but markers should be equally detected for a more comprehensive clinico-laboratory definition of cases.

Key Words: Hepatitis B, Markers, Viral
TREATMENT OF A CHILD EXPOSED TO AN ANIMAL SUSPECTED OF RABIES

Author: Osnat Naor - Registered nurse from the Children's Council

Emek Medical Center

Background: In 2016, children in the E.R. Emek Medical Center began to receive requests for trauma in children, including animal's bites and scratches. Accordingly, a number of procedures were performed in the E.R., writing a protocol for treatment and in coordination with the Regional Health Bureau.

Rabies outbreak in the area: In November there was an outbreak of more than 100 rabies cases in the area. Infected animals were discovered in Beit She'an, Afula, villages in the Izrael Valley, the Springs Valley and the Gilboa Regional Council.

Preparation and training of the staff for children affected by animals:
- Training the staff to receive and provide optimal treatment for a child who has been bitten or in contact with an animal suspected of rabies.
- Registration and documentation of the unintentional injury component of "Beterem" organization
- Implementation of the vaccination procedure in case of animal bite (Ministry of Health)
- Writing a flowchart in case of a child that was bitten.
- Preparing a training program for schools and kinder gardens.
- Implementation of training in educational institutions in our region.
- Distribution of the program at an annual conference of "Beterem" organization.

Case description:
- A.A, 4 years old girl, was accepted on 2/11/2017, and was admitted to the E.R. because of a bite.
- The suspected as infected jackal entered the kitchen of their home in Beit She'an and bit the girl in the thigh.
- The child is usually healthy, without regular medication, vaccinated according to the recommendations.
- The child was treated according to the new protocol.

Conclusions and Recommendations
- The main conclusions are that many cases can be prevented.
- Adult supervision of children aged 10-14.
- Teach children not to approach or pet animals that are wandering or unfamiliar.
- Ensure that all animals living in populated areas are vaccinated.
- Training in primary schools - by nurses and volunteers - about rabies and precautions and avoiding contact with wandering animals.
THE IMPORTANCE OF PRIMARY ANTIBIOTICS TREATMENT FOR CHILDREN WHO HOSPITALIZED DUE TO INFECTION DISEASES – RETROSPECTIVE RESEARCH

Author: Osnat Naor
"Emek" hospital, Afula, Israel

Research background: Research in adult subjects show that as early as Pneumonia is being treated with antibiotics, the chances to recover are higher and the odds of infectious complications is lower. As a result, it is custom nowadays to follow a quality assurance protocol stating that a treatment in the disease is crucial within the first 6 hours of a hospitalized patient visiting the medical facility. Equivalent research sources lack the information of how to treat other infectious diseases; Assuming the results will be similar, the common approach in Ha’emek Medical Center is to treat adult subjects, regardless the type of infections, with the same antibiotics treatment during their residency in the ER. To our best knowledge, no equivalent research has been conducted in children.

Objective: Examine the effects caused by primary antibiotics dose in hospitalized children who suffer from Pneumonia or urinary tract infection.

Methodology and process: We retrospectively enrolled all hospitalized children in the time space between Januarys to June of 2017. Including the previous year in which the implementation did not took place yet. The entire metadata has been taken from the hospital’s computer systems. All metadata has been extracted from internal computerized systems and ER and hospitalization folders, which will include the ER counter desk registration hour, primary antibiotics dose hour (in ER or respective ward) and duration of hospitalization in days, for every child which will be assigned as research subject. The metadata will be stored in Excel spreadsheets and calculation will include the average duration from first hospital patient registration in the front desk and until receiving the first dose of antibiotics, and the average hospitalization duration. Comparing the results between the two groups of research will be done using Student T Test.

Results: Improving the TTA (Time to Antibiotics) parameter shortens the hospitalization time of children diagnosed with pneumonia and UTI. Shortening the duration of hospitalization affects the satisfaction of patients, the staff, and saves on hospitalization costs

Conclusions: Improvements in this indicator may help reduce the complications of these diseases, but more studies are needed. The process proves that cooperation among all the "one-headed" teams is an essential parameter in the success of changing significant work processes.
FACIAL NERVE PALSY OF THE NEWBORN SECONDARY TO ACUTE OTITIS MEDIA WITH MULTIPLE ABSCESSES: AN UNUSUAL PRESENTATION OF SEPSIS IN THE NEWBORN

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Background: Sepsis remains a significant cause of morbidity and mortality among newborns globally. Inadequate diagnosis and therapy may aggravate the occurrence of complications. One of the rare yet important complications to consider is acute otitis media (AOM) that can lead to facial nerve palsy. The present case highlights an unusual presentation of facial nerve palsy in a newborn associated with AOM and multiple abscesses as a complication of ampicillin-resistant E. coli infection.

Observation: A 15-day-old male newborn was referred to Soeradji General Hospital from a private hospital in Klaten, Central Java, because of unresolved sepsis with grade IV (House Brackman classification) right-sided facial nerve palsy, and multiple abscesses (perianal and perioral region, and conjunctiva). The newborn was delivered healthy by Caesarean section, full term, and birth weight 3000 gram, without any history of birth trauma. We identified right AOM as a complication of the unresolved sepsis and the etiology of the facial nerve palsy. Ear discharge and abscess cultures were performed identifying ampicillin-resistant E. coli. Meropenem administration showed remarkable improvement for the sepsis, abscesses and AOM; however, the facial nerve palsy persisted. After a 6-week follow-up, there were no other sequelae.

Key message: In this antibiotic era, facial nerve palsy is an uncommon complication of AOM, with an estimated incidence of 0.005% compared with 0.5-0.7% in the pre-antibiotic era. The nerve recovery may take weeks to 2–3 months until returning to its normal functionality. Neonatal AOM could be a local infection or part of a generalized infection yet the neonatal diagnosis presents difficulties when compared with older children. E. coli and group B streptococcus (GBS) are the most common causes of neonatal bacteremia. E. coli sepsis is associated with high mortality and morbidity compared with GBS. AOM should also be considered as one of its complication. Early diagnosis and treatment of sepsis are important for a successful outcome and to prevent further complications. Rare incidence of this type of case may lead to less consideration by the clinician. Hence, discussion of this case is essential for a more accurate and comprehensive diagnosis and management.
HUMAN MILK BANKING - INDIAN EXPERIENCE

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Background: Although there is overwhelming evidence demonstrating the benefits of usage of Donor Human Milk over Formula Feeds for Preterm and High Risk Neonates, there was no Human Milk Bank in the city of Bengaluru, which has 42 NICUs.

Objective: To advocate the use of PDHM (Pasteurised Donor Human Milk) as an alternative to MOM (Mother’s Own Milk) to Preterm and High Risk Neonates in various NICUs in the city of Bengaluru, India.

Methods: Amaara Public Human Milk Bank was established by Breast Milk Foundation, a not for profit NGO, at Fortis La Femme Hospital in October 2017 as Bengaluru’s 1st Public Human Milk Bank to promote the use of PDHM (Pasteurised Donor Human Milk) as an alternative to MOM across 42 NICUs in the city. Until then all NICUs in the city were using formula feeds to feed these vulnerable babies when mothers could not produce enough breast milk or if baby is separated from the mother for Advanced Neonatal Care. After launching the Amaara Human Milk Bank, invitations were sent out to all the NICUs and CMEs were conducted for Neonatologists, Obstetricians & Lactation Consultants in the city to help identify voluntary donors and sensitise the professionals, the concept of Human Milk Banking, to promote the usage of PDHM in NICUs. HMBANA & NICE guidelines were followed for screening, procuring, pasteurisation, storage & dispensal of PDHM. Multiple screen and print media came forward to promote the concept of Human Milk Banking in the city and encourage healthy mothers to donate excess Breast Milk to Amaara. Robust collection and delivery system was designed to minimise the inconvenience to donor mothers and recipient babies in NICUs. Upon receiving the prescription from Neonatologists from various NICUs, PDHM was dispensed to the NICUs with printed instructions and guidelines. Follow up calls were made to know if any adverse events following usage of PDHM. Usage of PDHM was studied over next 12 months.

Results: Total of 90 donor mothers voluntarily donated 391,115 ml of DHM. 355,550 ml of Pasteurised Donor Human Milk was delivered to 36 NICUs benefiting 170 high risk preterm / growth restricted babies. No adverse events reported from any of the NICUs following usage of PDHM. In these 36 NICUs usage of PDHM as an alternative to MOM for Preterm and High Risk Neonates has become a regular practice, hence improving Neonatal Outcomes in the City.

Conclusion: In a developing country like India more such Public Human Milk Banks should be set up to promote use of PDHM as substitute to MOM to improve Neonatal Outcomes in Preterm and High Risk Neonates.

Key Words: Human Milk Banking, Donor Human Milk,
RISK FACTORS OF DEVELOPMENT OF TROPHIC DISORDERS IN NEWBORN CHILDREN

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Introduction: The frequency of intrauterine growth retardation is 4-15%. Mechanisms of its development are not quite clear.

Objective: To study patterns of formation of trophic disorders in newborns.

Materials and methods: 174 pairs of mother - newborn were studied. There were 46 children “Light for gestation age” (P05.0 according to the ICD-10), 83 of “Small for gestation age” (P05.1) and control - 45 healthy children. Growth hormone (GH1) and insulin-like growth factor (IGF II) were studied by ELISA. Polymorphisms of the GH1 gene and IGF II gene were determined by real-time PCR.

Results: Among children with trophic disorders, “Small” (70%) was prevailed. Risk factors for the birth of children with both types of metabolic disorders were: hypertension, preeclampsia, placental insufficiency, parental nicotine dependence. For “Light” were a thyroid gland diseases (OR 2.0 [1.67-2.39]), for “Small” were dystonia, cardiac type (OR 4.05 [2.5-6.47]), deficiency of maternal body mass (OR 2.96 [2.3-3.8]). “Light” had an increase level of growth hormone to 29.29 ng/ml (p <0.01) and a decrease in IGF II to 136.56 µg/ml (p <0.01) compared with the control. “Small” had a decreased IGF II of 179.65 µg/ml (p<0.001).

In 29 (63%) of 46 “Light” the TA genotype of the GH1: g.6169 T> A gene was registered versus 20 (44%) in the control group (p = 0.016). The frequency of the heterozygous variant of genotypes GH1 polymorphism: g.4995A> G in the 1st group was revealed 2 times more often than in healthy children (p = 0.002). Carrying of this genotype, the risk of prenatal weight deficit was increased in 3 times - OR 3.0 (95% CI: 1.25-7.22). In “Light” the frequency of the heterozygous genotype GH1: -68 rs6171 was higher than in the control 2 times OR 3.0 [1.25-7.22]. In the most of mothers who gave birth to the Light, the prevalence of the mutant G GH1: -119 allele was registered OR 2.05 [1.13-3.72]. 41% of mothers who gave birth to “Small” had a mutant (GG) homozygous GH1 genotype: -119 rs OR 2.78 [1.18-6.05]. The most often was the G minor allele of the polymorphism g.4944T> G and A of the polymorphism g.6169T> A in the “Light” and G polymorphism g.4944T> G in the “Small”.

Conclusions: Genetic polymorphisms of GH and IGF II were realized only in combination with maternal risk factors.
AN AUDIT OF INVESTIGATIONS OF CHILDREN PRESENTING TO COMMUNITY PAEDIATRICIANS WITH DEVELOPMENTAL DELAY AND COMPARISON WITH THE NATIONAL GUIDANCE-HOW ARE WE INVESTIGATING?

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Background: Investigation of global developmental delay varies between clinicians. The evidence based has evolved significantly over the last 20 years, especially with improved access to genetic testing. Comprehensive history and examination are paramount in the assessment.

