Submitting authors are responsible for the content of the abstracts
## Table of Contents / Thematic Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent medicine</td>
<td>3</td>
</tr>
<tr>
<td>Allergy, Immunology and Rhumatology</td>
<td>43</td>
</tr>
<tr>
<td>Cardiology</td>
<td>62</td>
</tr>
<tr>
<td>Child Health and Survival: Global health</td>
<td>79</td>
</tr>
<tr>
<td>Child Public Health, Health Systems</td>
<td>144</td>
</tr>
<tr>
<td>Dermatology</td>
<td>198</td>
</tr>
<tr>
<td>Development, Neuro-developmental Disability</td>
<td>211</td>
</tr>
<tr>
<td>Education and Training</td>
<td>239</td>
</tr>
<tr>
<td>Emergency Medicine and Critical Care</td>
<td>265</td>
</tr>
<tr>
<td>Endocrinology, Diabetes, Obesity</td>
<td>288</td>
</tr>
<tr>
<td>Environmental Health</td>
<td>302</td>
</tr>
<tr>
<td>General Pediatrics</td>
<td>311</td>
</tr>
<tr>
<td>Genetics, Congenital Anomalies</td>
<td>362</td>
</tr>
<tr>
<td>Hematology and Oncology</td>
<td>380</td>
</tr>
<tr>
<td>History of medicine</td>
<td>406</td>
</tr>
<tr>
<td>Infectious Diseases</td>
<td>407</td>
</tr>
<tr>
<td>Mental Health</td>
<td>469</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>479</td>
</tr>
<tr>
<td>Neonatology</td>
<td>492</td>
</tr>
<tr>
<td>Nephrology</td>
<td>580</td>
</tr>
<tr>
<td>Neurology</td>
<td>589</td>
</tr>
<tr>
<td>Nutrition, Gastroenterology and Metabolism</td>
<td>600</td>
</tr>
<tr>
<td>Pediatric Surgery and surgical sub-specialties</td>
<td>646</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>671</td>
</tr>
<tr>
<td>Pulmonology</td>
<td>672</td>
</tr>
<tr>
<td>Vaccinations</td>
<td>691</td>
</tr>
</tbody>
</table>
"PRACTICE VACCINATION AGAINST HUMAN PAPILLOMAVIRUS IN ADOLESCENTS HOSPITALIZED IN A PEDIATRIC HOSPITAL, URUGUAY 2016".

Martín Notéjane¹, Soledad Iglesias², Carlos Zunino², Loreley García³
¹Department of Pediatrics and specialities, School of Medicine. University of the Republic. Pediatric Hospital, CHPR, ²Department of Pediatrics and specialities. , School of Medicine. University of the Republic. Pediatric Hospital, CHPR, ³Department of Pediatrics and specialities. , School of Medicine. University of the Republic. Pediatric Hospital, CHPR, , Montevideo, Uruguay

Background and aims: In Uruguay, cancer of the cervix is the second leading cause of cancer death in women. Since 2013 it has a quadrivalent vaccine against human papillomavirus (HPV), free but not compulsory, for adolescents at age 12. In the Pediatric Hospital in the Pereira Rossell (HP -CHPR) national reference center, in the public sector, 20% of income is for teenagers. Objective: to practice HPV vaccination in adolescents hospitalized CHPR HP.

Methods: Cross-sectional, prospective, anonymous teenagers over 12 years hospitalized survey study. Performed for 24 hours, one day a month, for 10 months. Data are presented for the first month. Informed the teenager and caregiver consent was requested. Approved by the Ethics Committee.

Results: 14 adolescent respondents, average age 12 years (range 12-16 years). 10 / 14 reportaron not receive HPV vaccine. 4 who reported receiving, they found the vaccine available. They reported reasons for not received; 6/10 not be informed; 4/10 caretaker refused. Reasons reported negative caregiver; Fears of adverse effects 3/4, 1/4 reported that physician not recommended. 9/14 reported to have prior information about: sex education, contraception or barrier. 8/14 reported first sexual intercourse, 6/8 used a contraceptive or barrier method, 5/6 reported condom use. 5/14 confirmed receiving information from the HPV vaccine, sexual health and contraception during hospitalization.

Conclusions: The opportunity to know the reasons for poor adherence to this vaccine is not limited to health control. Hospitalization is to provide timely information, interventions and ensure health rights scenario.