Aims and Objective: The aim of the audit was to assess current practice of investigations

Methods: Patients were selected using search terms used were “global” “delay” and “development”, and we search for all children less than 5 years old- 217 identified. Certain children were excluded – such as those who were extremely premature, had an antenatal diagnosis. The aim was to capture the children referred to community paediatrics via the GP or health visitor and assess how the community paediatricians are investigating these children.

Results: 93% of patients had a micro-array. One also had a specific gene test for Prader-Willi. 17% of patients had an MRI Head requested as a first line investigation. Others went on to have this after their second or third appointments. This was delayed either to age, anaesthetic risk or evolving clinical condition. In up to 70% children metabolic testing was requested. A range of other tests were requested in a small number of patients. 2 patients tested for lead, 3 patients tested for biotinidase, 3 patients tested for CMV (1 was full TORCH screen), 2 patients tested for ferritin, 2 patients tested for ferritin electrophoresis, 1 oligosaccharides, 3 mucopolysacharides, 2 very long chain fatty acids and 1 LDH.

Discussion: Most children are getting the same baseline investigations including a microarray. There is a lot of variability in the requesting of metabolic and “other “investigations. Even when blood amino acids are taken, sometimes urine is not. Of the patients audited, there was no clinically important positive result from the investigations requested. Neuroimaging requests appear to be very appropriate – requested in the context of neurological findings on examination. Genetic laboratory. As such, it is quite difficult to know whether specific gene tests e.g. for fragile-X were requested if they are not specifically identified in the clinic letter.

Conclusion: There was lots of variation in requests made, ranging from just a microarray, to a full work-up including metabolic investigations and neuroimaging.

Recommendations: Team uniformity agreed for investigating developmental delay, outlining the indication for more specialist investigations when clinically indicated.
D-LACTATE LEVELS REDUCTION CORRELATIONS WITH REDUCED LIPIDS IN OBESE CHILDREN AFTER SHORT-TERM FRUCTOSE RESTRICTION

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Background: Fructose is an important lipogenic molecule. It increases both fatty acid synthesis and triose phosphate fluxes, which generate methylglyoxal (MG), implicated in diabetes pathogenesis. MG is detoxified to D-lactate which is a surrogate marker of whole body MG production. We hypothesized that fructose restriction leads to decreased MG and therefore D-lactate production.

Objective: We determined the effect of 9 days of a fructose- but not calorie- restricted diet on D-lactate levels in obese children with high habitual dietary sugar intake.

Design/Methods: Twenty high sugar consumer obese children BMI z-score 2.4 ± 0.1, (average fructose intake >50 g/day), had all meals provided for 10 days with the same caloric, CHO and macronutrient composition as their standard diet (reducing fructose from 12 to 4% of total caloric intake). D-lactate was measured with a specific enzymatic assay. Insulin, lipids, glucose were measured using standard methods on Day 0 (high fructose) and Day 10 (low fructose).

Results: D-lactate levels were significantly reduced (38%) after fructose restriction from 6.0 +/- 2 umol/l to 3.7 +/- 1.5 umol/l; p<0.0001). D-lactate levels at baseline correlated positively with TG, LDL-C, and TG/HDL-C ratio (r=0.39, 0.55 and 0.36 respectively, p<0.01) and negatively with HDL-C, r=0.3, p <0.05. Percent changes (Day 0-Day 10) in D-lactate levels correlated positively with percent changes in TG, LDL-C, and TG/HDL-C ratio (r=0.43, 0.36 and 0.36 respectively, p<0.01).

Conclusions: This is the first mechanistic evidence for a link between fructose consumption, MG fluxes, and therefore, glycation, which is a key contributor to diabetes complications.
COMPLEMENTARY FEEDING PRINCIPLES

Author: Nora Alkharji
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Abstract:
The first 2 years of life provide a critical window of opportunity for ensuring children’s appropriate growth and development through optimal feeding.

Infants should be exclusively breastfed for 6 months to achieve optimal growth and development.

WHO recommends that infants start receiving complementary foods at 6 months of age in addition to breast milk, initially 2-3 times a day between 6-8 months, increasing to 3-4 times daily between 9-11 months and 12-24 months with additional nutritious snacks offered 1-2 times per day, as desired.

The Guiding Principles for Complementary feeding of the Breastfed Child (2003) developed by the Pan American Health Organization, summarize the current scientific evidence for complementary feeding and are intended to guide policy and programmatic action at global, national and community levels, while the Guiding Principles for feeding the non-breastfed child 6-24 months of age (2005) provide guidance for feeding children who are not receiving breast-milk.

This lecture highlight the WHO guiding principle and how will apply the principle on daily basis

The strategy of this session are, power point presentation, simulation, my plate application for 3 meals and 3 snack using a food education module
MALNUTRITION IN CHILDREN- SOUTH AFRICA’S PRESENT SCENARIO

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Background: Malnutrition occurs when an individual’s dietary intake is not balanced with nutritional needs. More than 75% of the children admitted in Public Hospital of sub-Saharan Africa for medical reason are suffering from Malnutrition. 15% of South African infants are born with a low birth weight. The fact that 25% of pre-school children and 20% of primary school children in South Africa suffered from malnutrition.

Objective: Malnutrition is an underlying cause of severe poverty in Sub-Saharan Africa. According to statistics from the year 2000, 50% of the South African population is under the poverty line. The approach of Dietician and Pediatrician to fight back Malnutrition problems is a major problem in Africa, which is an ongoing effort.

Methods: Since 2011 to 2016 over the period of 6 years we followed total Paediatric admission in Stanger Hospital, KZN province, South Africa. Average annual admission is around 1400-1500(excluding neonates) in Paediatric wards, over last six years over 9000 children admitted in the hospital with predominant of female, female and male ratio was found 60:40. Of all the admission 25 to 30% found some sort of Malnutrition.

Results: The prevalence of malnutrition in South Africa varies across different geographical areas and socio-economic groups. Many infants in Africa suffer from malnutrition because their mothers do not breastfeed them. The 2010 South Africa Department of Health Study found that 30.2% of pregnant women in South Africa have AIDS and they are reluctant to Breast feed their children. The World Health Organization showed that over the span of thirteen years (1995 to 2008), the deviation from the average height of children under age five in South Africa has decreased from 28.7% to 23.9%.

Conclusion: In my talk I will discuss about African Children problems of SAM,NAM , MAM and their consequences as well as Breast feedings do’s and dose’s in respect of HIV/AIDS Scenario.
Introduction: The monitoring of the nutritional status of children and adolescents is a fundamental tool to control child morbidity and mortality rates. The evaluation of the child nutritional status is essential for the diagnosis of malnutrition and obesity and reveals the impact on the development, especially of the traditional populations such as the children that live near rivers in Brazil.

Objective: Describe the nutritional status of children and adolescents who live near rivers in the State of Pará, in the Brazilian Northern region.

Materials and Methods: Descriptive study involving 170 children and adolescents between 0 to 14 years old, resident of 29 riverside communities along the river Tapajós, assisted during the health expedition carried out in July 2018. The anthropometry was applied according to the internationally standardized technique and the data were converted to scores-Z using the WHO- Anthro software.

Results: 55.9% of female subjects and 44.1% of male subjects were assisted and monitored. The evaluation of the BMI revealed the percentages of well-nourished children and adolescents, corresponding to 75.3% of the sample. However, it was observed a percentage of children and adolescents with deviations from the growth patterns according to the international reference curves. A prevalence of 8 (4.7%) children and adolescents with thinness was detected and a prevalence above 5 (2.9%) with accentuated thinness called attention and required intensive care. Simultaneously with the malnutrition cases, it was also observed some children with overweight, ratifying the nutritional transition process occurring in the assisted regions. The evidence indicates 12 (7.1%) children at overweight risk, 8 (4.7%) with overweight, and more than 9 (5.3%) in the range of obesity.

Conclusions: The difficulties to be overcome by the child population that lives near rivers to achieve its potential of growth result from the socio-demographic, sanitary, ecological, and public policies of the regions where they live, which face a certain geographic isolation, limited survival means, and inadequate infrastructure that makes it impossible for these communities to access health services, adequate sanitary conditions and food, favoring the inequalities in health, education, and, consequently, food.

Keyword(s): Nutrition Programs; Child Nutrition Disorders; Community Participation
EFFECT OF MAJOR CHANGES IN BODY MASS INDEX (BMI) AND STANDARDIZED BMI (BMISDS) ON LINEAR GROWTH OF PREPUBERTAL CHILDREN.

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Background: Early detection of abnormal weight loss in childhood may be important for preventive purposes. Variable growth response to nutrition rehabilitation have been reported in children with failure to thrive (FTT) who do not have any chronic disease or systematic illness due to different clinical and nutritional approach in their management.

Aim: To analyze the effect of different BMI and BMI SDS on linear growth (HtSDS) in a cohort of prepubertal children (n = 470). In addition we studied the effect of weight changes on linear growth in a randomly selected group of these children.

Subjects and methods: All children between 1 and 9 years presented to the general pediatric clinic because of abnormal weight gain (decreased or increased) which is not related to any acute or chronic illness were included in this cross-sectional study. Physical exam and routine lab tests (CBC, renal and liver functions, ESR, thyroid function) did not show any abnormality. Anthropometric measurements included weigh, height, HtSDS, weight for height, BMI, and BMISDS. Children BMISDS were categorized into 4 groups: Group 1: BMISDS < -2, group 2: BMISDS < -1 but > -2 , group 3 BMISDS > -1 but < 2, group 4 BMISDS > 2. We evaluated the effect of weight changes on linear growth in a randomly selected group of these children who received nutritional counselling and oral nutritional supplementation (n = 35) for a complete year. The effect of different BMISDS on linear growth measured by HtSDS was studied using ANOVA test among the different groups and linear correlation equation for continuous data in 470 children.

Results: Changes in HtSDS in relation to different subclasses of BMISDS were analyzed. Obese children had the largest HtSDS (1.03 +/- 0.9) while children with BMISDS < -1 were significantly shorter (HtSDS = -1.7 +/- 0.9) compared to the other groups. Forty nine percent of the treated children exceeded the mean weight gain. The average weight gain at the last visit = 5.7 g/d. Sixty percent increased their BMISDS and 43% increased their HtSDS at the end of 1 year. Linear regression showed a significant correlation between BMISDS and HtSDS supporting the notion that proper nutrition and maintaining normal BMISDS is essential for adequate gain in height.

Conclusion: It appears that BMISDS is clinically useful parameter in anthropometric assessment to detect the effect of abnormal weight gain on linear growth and monitor nutritional management. Inadequate compliance with nutrition regulations and/or supplement intake can explain the failure to achieve the proper weight gain in the other half of those children. More intensive interference including hospital admission and/or tube feeding may be required in resistance cases.
EFFECT OF GLUTEN FREE DIET ON LINEAR GROWTH OF CHILDREN WITH CELIAC DISEASE.

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Introduction: Celiac disease (CD) is a lifelong disorder with gluten-induced manifestations in different organs especially growth. Gluten free diet (GFD) is required to achieve remission and prevent abnormal growth. Study reports on growth of children with celiac disease are not consistent.

Objective: We evaluated the effect of GFD on growth of children with the classical form of Celiac disease (diagnosed by serology and small intestine mucosal biopsy). In addition, we followed up some nutrition-related lab parameters.

Methods: We studied growth parameters and lab data retrospectively for 30 children aged 8.5 years +/- 4 years Age which was diagnosed: 3.4 years +/- 2.6 years for duration of 1 year. Growth parameters included measuring height/length, weight, BMI and height h standard deviation score (HtSDS). Lab investigations included measurement of liver function test, ferritin, albumin, Hemoglobin, 25-hydroxy vitamin D.

Results: BMI standard deviation was normal in 26/30 patients (> -2). 3/30 children had BMISDS < -1.5 and only one child had BMISDS < -2. BMI SD changed from -0.75 +/- 0.9 to -0.5 +/- 1.12 during the year of treatment. 66 % of patients had improved in their BMI SD during the year of treatment HTSD were normal in 27/30 patients. 3/30 children still had HtSDS <-2. HTSDS remained normal during the year of treatment (-0.92 +/- 1.21 to -0.94 +/- 1.43). Only one patient crossed down centiles during the year of follow up. At the end of the year of follow up all patients had normal serum albumin, liver enzyme and hemoglobin levels. 37.5 % of patients had low Ferritin level and 36% Had Vitamin D deficiency.

Discussion: The majority of our children with CD grows normally both in height and weight on GFD. All had normal hemoglobin and albumin level. Those with low BMISDS and/or HtSDS (about 5%) need further management including reinforcement on maintaining GFD and investigating other factors that might affect growth pattern

Conclusion: GFD applied for one year has maintained normal growth rate and nutritional status in > 90 % of children with CD. Vitamin D and iron status should be monitored and deficiencies corrected.
IRON DEFICIENCY ANEMIA IN WEALTHY KUWAIT

Author: Eman Wetwet
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Anemia caused by a low iron level is the most common form of anemia. The body gets iron through certain foods. It also reuses iron from old red blood cells.

A diet that does not have enough iron is the most common cause of this type of anemia in children. More iron is needed When a child is growing rapidly, such as during puberty.

Toddlers who drink too much cow’s milk may also become anemic if they are not eating other healthy foods that have iron.

Other causes may be: The body is not able to absorb iron well, even though the child is eating enough iron and slow blood loss over a long period, often due to menstrual periods or bleeding in the digestive tract.

The aim of this retrospective study is to assess the prevalence of iron deficiency anemia in wealthy country like Kuwait and whether measuring iron parameters with check up blood in children with poor diet is worth doing for early recognition, treatment and concomitantly preventing disease progression.

A total of 519 pediatric patients whose iron study has been done in the lab of New Mowasat Hospital in Kuwait over 6 months from Jan-July /2016 were recruited in this study, 264 boys and 255 girls, age range between few months-15 yrs. Lab results were considered normal or abnormal according to the hospital lab standard levels

Results: Most of these studied patients were iron deficient; there is no much difference in number of male and female patients. Ages equal and below 5 yrs are the most affected group. Most of these patients with iron deficiency were treated and followed up

Conclusion: Measuring iron parameters with check up blood in children with poor diet is worth doing, this leads to early treatment and concomitantly preventing disease progression, also to check iron level in any patients with signs and symptoms of anaemia and malnutrition. To educate and advise parents about healthy diet and to avoid junk and fast food. To consider repeating this study in 2 yrs time to assess the value of early checking and treating iron deficiency anaemia
AWARENESS OF PARENTS IN ASEER REGION OF SAUDI ARABIA REGARDING ROAD SAFETY IN CHILDREN

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Background: Every day a child is prematurely lost on the roads of this world. Many more are injured, often severely. These traumatic events cause immeasurable suffering and grief. Young children have a limited capacity to evaluate risk. Parents can play an important role in helping the children to interpret what is happening around them. Certain practices related to safety on road for children were observed and this initiated the desire to help ignite a spark which may have long term results towards safety of children on roads, in the region.

Objectives: To assess the knowledge, attitude and practices of parents towards road safety of children inside the car and 2. To assess if there is need for community awareness programme about Road Safety of children.

Materials and Methods: This is a cross sectional study of parents in Abha, Khamis Mushait and Bishah of Aseer region in Saudi Arabia. A target sample size is 500 based on the population of the region. The questionnaire is being done by interview with the parents in a random way. The data is coded and entered, then analyzed through SPSS program.

Results: There is cooperation by parents especially when the issue of children safety is introduced to them. The major issues related to safety inside a static or moving car are: 1. Children left unattended and unrestrained inside the car while the parent is doing something outside the car. 2. Children not properly restrained while the car is moving and 3. Children putting out a body part in a moving car. A significant number of parents treat these three issues casually and do not think that these are potentially harmful. Statistics are being compiled and will be presented. A preliminary evaluation reveals the need to take steps towards community awareness. The response and outcome towards this will be presented.

Conclusion: A significant number of parents in the Aseer region are not aware of the potential dangers to children of unsafe practices in static or moving cars. There is a potential need to launch a community awareness program.
PEDiATRIC Sepsis PRogram AMONg CHildren hospiTals IN the STate of qATar: THINK SEPSIS, SAVE LIVES

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Hamad Medical Corporation, Sidra Medicine-Qatar, Weill Cornell Medical College-Qatar

Description
Missing signs of early sepsis in children can result in delayed management, complications, and death. Standardized pediatric sepsis protocol based on electronic early warning system can guarantee early recognition of sepsis, timely management, and proper escalation. Improve communication, create a culture of “think sepsis” and ultimately improve patient outcomes.

The Case to Change
Delayed recognition & treatment initiation were identified as a common challenge in the timely management of children with suspected sepsis. Sharing our national effort in fighting sepsis in all children hospitals in Qatar (17 pediatric Hamad Medical Corporation [HMC] hospitals & Sidra medicine).

Aim
Early sepsis recognition & timely management through 95% compliance with sepsis 6 bundle in children hospitals by end 2019.

Action Taken
Pediatric sepsis (PS) committee established in 2017 & national Pediatric sepsis program was developed. Sepsis simulation sessions undertaken for TIm units knowledge gaps.

PDS01: Sepsis watchers concept introduced to daily safety bundle
PDS02: Provide standardized PS diagnostic kit
PDS03: Uniform PS Antibiotics kits created in all units with safe first dose preparation protocol
PDS04: E-learning module & education materials

Results
1. Well-established electronic pediatric sepsis golden-hour order set (88% initiated order set in HMC-PCIU).
2. 100% reliable vital signs documentation at HMC-PEC.
3. 100% compliance with sepsis bundle in Sidra-ED
4. IV antibiotics administered within 60 minutes of time zero: 58% in HMC-PCIU, 50% in HMC-medical & 100% in HMC-PEC & Sidra-ED

Next steps
1. The multidisciplinary pediatric sepsis team meets on regular basis to follow the implementation process in all hospitals and evaluate the performance every three months
2. To continue staff education & reminders
3. Data collection by well-trained sepsis champions
A TWO-GENERATION (2GEN) APPROACH TO IMPROVING CHILDREN’S PHYSICAL AND EMOTIONAL HEALTH: THE PEDIATRIC AND PSYCHIATRIC STANDPOINTS.

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Introduction: Prior to 1961, ‘‘health” was defined simply as the absence of disease. Dunn challenged this definition by asserting that health encompasses physical, mental, and social wellbeing, and in doing so, introduced the concept of wellness. The basis of this concept resides in the consideration that wellness is a way of life intended to attain optimal health and wellbeing of the body, mind, and spirit.

The disadvantages confronted by many families, challenge their opportunities to provide the resources/support their children need to develop at their maximum potential. Even those that do not confront disparities, lack of their ability to provide their families with wellness. Mental health services, including prevention, detection, referral, and treatment, are often described as inadequate among families that do not attain optimal health and wellbeing of the body, mind, and spirit. As a result, early detection of emotional and behavioral problems may be impeded due to reduced opportunity to access early intervention efforts.

One promising strategy for intervening to improving children’s health is the Two-Generation approach proposed by the ASPEN Institute (2011), which focused on addressing the needs for both children and the adults in their lives. Emerging data using this approach suggests that the two-generation approach is particularly effective for families with lower socio-economic status.

Objective: To present different strategies used in schools, pediatric clinics and hospitals, as well as psychiatric clinics to improve children’s emotional and physical health by addressing the wellness of the parents.

Materials and Methods: Four studies will be presented including a wellness model used in schools, pediatric clinics and hospitals, as well as psychiatric clinics that teach parents learning/remembering how to increase their family well-being, resilience, use of positive coping mechanisms instead of negative ones, and how to support the emotional needs of their children. This model prioritizes wellness as a way of life to attain optimal health and wellbeing of the body, mind, and spirit. Measurements used include standardized measures from the BRIEF COPE for coping mechanisms, the Brief Resilience Scale (BRS) to measure resilience, and the World Health Organization Quality of Life (WHOQOL)-BREF to assess quality of life.

Results: Studies indicate an improvement in parent’s well-being, resilience, use of positive coping mechanisms instead of negative ones, and how to support the emotional needs of their children.

Conclusions: A 2GEN approach to improve both physical and emotional health might be necessary to provide children with most opportunities.
BECKWITH -WEIDERMANN SYNDROME: A CASE REPORT

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Background: BWS is a disorder of somatic overgrowth which predispose to embryonal tumors. It is caused by various epigenetic and/or genetic alterations that dysregulate the imprinted genes on chromosome 11p15.5. The incidence is 1:13700. Classical presentation is with the triad of abdominal wall defects, gigantism, and macroglossia.

Observation: A newborn baby had a protruded tongue along with bilateral undescended testicles on his first post natal examination. There was a background history of increased growth velocity of the anterior circumference antenatally. He was referred to the surgical team for his undescended testicles. He was noted to have high and tethered testicles in the hyperplastic scrotum with absence of inguinal hernias at seven weeks by surgical team, further review at six months showed one of the testicles was self-corrected. His other testicle required an operative management. He was referred to the paediatric Clinic. His height, weight and head circumference were above 99.5 centile with normal development. His differential diagnosis was hypothyroidism, BWS or trisomy 21. Thyroid function test and karyotyping were unremarkable. Therefore diagnosis of BWS was made clinically which was subsequently confirmed on molecular testing; Methylation specific-MLPA analysis on the two imprinted regions (H19 and KvDMR) on chromosome 11p15 showed hypomethylation of KvDMR. His abdominal scan showed a heterogenous solid mass in the right lobe of the liver suspicious of a liver tumour, the alpha-fetoprotein level showed a rapid rise over a period of six months.Since the risk of Wilms tumor is not increased with hypomethylation of KvDMR, Wilms' Tumor surveillance was not considered. However, his kidney scan was normal.

Key Message: Our patient posed a diagnostic dilemma especially that classic triad was not present. There should be a low index of suspicion for BWS as affected children are at an increased risk of childhood cancer and should be followed up strictly for cancer screening. An abdominal ultrasound every 3 months until eight years of age and an alpha-fetoprotein levels every 6 weeks until 4 years of age is recommended.

Key word: Beckwith- Weidermann Syndrome (BWS)
MITOCHONDRIAL DISEASE PRESENTED AS RENAL TUBULAR ACIDOSIS TYPE 1 AND FOCAL MYOCLONIC SEIZURE

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Background: Mitochondrial disease (MD) is a rare disease with prevalence 1 in 5000 across all ages. The phenotype of symptoms is complex and unique one to another. Disease may be presented in early life i.e neonatal with seizure, cardiomyopathy or lactic acidosis to adult with sudden vision loss with retinal degeneration. Mitochondrion is unique organelle which has two coded DNA, nuclear and mitochondrion respectively. There are 4 groups of nuclear DNA mutation, such as genes encoding for structural components and assembly factors of the respiratory chain; genes responsible for the mitochondrial DNA(mtDNA) stability; and genes involved in the biogenesis of mitochondria. However there are 5 mitochondrial membrane complexes whom are often affected in mitochondrial DNA mutation. Eighty percent of MD in children due to mutation to its nuclear DNA(nDNA). Nuclear MD has worse prognosis than the its mtDNA counterpart.