Keywords: Vaccine HPV, adolescent health, adolescent hospitalized.
Adolescent medicine

“IT HELPS MOVING TO ANOTHER LEVEL IN LIFE”: ADOLESCENTS’ IMPRESSIONS AND SUGGESTIONS ON DISCLOSURE OF HIV STATUS IN ZAMBIA

Sylvia Mwanza-Kabaghe¹, Sumiyo Okawa², Mwiya Mwiya³, Kenichi Komada⁴, Naoka Ishikawa⁴,⁵, Chipepo Kankasa⁶

¹Educational Psychology, Sociology and Special Education, University of Zambia, Lusaka, Zambia, ²The University of Tokyo, Tokyo, Japan, ³Department of Paediatrics and Child Health, The University Teaching Hospital, Lusaka, Zambia, ⁴National Center for Global Health and Medicine, Tokyo, Japan, ⁵WHO Western Pacific Regional Office, ⁶WHO Western Pacific Regional Office, Manila, Philippines, ⁷Department Peadiatrics and Child Health, The University Teaching Hospital, Lusaka, Zambia

Background and aims: This study examined disclosure-related event, impression, and suggestions reported by adolescents who have known their HIV status

Methods: A cross sectional study was used. 200 HIV-positive adolescents aged 15 to 19 years reported their experience on disclosure of HIV status, impact of knowing their status, and HIV-related knowledge ever learned

Results: 163 (86.2%) showed positive perception on disclosing HIV status to children. (55.6%) were told their status at hospital, 102 (54.0%) chose hospital as an appropriate place. Medium age of knowing the status was 12 years old. About one third (31.6%) suspected HIV positive status before being told. After learning HIV status, 153 (80.5%) improved adherence to ARV, 61 (33.0%) blamed their parents, and 103 (56.0%) felt more comfortable talking about HIV with their caregivers. Regarding HIV-related knowledge, 58 (30.5%) did not know how they were infected with HIV, 39 (21.0%) did not know risks of non-adherence to ARV.

Conclusions: Adolescents living with HIV have multiple psychosocial challenges after learning their HIV status. There is substantial need for pre- and post-disclosure care, support and counselling.

Keywords: adolescents, Disclosure, HIV
ADOLESCENT HEALTH: MAIN PROBLEMS IN RUSSIAN FEDERATION

Elena Antonova¹, Alexander Baranov¹, Leyla Namazova-Baranova¹, Valeriy Albitsky¹, Rimma Terletskaya¹
¹Scientific Center of Children's Health, Moscow, Russia

Background and aims: The demographic problem is one of the main tasks for Russia today. The aim is to estimate the adolescent health and to determine measures for its improving.

Methods: The official data of Federal state statistics service for children health were analysed.

Results: Official statistics show a steady decrease in the number of adolescents and their share in the total population. During 10 years the number of teenagers has decreased almost in 2 times and amounted to 7.5% of the total population.

The overall morbidity increased by 39.2%. The overall incidence of mental and behavioral disorders increased by 11.3%. The most important social issue related to mental health are the cases of psychoactive substances consumption by adolescents. They account for more than 30% of all mental and behavioral disorders. Reproductive health also deteriorates, both of girls and boys. The level of sexually transmitted infections is still high. Russia remains the leader in Europe in the number of births and abortions in mothers under the age of 20 y.o. Another important demographic indicator is disabilities. The proportion of adolescents among children with disabilities is about 30% and continues to grow. Special mention should be given to such an important demographic indicator as mortality. In 10 years this figure has decreased by 35.3%. But more than in 70% causes of death are injuries and poisoning.

Conclusions: The priority directions for adolescent health improving are:
- to extend the National calendar of vaccinations;
- to improve the RF legislation concerning children's health.

Keywords: problems, health, Russian Federation, Adolescents
Adolescent medicine

ADOLESCENT MORBIDITY AND MORTALITY PATTERN IN AN EMERGENCY PAEDIATRIC UNIT IN THE FEDERAL CAPITAL TERRITORY, NIGERIA

Uduak Offiong*¹, Felicia mairiga¹
¹paediatrics, university of abuja teaching hospital, Gwagwalada, Nigeria

Background and aims: The period of adolescence can be described as the transition from childhood to adulthood. This transition also comes with changes in the health needs of this group due to their unique their biological, psychological and social characteristics. Defining the morbidity and mortality burden in this set of children will help identify these health needs. It is crucial to the continuation of a healthy adult population that these needs be identified and addressed. In developing nations this information is lacking.¹,² Hence our study to describe the emergency room morbidity/mortality pattern among adolescents.

Methods: A retrospective study reviewing case notes and admission records of children 10-16 years presenting between January 2008 and December 2012 in the emergency paediatric unit. Both demographic and clinical data on indications for admission were extracted and entered in Microsoft excel 2007. Data is presented in percentages.

Results: Four hundred and eighty nine adolescents were seen during the study period. The major causes of morbidity and mortality were infectious diseases with malaria and septicaemia ranking highest. Tetanus was more prevalent in males than females. Sickle cell anaemia was the commonest non-communicable disease in the study population. Mortality rate was 8.8%.

Conclusions: Infectious diseases are still a cause of morbidity and mortality in the adolescent population. Tackling infection is necessary while taking steps to control the emergence of non-communicable disease among childhood survivors.

Keywords: Adolescents, Infectious Diseases
CARING FOR ADOLESCENTS: A QUALITATIVE EVALUATION AMONG HEALTHCARE PROVIDERS IN GUATEMALA

Juan Carlos Maza\textsuperscript{1}, Hayley Teich\textsuperscript{2}, Erwin Calgua\textsuperscript{1}, Areej Hassan\textsuperscript{2}
\textsuperscript{1}Universidad de San Carlos de Guatemala, Guatemala City, Guatemala, \textsuperscript{2}Medicine, Boston Children’s Hospital, Boston, United States

Background and aims: Today’s generation of adolescents is the largest in history, creating a major challenge for LMIC countries faced with the necessity of addressing their healthcare needs. Our objective was to assess the extent to which medical providers in Guatemala are trained, knowledgeable and feel comfortable with providing services to adolescents.