Observation: The symptom of MD appeared as early as 25 weeks old fetus with congenital hydronephrosis. Patient was born with normal birth weight (2630 g) by spontaneous delivery. He suffered from recurrent urinary tract infection since VCUG was performed. Ureter reflux, neurogenic bladder, renal tubular acidosis (RTA) type I and anemia by the age of 3 months were the constitutional entities of chronic kidney disease. Urine examination supports diagnosis of type I RTA with high tubule ammonium and normal trans tubular potassium level. Unprovoked focal myoclonic seizure occurred at 3 months old. Seizure was progressive and intractable, causing encephalopathy and growth delay. Electroencephalograph found out the epileptiform discharge from left temporal lobe with right diffuse slow-frequency wave from the opposite lobe. Magnetic resonance spectroscopy (MRS) showed the increase of myoinositol and tissue lactate/creatine ratio of 0.25 which support the diagnosis of MD. Mitochondrial membrane complex protein examination at Taiwan university hospital reveal the absent of complex I in patient mitochondrial membrane. He was treated with atypical antiepileptic drug, carnitine and co-enzyme Q10. By far the seizure frequency has been reduced.

Key message: It is very important as a clinician to acknowledge the mind bamboozling symptom of MD that is often lead us to unresolved case. Considering early life severe symptom with more than 3 organs involvement, same pattern of disease within family and progressivity of the disease lead us to suspicion of MD. Parents counseling and examination are very essential to help them planning the next off spring. Homoplasmic parent tend to have higher chance to have another child with MD.
MAPLE SYRUP URINE DISEASE: A CASE REPORT WITH A PEDIGREE

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Background: Maple syrup urine disease (MSUD) is an aminoacidopathy due to an enzyme defect in the catabolic pathway of the branched-chain amino acids leucine, isoleucine, and valine. This disease affects an estimated 1 in 185,000 infants worldwide but may be as frequent as 1 in 380 newborns in isolated communities.

Observation: A nine-day-old Romani female infant was admitted at the hospital because of poor feeding, prostration and lethargy with 1 day duration. The parents were relatives and had history of neonatal deaths in the family. Pregnancy, labor and delivery had been normal and full term. Physical examination revealed a hypotonic, jaundiced infant with a tense, but not bulging anterior fontanel. Routine laboratory investigations were normal except glucose that was low. Urine test strips showed ketonuria and was noted a maple syrup smelling urine. The newborn was transferred to an intensive care unit (ICU) in a tertiary referral hospital. MSUD diagnosis was confirmed, with the analysis of plasma amino acids showing marked elevations of leucine (2300 umol/L). She stayed at hospital 37 days until clinical stability was achieved.

Key messages: The high consanguinity rates, coupled by the large family size in some communities, could induce the expression of autosomal recessive diseases. Therefore preconception genetic counselling is very important, raising the public’s awareness of genetic diseases in general and their prevention possibilities. This case was probably the fifth case for classic MSUD in this Romani family. Infants with the classic form of MSUD are asymptomatic at birth with symptom appearing with 3-5 days when rising blood and tissue levels of leucine and 2-keto isocaproic acid initiate neurotoxic effects. The disease is often fatal without appropriate dietary therapy what makes accurate diagnosis and early initiation of treatment mandatory. The long term prognosis of affected children remains unknown, and death may occur during any stressful event.

Keywords: Maple syrup urine disease, newborn, consanguinity
NUTCRACKER SYNDROME AS CAUSE OF HAEMATURIA: A CASE REPORT

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Background: Haematuria is one of the most common symptoms, and it can vary as an incidental finding to a significant symptom that requires immediate treatment. Nutcracker Syndrome (NCS) is a rare vascular disease caused by the compression of the left renal vein between the abdominal aorta and the superior mesenteric artery. The compression impairs blood flow through the left renal vein and creates a higher venous pressure gradient, manifested by haematuria, orthostatic proteinuria, flank and pelvic pain, and gonadal varices, reflecting renal and pelvic congestion. Management of NCS depends on the clinical presentation, patient’s age and stage of the syndrome.

Observation: A 12-year-old girl was admitted to our hospital with macroscopic haematuria started 12 hours before. She denied fever, trauma or other urinary symptoms. Refer an auto-limited episode, one week before, with fever and odynophagia that was treated with paracetamol for three days. She had no relevant family or past history. Her physical examination was normal. She weighed 46 kg, without loss or gain, the blood pressure was 112/62 mmHg, and there was no oedema. Urine stick showed proteinuria and haematuria; urinalysis had protein of 76 mg/dl, leucocytes of 88/uL, erythrocytes of 260/uL and the sediment revealed 67/uL red cells, without pathologic cylinders. The Protein/Creatinine Ratio was 601.3 mg/g. Urine culture was negative. Blood tests showed a normal hemogram, renal function and immunologic study. Prothrombin time, partial thromboplastin time, and bleeding time were also normal. Renal ultrasonography revealed normal renal size and outline with no anatomical defect. Since intermittent gross haematuria persisted and urinary or renal pathologies were excluded, it was done a Doppler ultrasonography (DUS) that revealed “reduction of the aortomesenteric angle (19º), which causes segmental reduction of the calibre of the left renal vein segment (1.4mm in diameter), with velocity elevation and turbulence, as well as vein dilation upstream (9.5mm)”, compatible with Nutcracker Syndrome. We decided by conservative management, with regular paediatric consults. In the last consult, she maintained microscopic haematuria, without proteinuria.

Key message: Haematuria can be associated with various diseases, but when urinary and renal diseases are excluded, we have to think in vascular pathology. NCS represents a diagnosis of exclusion and several imaging methods can be used. DUS is recommended as a first-line study. Probably NCS is not such a rare disorder, but an underestimated entity. So we pretend with this case, to remind and raise awareness for this disease.

Key Words: Haematuria, Nutcracker Syndrome
LOW LEVEL OF VITAMIN D IN CHILDREN INCREASES THE RISK OF LOW ENERGY FRACTURES – A SINGLE CENTER STUDY.

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Introduction: The physiological process by which vitamin D regulates calcium and phosphorus metabolism, the major mineral constituents of bone tissue, is by far very well understood. However, the clinical implementation of vitamin D deficiency on bone fragility in childhood remains controversial.

Objective: The aim of this case-control study is to investigate the prevalence of vitamin D deficiency among Lebanese children who experienced a “low-energy” fracture in our center.

Materials and Methods: A total of 37 cases and 70 control patients were included in this study. All healthy children admitted to the emergency department between 1 and 15 years of age were potential candidate for this study. Fracture was confirmed by conventional X-ray radiography and 25-HydroxyVitamin D level of the same candidates was measured.

Results: A total of 19 patients out of the 37 cases were suffering from vitamin D deficiency (25-hydroxyVitamin D < 20 ng/ml), whereas only 13 out of the 70 control candidates were found to have deficiency in vitamin D. A statistically significant relationship between D hypovitaminosis and low energy fractures has been noticed among children between 1 and 15 years of age who presented to the emergency department of Notre-Dame des Secours University medical Center (OR: 4.63; 95% CI: 1.92 – 11.18; X²: 12.41, P-value: 0.000428).

Conclusion: A relation has been established between vitamin D deficiency and low energy fractures in Lebanese children. However, the reasons behind D hypovitaminosis, despite sufficient amount of sun light exposure, in Lebanese pediatric population are still to be considered. Furthermore, a larger sample and multicenter study will be needed to determine if a relationship exists between the severity of vitamin D deficiency and the frequency of fractures and their complications.

Key Words: Vitamin D, Low energy fracture, Children
FIBRODISPLASIA OSSIFICANS PROGRESSIVA: LARGE SERIES EXPERIENCE OF THE SINGLE CENTER

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Introduction: Fibrodisplasia ossificans progressiva (FOP) – extremely rare and disabling disease with a prevalence of 1:2000000, caused by mutation in the gene ACVR1 encoding a bone morphogenetic protein (BMP) type I receptor and characterized by uncontrolled osteogenesis and an heterotopic bone formation. Incorrect interpretation of the first manifestation of FOP leads to surgical interference which induce to appearance of multiple ossificates and significant impairment.

Objective: to analyze the experience of monitoring the large group patients with FOP, the manifestation and features of the disease.

Materials and Methods: 26 patients (13 boys and girls respectively) with the firm diagnosis FOP were observed in our center. 23 patients had molecular genetic determination with typical mutations.

Results: most patients had typical phenotypic signs of FOP such as toes’ clinodactyly (96%), cervical spine abnormalities (81%), peripheral osteochondromas (58%), fingers malformation (19%) before the first episode of FOP nodes and following ossificates developing. 35% children had manifestation before 1 y.o. (boys especially), in 54% cases - between 1 to 9 y.o. Soft tissues traumas, biopsy of the tumor-like swellings, surgical procedures, intramuscular injections including vaccination, intensive course of physiotherapy provoke new FOP nodes and massive heterotopic ossificates, which developed in 85% of patients. The improvement of the FOP nodes achieved by prolonged course of NSAIDs and administration of prednisolone course. 8 patients were treated by bisphosphonate, pamidronate mostly with positive effect.

Conclusion: Late diagnostics and incorrect follow-up of patient leads to nonreversible conditions. Awareness of pediatricians about clinical features of FOP, such as toes’ clinodactyly, could early diagnose the disease and avoid the severe unfavorable outcome.
ALLERGIC RHINITIS, BRONCHIAL ASTHMA, ATOPIC DERMATITIS IN CHILDREN’S POPULATION.

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Goal: Goal of our work included study of prevalence of allergic diseases and risk factors in the children’s populations of Georgia (2017-2018).

Materials and methods. Studied group included 899 children from 1- to 14 (girls – 51.8%; boys – 48.2%). At the first stage of epidemiological study the large-scale work was performed, including screening of 1899 children through questionnaire. Key data of the screening questionnaire were directed towards initial diagnostics of allergic diseases. On the second stage of epidemiological studies part of the patients with allergic diseases (315 children) were subjected to clinical-allergological study. At the same stage external respiratory function was studied, general IgE level in the blood and prick-testing was conducted, study of external respiration function. At the last stage of epidemiological and clinical-laboratory study mathematical-statistical data processing was provided by means of software SPSS/V12.

Results: Screening showed general characteristics of the studied population. In the population number of girls exceeded the one of boys (p<0.001), especially within the age group from 7 to 14 years. According to the results of questioning, for 12 months, symptoms of allergic rhinitis (rhinorrhea, sneezing, nose itch, nasal obstruction and eyes’ itch) were identified in 16.7 of population (p<0.05); symptoms of bronchial asthma (wheezing (9%), coughing episodes at night (5,7%), intolerance to physical load (3.9%), indoor and outdoor episodes (11.2%), episodes of coughing and rates in response to stimulus (7.2%)) were identified in 9.8% of the population; atopic dermatitis (dermatitis, itch, revelation in early age, involvement of large areas in early age, damage of extremities bending and stretching surfaces in adults) – 4.9% (p<0.01); food allergy – 9.7% (p<0.001) etc.

At the second stage of clinical studies, on the basis of prick-testing, average IgE, in our case, was 1-4 times greater than normal level. Results of study of allergens showed sensibilization to domestic dust (D.F. and D.P.) (75, 04%) (p<0.05). In 24.96% of cases there was stated sensibilization conditioned by cat and dog epidermal allergens

Conclusion: In development of allergic diseases share of controllable risk factors is quite high and this could provide basis for development of targeted and effective prevention measures in children’s population.
EPIDEMIOLOGY OF ALLERGIC RHINITIS IN POPULATION OF SCHOOL AGE CHILDREN REGION OF ADJARA


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Background: Allergic rhinitis comprise the global problem of public health care all over the world. In general structure of allergies’ morbidity share of allergic rhinitis is quite high. Its prevalence in children’s population varies within 15–25% (ARIA). Symptoms of AR can potentially impair patients’ ability to sleep and perform optimally in their daily professional or personal life. Children’s education is also particularly affected. All the above determined the goal of our work.

Goal: The purpose of this study was to assess the prevalence of AR in the school children population in Ajara, with emphasis on descriptive parameters in 6 distinct geographical regions.

Materials and methods: For the first stage of study we developed the questionnaire. Studied population included 738 children. Screening was conducted by means of the initial questionnaire oriented towards first diagnostics of allergic rhinitis. Second stage included clinical-allergic study: prick-test in vivo (included food, plants, epidermal and domestic allergens).

Results: On the basis of self-reporting, 21.8% (161 person) of the study population was considered to have AR. From symptoms of allergic rhinitis 57.7% of the studied population had sneezing, 31.6% - rhinorrhea, 49% – nasal obstruction, 36% – nasal itch and the mentioned symptoms (respondents could choose more than one answer). Respondents with AR symptoms (97 person - 60%) indicated seasonal nature of the disease. At the second stage, in the results of in vivo study of the allergens there prevailed sensitization caused by domestic dust - 65.2% of cases and in 25% of cases it was caused by epidermal allergens of the cats and dogs and in 9.8% - plant allergens (there were used prick-tests).

Conclusion: Epidemiological study of allergic rhinitis in children’s population of Batumi, Adjara, showed that AR prevalence was 21.8%. Prevalence of symptoms was reliably higher in the urban areas, than rural.
CHARACTERISTICS OF PHYSICAL DEVELOPMENT AND PSYCHOLOGICAL ADAPTATION IN THE POPULATION OF THE ELEMENTARY SCHOOL AGE CHILDREN

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Health care of the children and adolescents is one of the most significant social objectives for the society as they comprise the reproductive and intellectual and social reserves for the state. In the recent years the situation with respect to the school age children’s health is quite unfavorable. One of the objective integral health indicators of children’s population is physical development. Effective functioning of the child’s organism systems and organs determines not only the degree of physical development but also the adaptation ability of the child’s organism. The process of passing from the family environment to the education institution, i.e. to the qualitatively different one poses quite severe requirements to a child, including aggregate of mental, emotional and physical loads. Numerous researches showed that the socioeconomic condition in the country, specific nature of demographic processes, general education level of the parents, biogenetic factors, climatic conditions, day regimen, dietary habits impacts the adolescents’ health. Internal school risk factors, high workload, inadequacy of teaching methods with the students’ capacities, non-compliance with the physiological and hygienic requirements to the education process are of no less significance. In many regions of Georgia and in Adjara among them, there were observed the trends of health impairment of the school children and adolescents.

Key Words: Physical Development, Psychological Adaptation, Health, Organism systems, Organs determines.
AN ENVIRONMENTAL NEEDS ANALYSIS FOR PAEDIATRIC TO ADULT SERVICES' TRANSITIONS

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Background: The cystic fibrosis is a serious autosomal recessive disease. It is a generalized exocrinopathy affecting the serous glands and mucin secretory glands. It begins early in childhood. The clinical features are dominated by respiratory and digestive disorders.

Aims: to describe the lung disease during cystic fibrosis. To study the methods of management and the therapeutic difficulties encountered in our country.

Methods: Our study was retrospective and descriptive. Thirty patients were enrolled. All of them were hospitalized and followed for cystic fibrosis in the B-Department of children's hospital Béchir Hamza of Tunis over a period of 20 years.

Results: The mean age at inclusion was 66.5 months with extremes ranging from 3 months to 20 years. A female predominance was found with a sex ratio of 0.66. The mean follow-up of our patients was 61.2 months with extremes ranging from 15 days to 20 years. Fifteen patients have been expired in a context of a severe respiratory distress. The primary infection with pyocyanic was objectified in 22 cases at an average age of 41.5 months. the transition to chronicity was observed in 16 cases at an average age of 5 years and 4 months. Sixteen patients were put under periodic antibiotic therapy every 3 to 4 months. The respiratory function's evolution was unfavorable with a chronic respiratory insufficiency in eight cases requiring a long-term oxygenation at home. Fifteen patients developed bronchial dilatation diagnosed by a chest CT. Episodes of hemoptysis have been registred in five cases.

Conclusions: At the end of our results, lung disease is very early in cystic fibrosis, with a double inflammatory and infectious component and early respiratory structural and functional repercussions. The lung disease management aims to control the obstructive, inflammatory and infectious components. In addition to non-pharmacological therapeutic measures (bronchial drainage), the therapeutic arsenal includes the use of oral, intravenous or inhaled antibiotics, bronchial mucus thinners and anti-inflammatory drugs. Despite all that we are still facing enormous difficulties in the care of children with cystic fibrosis.
CASE REPORT: TWINS WITH CONGENITAL UNILATERAL PULMONARY HYPOPLASIA

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Background: Incidence of congenital pulmonary hypoplasia may range from 9-11/1000 live births. We report a case of preterm Monochorionic Monoamniotic (MCMA) twins with unilateral lung anomalies.

Clinical scenario: A pair of MCMA female twins were diagnosed with cardio-pulmonary anomalies on the antenatal scan at 23 weeks gestation. Twin 1 had Dextrocardia and twin 2 had a Congenital Cystic Adenomatoid Malformation (CCAM) of the left lung with an altered cardiac axis. Both twins were born in satisfactory condition by a planned elective caesarean section at 32 weeks after a complete course of maternal steroids and required a short course of non-invasive ventilation. They were discharged home at 4 weeks with cardio-respiratory follow up after an uneventful neonatal course. They remain clinically well and are growing and developing age appropriately.

Investigations: Twin 1 - Chest x ray showed a significant opacification of the right hemithorax with volume loss with a right sided heart. Echocardiogram revealed dextrocardia with no structural abnormality. CT Chest demonstrated arrested development of the right lung with heart shifted to right likely due to pulmonary hypoplasia rather than dextrocardia. Twin 2 – Chest x Ray revealed complete opacification of the left hemithorax with ipsilateral mediastinal shift. Echocardiogram revealed exaggerated levocardia, absent left pulmonary artery (LPA) and left pulmonary veins (LPV). CT Chest demonstrated a significant hypoplastic left lung with absent LPA and LPV. There was no CCAM. Their abdominal ultrasound scans and microarrays were normal.

Discussion: Most cases present during the postnatal period or are incidentally diagnosed during childhood when complicated by pulmonary infections. However, the findings on the antenatal anomaly scan in this case led to an early diagnosis. Fibre-optic bronchoscopy, and magnetic resonance angiography may also be used to aid diagnosis.

Conclusion: Primary unilateral congenital hypoplasia in the absence of other anomalies is rare. Concerns of a cystic lung malformation on antenatal scan caused diagnostic confusion in this case. Regular follow up to monitor growth and complications like pulmonary hypertension is important. Palivizumab prophylaxis, pneumococcal and influenza vaccinations should be considered. Any pneumonia or aspiration to the remaining/healthy lung should be aggressively managed.

Keywords: Congenital pulmonary hypoplasia
CHARACTERISTICS OF SYMPATHOGENIC BALANCE IN THE POPULATION OF CHILDREN WITH BRONCHIAL ASTHMA

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Goal and objective: goal was quantitative evaluation of autonomous nervous system activity and reactivity in healthy children and those with light intermittent bronchial asthma. 689 children aged from 10 to 16 participated were studied. 56 children of them had bronchial asthma. Objectives included: 1 finding out of correlation between peak velocity of the forced exhalation and heartbeat variability; 2 in children with light intermittent atopic bronchial asthma, in the period between episodes, determination of the sympatho-vagal balance and spectral nature of ANS functioning in response to Valsalva’s maneuver. Data processing was provided by SPSS v12 software package.

Results. We have identified relationship between tonus of large and medium bronchi and sympatho-vagal balance in healthy children, in rest state. 34 boys and 22 girls aged from 10 to 16 participated in the study. Forced exhalation peak velocity (FEPV) and heart rhythm variability were measured. All relative HRV evaluations correlated with FEPV, correlation between FEPV and LV/HF was stronger in girls ($R^2=0.77$ in girls and 0.27 in boys). We evaluated response to Valsalva’s maneuver through acceleration (phase III), deceleration (IV), Valsalva’s amplitude. In boys FEPV reliably correlated with average R-R and VLF, unlike the girls. Statistical significance of correlation coefficient was $p<0.005$ and $p<0.001$. In children with asthma was increase of vagus tonus with age was the cause, while in healthy children it decreases. Against the asthma background ANS sympathetic and parasympathetic activity reciprocity is deviated.

Conclusion: No gender difference was found in anthropometric parameters, arterial pressure and breath frequency, heartbeat variability time and frequency characteristics. FEPV and HRV characteristics are mutually dependent. All relative evaluations of HRV correlate with FEPV. In children with asthma ANS sympathetic and parasympathetic activity reciprocity is deviated due to HRV high frequency component. This can be seen from simultaneously hyper-vagus and hyper-sympathetic transformation of Valsalva’s response.
"ATOPIC DERMATITIS" – GEORGIA

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The study aimed to investigate the epidemiological peculiarities of AD in children and adolescents in Georgia.

Materials and methods: active detection of AD symptoms or the rate of incidence has been provided through one-moment epidemiological study. A specialized questionnaire was developed; AD diagnostic criteria were approved according to international questionnaire ISAAC, taking into account the LORIA classification. The representative target group was selected. The clinic-allergological study was conducted in the group (1298 patients) with AD symptoms for the last 24 months. Skin allergic tests were conducted with the standard ALK scherax kit. It included food, herbal (drug allergies) epidermal and everyday life allergens. In some patients IgE level was detected by immunofermentic test. AD epidemiological study in Kutaisi, Tbilisi and Batumi children’s population was conducted according to the principles of clinical epidemiology based on: scanning results (408) of representative/target group of children population (2699 children); results of clinico-allergological study; study results were analyzed by SPSS/v12 software packages. Critical value of reliability was taken as p<0.05.

Results and analysis: The patients were divided into 3 age groups: group I - 3 months - 3 years, group II - 3 - 9 years and group III – 9 - 15 years. According to the questionnaire-survey, during 24 months the episodes of recurrent itching was revealed in 12.9% of the surveyed, 39.7% of which were children of group II, 11.6% - group I and 48.7% - group III, respectively. Insomnia was observed in 5.8% of surveyed population, excitability - in 2.5% of group I, and purulent rash of papularvesicular type in 23.6% of the surveyed population, respectively, mainly in 15.7% of group II. Vascular edema was found in 5.7% of cases in all groups. The redness was fixed in 12.8% of cases, mainly in group I (56.7%). The infectious purulent rash was found in 3.9% of the population. In 5.8% of cases, these symptoms were accompanied with various skin inflammatory diseases in 9.8% of the children population. AD symptoms rate was relatively higher among the boys (p<0.05).

Conclusion: AD diagnostics in children population was based on the clinical criteria. Actually, there is no laboratory test that will independently determine the presence of AD. Approximately 79% of patients have high blood serum IgE levels and peripheral blood eosinophilia (P <0.05).
MYCOPLASMA PNEUMONIAE INDUCED STEVENS JOHNSON SYNDROME: RARE OCCURRENCE IN A PEDIATRIC PATIENT.

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Background: Stevens - Johnson syndrome (SJS) is an uncommon dermatological emergency. Most common etiology is usually infective in origin. The recognition and effective management of the disorder is vital for timely recovery and for prevention of subsequent complications. Mycoplasma pneumonia is a very common cause of community-acquired pneumonia in the pediatric population. This case report is based on a 6 year old Indian boy who presented with severe mucositis with minimal vesicular rash secondary to mycoplasma infection. Mycoplasma infection rarely leads to SJS and is not one of the common etiologies for SJS.

Observation: The manifestations of SJS is different when the underlying etiology is due to mycoplasma infection as the skin manifestations are known to be minimal with more prominent mucositis compared to typical SJS cases.

Key message: It is important to consider rarer causes of SJS when the skin rashes are not extensive or targetoid-appearing but there is significant mucosal involvement. Mycoplasma is a treatable infection and thus the timely intervention with appropriate anti-microbials is vital. There is significant overlap between the features of atypical SJS and mycoplasma pneumonia-associated mucositis but the treatment goals are similar which is supportive treatment with nutrition, fluids, adequate analgesia with treatment of the underlying etiology.
INCIDENCE OF TYPE 1 DIABETES IN CHILDREN AGED UNDER 15 YEAR OLD DURING 2015-2018 IN TLEMCEIN, WEST ALGERIA

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Background: The incidence of type 1 diabetes in children is highly variable across countries, there is a geographic disparity in the epidemiological trends of childhood diabetes worldwide. In Algeria, there is no national registry of childhood Type 1 Diabetes Mellitus. According to the estimates of the International Diabetes Federation 2017, Algeria ranks 6\textsuperscript{th} among countries where the prevalence of type 1 diabetes is highest with 42500 children and adolescents with type 1 diabetes.

Objective: this study aims to determine the incidence of type 1 diabetes in children under the age of 15 year old, living in the department of Tlemcen in western Algeria between January 2015 and December 2018.

Methods: This was a retrospective analysis of archival data of children under 15 years old newly diagnosed with type 1 diabetes (T1D) in the university hospital and public hospitals in Tlemcen. Data are from January 2015 to December 2018. Total average incidences, by sex and by onset age group (0-4, 5-9 and 10-14 and 15-17) were calculated per 100000 and per years. Estimates of the infant population of Tlemcen department were derived from the data of the national statistics office.

Results: During these 4 years, 437 new cases of T1D were registered. Of these, 233 boys and 204 girls, with a sex ratio of 1.14. The average annual incidence rate of childhood Type 1 diabetes for 2015 to 2018 was 38.5/100000 persons under 15 year old confidence interval (CI) (95\% CI, 37.37–39.62) (boys: 40.5, 95\% CI, 37.46–43.53; girls: 36.5, 95\% CI, 31.19–41.8), without significant differences between male and female (p>0.05). The incidence rates in 2015, 2016, 2017 and 2018 were (36.6, 38.7, 39.3 and 39.5)/100000 respectively. The mean incidence for the 0-4, 5-9 and 10-14 onset age groups was 30.79, 46.47 and 39.88/100.000 respectively.

Conclusion: The incidence of T1D in Tlemcen in western Algeria was 38.5/100000, giving the region a very high risk. Other large-scale epidemiological studies at the national level should be conducted to define the incidence of childhood diabetes mellitus in Algeria.

Keywords: Type 1 diabetes mellitus, children, incidence, Tlemcen, west Algeria.
MORBIDITY AND MORTALITY OF CHILDREN WITH ACUTE INTOXICATION IN THE REPUBLIC OF MOLDOVA

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Introduction: The acute intoxication represents a major medical emergency in children and is a cause of infant mortality are related to the accidental ingestion of a toxic substance with potential life-threatening consequences. In Republic of Moldova 84% of intoxications involve children under 5 years of age (pre-school age), with a peak around 2 years, (1-3) 10% involve children between 5 and 9 years of age, and 6% children older than 9. The majority (80-90% of total) of these ingestions occur in the domestic environment.

Materials and methods: The data presented here are collected from records of emergency care, through National Centre of Prehospital Emergency Medicine, Chisinau, in period of 2018 year. The following parameters have been studied: distribution by age and gender, presence of the risk factors and co-morbidity, complications and mortality at the pre-hospital stage.

Results: Of the total number of intoxication cases 1677 children, opiate intoxication was 48 (2,9%), followed by pesticide intoxication – 44 (2,6%), carbon monoxide intoxication – 143 (8,6 %). Intoxication with alcohol was 170 (10,1%), drug intoxication 641(38,2%), with mushroom poisoning and other intoxications 631 (37,6 %). According to the results obtained, 87,21% of the cases were registered in children from urban areas.

Conclusions: The majority of acute poisonings in children (about 80-90%) occur when children are at home. Unfortunately, a fleeting distraction of adults can be sufficient to induce babies to explore and try out new things. The lack of preventive measures is the major risk factor for acute poisoning in children and prevention measures remain the first and most effective strategy. Strategies for the medical assistance at the stage of pre-hospital emergency assistance for patients with acute intoxications must be improved continuously, to ensure people's access to quality care.
Background: Trauma is an important problem in the Emergency Medical Assistance Service, because critical polytrauma is the third cause of death worldwide after cardiovascular disease and malignant tumors.

Objective: Determination of the structure and the share of pediatric trauma


Results: In Republic of Moldova, pre-hospital emergency care in 2016 was given to 19987 children with trauma, in 2017 to 19794 and in 2018 – to 18176. From total number of treated patients, severe trauma in 2016 represent 4,2%, in 2017 - 4% and in 2018 - 3,4%. Medium severity trauma in 2016 represent 91,8%, in 2017 – 91,6%, in 2018 - 91,4%, Minor trauma in 2016 – 4%, in 2017 – 4,4%, in 2018 – 5,2%. From total number of treated patients, Critical Polytrauma in 2016 was 0,10%, in 2017 – 0,22% and in 2018 – 0,11%. Trauma of locomotor apparatus in 2016 – 34,28%, in 2017 – 34,89%, in 2018 – 39,39%. Cranio Cerebral Trauma in 2016 was 18,89%, in 2017 – 18,82%, in 2018 – 24,54%. Spine Trauma in 2016 was 0,90%, in 2017 – 0,61%, in 2018 – 0,95%. Chest Trauma in 2016 – 1,25%, in 2017 – 1,05%, in 2018 – 1,16%. Electrocuton in 2016 – 0,05%, in 2017 – 0,08%, in 2018 – 0,09%. Frostbites in 2016 were 0,09%, in 2017 – 0,07%, in 2018 – 0,005% (only one). Burns in 2016 – 7,86%, in 2017 – 7,69%, in 2018 – 6,24%. Road Trauma in 2016 – 2,92%, in 2017 – 2,86%, in 2018 – 2,92%. Sport Trauma in 2016 represent – 5,07%, in 2017 – 4,89%, in 2018 – 6,37%.

Conclusions: The percentage of locomotor trauma increased from 34.28% in 2016, to 39.39% in 2018. Prevals Cranio Cerebral Trauma with 24.54% in 2018, compared to Spine Trauma – 0.95% in 2018. The frostbites decrease to only one case in 2018. Informing and educating the population, adopting and respecting security measures will reduce disability from trauma and death from critical polytrauma.
BASIC METABOLIC DISORDERS IN CHILDREN WITH DIABETIC NEPHROPATHY

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Introduction. The increased prevalence of Type I Diabetes (T1D) has also led to an increase in the number of macro- and microvascular complications of diabetes such as coronary heart disease, stroke, visual impairment, diabetic nephropathy (DN), and end stage renal disease (ESRD). Additionally, diabetes remains the most common reason for progressing to ESRD.

Aim: to study the levels of basic metabolic disorders in children with T1D and at diabetic nephropathy.

Material and methods: 26 children 10–16 years old with T1D and diabetic nephropathy examined. An affinity of hemoglobin to oxygen and oxidation of lipids detected using the method of spectrophotometry. The levels of cellular hypoxia marker HIF-1 measured using Western Blotting method.

Results: In the group of children with the firstly diagnosed T1D high level of dissociation of hemoglobin and oxygen as compared to control group detected. In the group of children with developed diabetic nephropathy the level of marker was considerably lower than in control group and patients with T1D. High level of intracellular hypoxia evaluated in all patients comparing with the control. HIF-1 level considerably higher in patients with nephropathy than in children with T1D. An increase of lipids oxidation coefficient depending on the level of compensation of T1D.

Discussion: We have studied the key indicators of basic metabolic and hypoxic disorders in children with T1D and patients with diabetic nephropathy. Further study of these markers and its interdependence in the network of disorders caused by the deficiency of vitamin D3 and disorders in system of apoptosis control especially in aspect of diabetic nephropathy progressing is a promising direction of prophylaxis schemes creation and diabetic nephropathy treatment.

Keywords: T1D, diabetic nephropathy, metabolic disorders, hypoxia
EFFECTS OF CHILDHOOD ADVERSITY ON THE ATTENTION DEFICIT AND HYPERACTIVITY SYMPTOMS IN ADOLESCENTS

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Backgrounds: Childhood adversity (CA) can cause negative impacts on one’s health and development. However, the causative relationship is not clear between childhood adversity and adolescent attention deficit and hyperactivity disorder (ADHD) symptoms. This study aims to evaluate the impacts of childhood adversity on the subsequent ADHD symptoms.

Methods: Voluntary participants aged 15-22 years were recruited from primary care settings, communities, and schools. CA was assessed using the international questionnaire of adverse childhood experiences. CA could be further divided into family calamities and childhood maltreatment. ADHD symptoms were assessed using the Adult Self-Report Scale for ADHD, six-item version (ARSR-6). We evaluate the association between CA and ADHD symptoms using univariate and multivariate linear regression analysis.

Results: A total of 492 (51% males) subjects were recruited. Adjusting for age and gender, we found that childhood maltreatment was significantly associated with inattention ($\beta=0.38$ [95% confidence interval 0.1-0.67]), hyperactivity (0.25 [0.07-0.43]), and impulsiveness (1.02 [0.21-1.83]). But there was no association between family calamities and ADHD symptoms

Conclusion: Child adverse experience, particular maltreatment, may be associated with adolescent ADHD symptoms. Ways to prevent adverse consequences may be needed for those with childhood maltreatment experiences.
THE STATE OF HEALTH OF SCHOOLCHILDREN IS WITH OVERWEIGHT FROM DATA OF PROPHYLACTIC REVIEWS

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Introduction: Over the past decades, the problem of overweight and obesity has become global and has a scale of socially significant problem. Particular concern is the increase in the prevalence of obesity among children, which is increasing twice every three decades. Today, in developed countries 25% of teenagers have overweight, and 15% have obesity. In Ukraine, 18-20 thousand of new cases of obesity among children and adolescents are recorded annually in Ukraine. Excessive body mass, which was detected at the age of 12 years, gives reason to predict excess body weight and obesity in subsequent years.

Objective: determine the prevalence of overweight and obesity among school-age children, and analyze the risk of developing concomitant excess body weight and obesity.

Materials and methods: The study was conducted among 1103 schoolchildren aged 7-17 years, of which 552 girls (50.1%) and 551 boys (49.9%). Classification of body mass was performed according to body mass index according to the centile standards.

Results: It is set on results the estimation of index of body weight, that 23.7% children have overweight, one third from them is ill obesity. Among boys prevalence of is higher than among girls (28.2% and 19.2%, accordingly, $\chi^2 = 12.4$, $p < 0.001$). The risks of violations of the state of health are presented for children from overweight, that it is necessary to take into account at planning works and program developments from the prophylaxis of obesity at the level of establishment of health protection among child's population fastened for medical service. According to the odds ratio, the risk of development of autonomic nervous system disorders in children with overweight is 2.1 (95% CI: 0.9-4.8), dyskinesia of biliary tract - 2.5 (95% CI: 1.4-4.5), scoliosis - 1.8 (95% CI: 1.2-2.8), myopia - 2.5 (95% CI: 1.4-4.7), and in children with obesity - 8.9 (95% CI: 4.0-20.0), 4.8 (95% CI: 2.4-9.6), 2.1 (95% CI: 1.2-3.8), and 5.1 (95% CI: 2.6-10.3) respectively.

Conclusions: Early detection of overweight children, monitoring their health and introducing measures to correct behavioral risk factors for overweight is an urgent and promising direction for optimizing the non-communicable diseases prevention system.

Key words: obesity, children.
EFFICACY OF FRUCTOSE HYDROGEN BREATH TEST IN CHILDREN – A SINGLE CENTRE EXPERIENCE.

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Objectives and Study: Fructose malabsorption (FM) is a significant cause of common gastrointestinal symptoms in children. We report on a cohort of patients presenting to the paediatric outpatient clinic with suspected symptoms of FM who underwent hydrogen breath test (HBT). We evaluated the common presenting symptoms, diagnostic tests used and outcome following a low fructose diet (LFD). We looked at the sensitivity, specificity, positive and negative predictive value of the fructose HBT to diagnose FM.

Methods: Retrospective analysis of all patients referred to Queen Mary’s Hospital for Children for assessment between January 2015 and August 2018. Data was collected using patient notes and electronic patient record. Presenting symptoms were grouped into chronic abdominal pain, chronic diarrhoea, a combination of both and others. HBT were carried out using hydrogen breath desktop gastrolyzer (Bedfont Scientific) following a challenge with oral fructose solution at 2g/kg. Incomplete absorption of fructose was defined as a peak rise in breath hydrogen of > 20 ppm. LFD was advised for all patients with positive results.

Results: A total of 115 patients underwent the fructose HBT during the study period, 62 male (54%) and 53 (46%) female. Of these 71 (62%) patients had a positive test result indicating FM. The mean duration of symptoms was 19 months. Average age at presentation was 7.3 yrs (range 2.5 to 16.1 yrs). Of the 71 patients with positive results, 7 (10%) presented with abdominal pain, 28 (39%) with diarrhoea, 22 (31%) with both and 14 (20%) with other symptoms. 7 (10%) patients were lost to follow-up. Of the remaining 64 patients for whom follow up data was available, 56 (87%) patients showed improvement on a LFD. 2 patients were unable to adhere to a LFD. 6 (9%) patients had no response to LFD, of which 4 had alternative diagnoses found (e.g. coeliac disease or inflammatory bowel disease (IBD)). 14 (20%) children had undergone endoscopy before the procedure all of which were normal. 68 (96%) children had been assessed for lactose intolerance with either lactose HBT (60; 88%) or a quick mucosal lactase test (8; 12%) prior to their fructose malabsorption test, 51%(75%) of which were negative. 44 patients had a negative fructose HBT result, of which, 16 (36%) had a diagnosis of irritable bowel syndrome (IBS). 5 (11%) had lactose intolerance, 4 (9%) had gastritis and 12 (27%) had other diagnosis (e.g. IBD, pancreatic insufficiency or gluten intolerance). 7 patients were lost to follow up. The fructose HBT had a sensitivity of 93.5%, specificity of 84.6%, positive predictive value of 90.6% and negative predictive value of 89.2%. It had a Positive Likelihood Ratio of 6.08 (2.9 to 12.73) and a Negative Likelihood Ratio of 0.08 (0.03 to 0.20).

Conclusion: A considerable number of children presenting to the general paediatric outpatient clinic suffer from dysfunctional gastrointestinal problems due to FM. The fructose HBT is a simple, sensitive and non-invasive method for the diagnosis of this disorder. We have demonstrated that starting children with positive fructose HBT on a LFD will improve symptoms in the majority of the children.
ADHD, BEHAVIORAL AND HYPERKINETIC DISORDERS IN CHILDREN

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The aim of the study was assessment of risk-factors and itself behavioral disorders in children in correlation of age.

Methods: Study was conducted at Iashvili Children's Central Hospital, in frame of Children's mental health state program. We evaluated children with behavioral disorders, attention deficiency and learning disabilities and diagnosis was done by a multidisciplinary team (pediatric psychiatrist, child neurologist, pediatrician and psychologist) using different assessment tools. From March 1 to December 31, 2014y, 342 patients aged 2-18 years were evaluated. The data was statistically processed with SPSS 16 program.

Results: ADHD was diagnosed in 14,3%, speech disorders 14,6%, ASD – 12,8%, learning problems – 9%. In early childhood isolated speech disorders and ASD is relatively high, while in elder children (over 6 year) main problems are ADHD, behavioral and emotional and learning disorders. In most cases was seen isolated ADHD, in 28,3% ADHD was associated with antisocial behavior, in 4,3% with speech disorders. The ADHD is twice more frequent in boys, than in girls (p <0,05).In children under 12 ADHD is mainly associated with speech disorders, after 12 with - antisocial behavior (p <0,05). There is positive correlation with risk-factors and ADHD, learning and speech disorders.

Conclusion: According to results of our study in early aged children main problems are speech disorders, ASD, Motor delay, while in elder children behavioral and emotional disorders, ADHD and learning disorders are more frequent.
PROCALCITONIN (PCT) EARLY MARKER FOR PREVENTED SEVERE SEPSIS AND SEPTIC SHOCK IN NEWBORNS WITH RESPIRATORY DISTRESS SYNDROME

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Background: Bloodstream infections and a major cause of mortality and morbidity in newborns in the Intensive Care Unit at the University Children Hospital-Skopje

Objective: The aim of this study was to determining the correlation between PCT levels, in gram positive and gram negative bloodstream infections in newborns with respiratory distress syndrome (RDS).

Methods: In this study we include the 35 (M:F=19:16) newborns with respiratory distress syndrome, with sepsis confirmed with positive blood culture. They have been divided into two groups I group included 20 septic newborns with RDS and Gram negative bloodstream infections and II group - 15 septic newborns with Gram positive bloodstream infections. Positive blood culture were determined with the Rapid FilmArray Blood Culture Identification Panel. Results of C-reactive protein (CRP) and PCT, were recorded. Procalcitonin levels were measured by using an immunoassay system Vidas based on the Enzyme Linked Fluorescent Assay (ELFA) principles.

Results: The values of procalcitonin (PCT) were considerably increased in septic newborns with RDS specifically Gram negative bloodstream infections. The values of C-reactive protein gradually increase after 24-36 hours in both groups. An on time usage of an adequate antibiotic treatment may prevent severe sepsis and septic shock in patients with gram negative infections.

Conclusion: The value of PCT is a reliable parameter whether an appropriate antibiotic treatment is used in newborns with respiratory distress syndrome, and Gram negative bloodstream infections

Key words: procalcitonin (PCT), C-reactive protein (CRP), newborns, RDS
THE INCIDENCE AND OUTCOMES OF SUBCLINICAL CONGENITAL HYPOTHYROIDISM IN KHON KAEN, THAILAND

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Background: Diagnosis and treatment of subclinical hypothyroidism (SH) with normal freeT4 and high TSH levels is increased in infants from lower screening TSH cut-off.

Objective: Our aim was to describe the incidence and outcomes of SH at Srinagarind Hospital, Khon Kaen, Thailand.

Materials and Methods: A retrospective descriptive cross-sectional study was performed. The medical records of SH newborns followed-up at the Pediatric Endocrinology Clinic, between January 2011 and December 2017 were included. Confirmed freeT4 and TSH were performed in newborns with screening TSH >= 25 mU/L. SH was documented in newborn with normal freeT4 and confirmed TSH > 5 mU/L. Confirmed tests were also done in all newborns who had clinical manifestations of congenital hypothyroidism but screening TSH < 25 mU/L. Thyroid imaging were performed in all newborns. Low dose L-Thyroxine (L-T4) 5 mcg/kg/day was administered to all SH at age before 1 month. At 3 years, L-T4 was discontinued for 4 weeks. Transient SH was identified in newborn with normal freeT4 and TSH after L-T4 off, while permanent SH newborn had normal freeT4 and persisted TSH > 5 mU/L.

Results: Eight of 15,991 full term newborns had confirmed TSH > 5 mU/L, the incidence of SH from newborn screening was 1: 1,999. SH was identified in other 67 newborns with screening TSH < 25 mU/L. TSH range of 75 SH newborns were between 5.01-18.18 mU/L and all had eutopic thyroid gland from imaging. Fifty-three children had the age over 3 years, 22 (41.5%) children had permanent SH and 31 (58.5%) children had transient SH.

Conclusions: The incidence of SH is high, permanent SH is found in newborns who had screening TSH below the cut-off level.
EASILY MISSED COMPLICATED CONGENITAL HEART DISEASE: CASE REPORT

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Background: Congenital heart disease (CHD) is the most common congenital disorder in newborns and critical ones occurs in approximately 25 percents. Some of these newborns are not identified and diagnosed soon after birth, and some complex CHD were not diagnosed at all. The risk of morbidity and mortality increases when there is a delay in diagnosis and timely referral. We describe the case of a 2-days-old newborn with hypoplastic right ventricle (RV), double inlet left ventricle(DILV), right-transposition of great arteries (d-TGA), ventricular septal defect (VSD), patient ductus arteriosus, (PDA) and coarctatio of the aorta, who underwent a palliative surgical repair.

Observation: A female newborn delivered vaginally at term following an unremarkable pregnancy weighted 3450 gr, and Apgar score was 9. Baby appeared normal on routine examination on the day one. On the day 2, a soft systolic murmur was heard, with normal heart rhythm and palpable peripheral pulses. No visible cyanosis was detected, but in the room air oxygen saturation was 85 %. Oxygen supplementation was tried and saturation increased over 95 %. The condition was stable, but the baby was occasionally tachipnoic. Since the nursery had no ultrasonographer available, we refereed the baby to the tertiary center. Ultrasound was performed and revealed rudimentary RV, DILV, large unrestrictive VSD, (PDA), d-TGA, with aorta arose from the rudimentary RV with very narrow aortic isthmus (1.3 mm) and turbulent flow, and pulmonary artery (PA) arose from LV, slightly dilated with normal flow. Newborn was well until the day 6, when breathing difficulties and cyanosis appeared, and Prostin infusion was started. The surgery was performed on the day 14, and resection of the aorta, radically extended end to end aortoplasty, DAP ligation and banding PA were done. Mechanical ventilation was prolonged due to left sided pulmonary atelectasis, and also baby suffered from sepsis and convulsions. Postoperative cardiac catheterization revealed mild PA stenosis.

Key message: Critical CHD in our case was missed during the routine antenatal ultrasound. Presence of large VSD and PDA provided enough oxygen and rose no CHD suspicion soon after birth. Hyperoxy test was inconclusive. The diagnosis of the CHD would be easier if antenatal echocardiogram would be based on better equipment and education and also, newborn screening for critical CHD using pulse oximetry should become mandatory.

Keywords: complicated congenital heart disease
THE DIFFERENCES IN SPONTANEOUS MOTOR ACTIVITY OF NEWBORNS WITH DIFFERENT GESTATIONAL AGE AT BIRTH

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Abstract:
A premature birth brings an increased risk of developmental disorders. Newborns with low gestational age are at increased risk of non-optimal psychomotor development due to immaturity, which may result in motor discoordination attention deficit disorder, hyperactivity or learning disabilities at later age.

With the increasing number of premature births, there is an increased need for objective assessment of their motor development and neurobehavioral state. The qualitative assessment of the spontaneous motor activity in neonates and infants is performed by visual analysis during therapeutic programs or using neurodevelopmental scales assessing neuromaturation and maturation of the neonatal central nervous system. These assessments are considered as subjective because they are influenced the experiences of the therapist, who carries out examinations.

The aim of this poster is to describe findings of the pilot study focused on the assessment of the differences in spontaneous motor activity of newborns born in different gestational weeks before the scheduled delivery period via the Tekscan pressure mat.
PYELONEPHRITIS... WHAT ELSE?
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Background: Renal and perinephric abscesses are rare in pediatric age. These are most commonly caused by renal or peri-renal infections, although some have an unknown etiology. Fever, lumbar or abdominal pain are common manifestations and renal ultrasound is the gold-standard for the diagnosis. However, ultrasonography may be insufficient in distinguishing it from pyelonephritis. Usually, a detailed clinical history reveals predisposing conditions.

Observation: In the present report, we describe a case of a previously healthy teenage girl with a typical history of pyelonephritis that did not respond appropriately to antibiotics. Further investigation with computed tomography revealed a renal abscess with involvement of the perinephric area. After diagnosis was made, we reviewed her past medical history and found that she had been involved in a car accident 4 months before admission. She was successfully treated with long-term antibiotics and interestingly she did not need surgical drainage.

Key Message: This was a previously healthy girl with no congenital genitourinary malformation or genitourinary tract disease. However, the girl had suffered hip and left flank injury, about 4 months before admission. Clinical cases can sometimes be elusive and misleading…

KeyWords: pyelonephritis, abscess, accident
PRE RENAL AND RENAL ACUTE KIDNEY INJURY IN NEWBORN INFANTS

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Background: Prerenal injury is the most common type of acute kidney injury in newborn infants. It occurs in over 80% of cases, as a result of inadequate renal perfusion. Renal injury appears due to parenchymal kidney damage.

Objective: The aim of the study was to determine the demographic characteristics of prerenal and renal injury in neonates.

Materials and Methods: In this clinical, prospective study over a period of 2 years 50 newborn infants with documented acute kidney injury were evaluated. The patients were hospitalized in the intensive care unit at the Children's University Hospital. Medical data records of admitted neonates with kidney injury were analyzed. The material was statistically processed using methods of descriptive statistics.

Results: We evaluated 50 neonates with documented acute kidney injury who at the period of 2 years were treated in NICU. The incidence of kidney injury was 6.5%. Prerenal injury was observed in 39/50 newborn infants and renal injury in 11/50. The prevalence of prerenal injury was 78% and 22% of renal injury. Most of involved neonates were term and male. The most common comorbid condition in newborn infants with prerenal AKI was perinatal asphyxia observed in 41% of cases and prematurity with respiratory distress observed in 36% of infants with renal AKI. Mortality rate was 33% in prerenal AKI and it was highest in patients with perinatal asphyxia. While the mortality rate of renal AKI was 45% and it was highest in the group of infants with congenital heart anomalies.

Conclusion: Acute kidney injury is a serious condition which damages the kidney as a central mediator of the homeostasis of bodily fluids. Prerenal injury is the most common type of neonatal AKI. Timely and adequate treatment of renal hypoperfusion leads to improvement of renal function.

Key words: prerenal kidney injury, renal kidney injury, newborn infants
PHARMACOKINETICS, SAFETY AND TOLERABILITY OF ORAL FERRIC MALTOL AT THREE DOSAGE LEVELS IN CHILDREN WITH IRON DEFICIENCY

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Introduction: There is an unmet need for an alternative to intravenous iron therapy to treat iron deficiency in children, particularly those intolerant of oral ferrous iron compounds. Ferric maltol is an oral iron replacement therapy formulated to improve gastrointestinal absorption.

Objective: In this Phase I, randomised, open-label, parallel-group, multicentre study, the primary objective was assessment of population pharmacokinetics (PPK) and iron uptake of ferric maltol at three doses in children. Secondary objectives included safety and tolerability endpoints.

Materials and Methods: Children aged 10–17 years with iron deficiency (with/without anaemia, without active inflammatory bowel disease) were randomised to one of three ferric maltol doses twice daily (BID) for 9 days and one final dose on Day 10. Plasma maltol and maltol glucuronide, serum iron and transferrin saturation (TSAT) were measured.

Results: Thirty-seven children (mean age 14 years) were randomised: 12 to 7.8 mg ferric maltol, 13 to 16.6 mg and 12 to 30 mg. There were insufficient data for PPK analysis for maltol. PPK analysis for maltol glucuronide on Days 1 and 10 revealed the time to reach maximum plasma concentration (T_{max}) was similar in each dose group but maximum plasma concentrations (C_{max}) and area under the concentration curve were dose dependent. Further analysis confirmed that dose proportionality existed over the dose range tested, with the exception of the predicted C_{max} of plasma maltol glucuronide on Day 10. By contrast, changes in serum iron concentrations over the three doses were not dose dependent. There was a plateauing effect between the two higher doses on Day 1; and on Day 10, iron exposure was comparable across all doses. The predicted response–time profile for TSAT was similar to that for iron. Twenty children (54.1%) experienced a treatment-emergent adverse event (TEAE), with similar frequencies in each group. All TEAEs were mild-to-moderate. Nine children (24.3%) had a TEAE related to the study drug. The most frequent TEAEs were gastrointestinal (12 children; 32%) and nervous system disorders (9 children; 24%). One child in the 16.6 mg group discontinued the study due to a TEAE (tonsillitis; considered not related to the study drug). There were no deaths or serious TEAEs.

Conclusions: Administration of ferric maltol at 7.8 mg, 16.6 mg and 30 mg BID for 9 days and one dose on Day 10 resulted in increased iron uptake. All doses of ferric maltol were well tolerated with a favourable safety profile in this paediatric population.

KEYWORDS: Iron deficiency; anaemia; iron-replacement therapy.
CHARACTERISTICS OF SYMPATHETIC BALANCE OF HEART RHYTHM VARIABILITY IN CHILDREN’S POPULATION

Authors: Irma Ubiria, Ivane Chkhaidze, Nino Adamia, Ketevan Matiashvili, Lali Saginadze, Nona Katamadze, Natia Chkhaidze

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Introduction: in case of respiratory system diseases in children the cardiovascular system is one of the global problems. Heart rhythm frequency variability analysis allows evaluation of sympathovagal balance and this is very significant in case of respiratory diseases.

Goal and objectives: research goal is characterizing of sympathetic balance of heart rhythm variability in children’s population. Study was conducted in 2017-2018, on 2134 children aged from 7 to 16, using randomized method. Objectives included: hardware and software development for cardiointervalography studies and formation of the optimal scheme for HBV analysis; detailed analysis of heartbeat time and frequency parameters’ variability; identification of the relationship between forced exhalation peak velocity and heartbeat variability; nature of heartbeat frequency changes in response to Valsalva’s and Muler’s maneuvers in healthy children. Subjective physical (auscultation, blood pressure measurement) and instrumental (ECG, cardiointervalography, peakflowmetry) studies were conducted. Recording of heartbeat rhythm (sequence of cardiogram R-R intervals) was provided by the hardware-software complex that we have developed on the basis of ECG (IBM-286). R-R intervals were measured by recording of the moment when R wave amplitude exceeds regulated threshold by the program. ECG, threshold and air pressure graphs were permanently seen on the display.

Results: it turned out that there is only slight difference between arterial pressures, R-R intervals, breathing and heartbeat frequencies between boys and girls and it is not statistically significant and these data are within the age norm, according to HRV time parameters (average interval, standard deviation, asymmetry, excess coefficient, variation coefficient, mode, mode amplitude, strain index, EMSSD). Significant difference (p<0.05) between the boys and girls was only in mode amplitude and excess.

Correlations of demographic, anthropometric, physiological, HEV time and frequency characteristics. We have conducted testing of interrelations between the variables through calculation of Pearson’s correlation coefficients “all with all”, as number of such coefficients is high (329), we shall discuss them by groups, according to the created hypotheses. Only two groups of the variables are in correlation with the age. These are height and weight (absolutely natural) and GRV frequency components.

Conclusion: between normal values of low frequency and high frequency components of heartbeat rhythm variability there is strict inverse correlation and this illustrates reciprocity of fundamental properties of sympathetic and parasympathetic systems. This relationship depends on average pulse frequency, age, average heart interval and LF/HF. Age and height factors do not affect the correlation. Age and heartbeat frequency are independent variables for analysis of sympathovagal balance dynamics. The annual dynamics of relationship of heartbeat rhythm variability frequency characteristics and age was determined (p<0.05).
THE INFLUENCE OF ADOLESCENCE ON PSYCHOSOCIAL FUNCTIONING OF PATIENTS WITH GROWTH HORMONE DEFICIENCY

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Objective: The evaluation of influence of puberty on psychosocial functioning of patients with growth hormone deficiency.

Materials and methods: The study population consisted of 330 growth hormone deficient children and adolescents with no underlying disease, treated with growth hormone. The psychosocial functionality was assessed using the Greek version of the Quality of life in Short Stature Youth (QoLISSY) questionnaire, the Self Perception Profile (SPP) questionnaire and the Silhouette Apperception Technique (SAT) questionnaire. Patients were asked to complete the questionnaires as a routine component of their medical visit.

Results: Adolescents had lower scores on the “Coping” scale (refers to the way the child copes with negative feelings or experiences due to short stature) p=0.012 and on the “Treatment” scale (refers to the child's experiences regarding growth hormone treatment) p=0.012 of the QoLISSY questionnaire. Answers on the SAT questionnaire showed that a higher percentage of adolescents overestimate their current height as compared with younger children (76% vs 65.3% respectively) (p=0.022), whereas they estimate more accurately their final stature (9.2% vs 3.5% respectively) (p=0.040). Adolescents that overestimate their current height scored higher on “Relationships with peers” and “Self-esteem” scales of the SPP questionnaire.

Conclusions: The negative feelings of adolescents regarding short stature and growth hormone treatment may relate with the overall questioning, anger and refusal to accept the situation that characterizes puberty. A possible explanation of high overestimation rates for adolescents’ current height could be that stature is more important for children as they grow up, whereas expectations about final height are more realistic as children reach advanced puberty. The positive correlation of height overestimation with high self-esteem is an indicator that self-perception may influence psychosocial functioning.
RECURRENT SEVERE ABDOMINAL PAIN AND HEREDITARY ANGIOEDEMA

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Background: Hereditary angioedema is a very rare and potentially life-threatening genetic disease characterized by episodes of edema in various body parts including the extremities, face and airway. The disease is usually associated with attacks of abdominal pain. Hereditary angioedema can be overlooked if the main attacks involve only the gastrointestinal tract. In this report, we present two sisters with hereditary angioedema presented with severe abdominal pain attacks and edema in various body parts.

Observation: Eleven year old and 5 year old sisters were admitted to our hospital with complaints of recurrent severe abdominal pain attacks and relapsing skin swelling. It was learned that their grandfather died because of laryngeal edema and their father were followed up with a diagnosis of acute rheumatic fever due to unexplained swelling attacks at the extremities. Both of the patients had decreased serum levels of C4 and C1 esterase inhibitor and were diagnosed as hereditary angioedema type 1. C1 inhibitor concentrate was administered during attacks. They were started on tranexamic acid for long term prophylaxis but in follow up the treatment had to change with danazol due to the lack of enough response. Their recurrent attacks were controlled with danazol and on-demand therapy of plasma-derived C1-inhibitor concentrate.

Key message: This cases emphasize the importance of considering HAE in patients with recurrent abdominal pain and the importance of family history.

Keywords: Hereditary angioedema, abdominal pain, edema
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