Methods: 20 Guatemalan physicians were recruited for semi-structured interviews exploring their experience in adolescent health care. Recruitment continued until thematic saturation was reached. Interviews were recorded and transcribed verbatim, and then analyzed for emergent themes using principles of framework analysis.

Results: Five major themes emerged from the data: (1) Perception of current needs - The majority of providers felt that adolescents have different healthcare needs than children and adults, and would benefit from dedicated healthcare services; (2) Barriers - There were concerns that not having a dedicated site or group of providers posed significant barriers for adolescents seeking care; (3) Communication - Providers admitted to not always feeling comfortable in discussing confidential topics such as substance use and sexuality; (4) Available services - Most struggle with finding additional services, especially related to unmet mental health needs; and (5) Perceived gaps in training - Few providers felt that they had received adequate training in adolescent health.

Conclusions: Providers recognize the need for increased and dedicated adolescent health care services. There is strong support for the creation of a credentialed adolescent health training program.

Keywords: Adolescent Health Services, MEDICAL EDUCATION
CHARACTERISTICS OF THE SEXUAL DEVELOPMENT OF CHILDREN OF THE ARAL SEA REGION

L Lim¹, V Kozhanov¹, R Boranbaeva¹, R Bishmanov¹
¹Funcional diagnostics, Scientific Center of Pediatrics and Pediatric Surgery, Almaty, Kazakhstan

Background and aims: Research the sexual development of children and adolescents living in an environmentally and socially disadvantaged area of the Aral Sea.

Methods: The cross-sectional research was attended by 943 children and adolescents 6-17 years (including 462 boys and 481 girls) residing in Kyzylorda region. The group of children was determined by age and sex. Visual assessment of sexual development was carried out using the Tanner scale. National composition of the test was submitted to the regional population. The materials were processed by a variation-statistical method with the calculation of basic parameters of variation.

Results: We conducted a study on the subject of registration deadlines appearance of secondary sexual characteristics in children Aral Sea region. The data are presented in tables. Table 1 show that puberty girls Aral region had regular sequence when the first sign of puberty is a recorded increase in the breast (A), then body hair pubis and the subsequent body hair armpits. In our case, M (P50) corresponds to the formula Ma2R2A1. And the age at menarche in various population samples within the same region is a constant value.

In turn, starting of appearance of secondary sexual characteristics for boys were advancing at a later time than girls on average at 1 year (tab. 2). For girls the appearance of secondary sexual characters had a certain sequence: first to show signs of body hair pubis, and then body hair armpits.

Conclusions: Thus, the majority of children Aral region going harmonious and consistent development of secondary sexual characteristics.
### Table 1. Date of occurrence of secondary sexual characteristics in girls Aral Sea region

<table>
<thead>
<tr>
<th>Grading feature (scores)</th>
<th>The age at which certain severity of gender depending on the percentile graduation (year/month)</th>
<th>3</th>
<th>5</th>
<th>10</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>90</th>
<th>95</th>
<th>97</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>The development of the mammary gland</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8,10, 9,1, 9,5, 10,3, 11,4, 12,7, 13,7, 14,11, 15,2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>9,7, 10,0, 11,2, 12,4, 13,7, 14,9, 15,8, 16,2, 16,6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>12,1, 12,10, 13,4, 14,4, 15,5, 16,3, 16,8, 16,10, 16,11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hairiness of the pubis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>10,1, 10,3, 10,8, 11,6, 12,3, 13,4, 14,3, 14,7, 14,9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>11,6, 12,0, 12,4, 13,2, 14,5, 15,6, 16,3, 16,7, 16,9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>11,10, 12,8, 13,4, 14,3, 15,5, 16,4, 16,9, 16,10, 16,11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hairiness of ampits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>11,0, 11,8, 11,11, 12,4, 13,2, 14,6, 15,2, 15,10, 16,0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>11,9, 12,1, 12,6, 13,7, 15,0, 15,11, 16,7, 16,8, 16,10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>12,4, 13,0, 13,4, 14,1, 15,3, 16,3, 16,8, 16,10, 16,11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Menarche</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11,1, 11,3, 11,8, 12,4, 13,5, 14,3, 14,10, 15,0, 16,0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 2. Date of occurrence of secondary sexual characteristics in boys Aral Sea region

<table>
<thead>
<tr>
<th>Grading feature (scores)</th>
<th>The age at which certain severity of gender depending on the percentile graduation (year/month)</th>
<th>3</th>
<th>5</th>
<th>10</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>90</th>
<th>95</th>
<th>97</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hairiness of the pubis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>10,8, 10,11, 11,0, 11,8, 12,6, 13,6, 15,6, 16,6, 16,11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>13,11, 14,0, 14,3, 14,8, 15,2, 16,0, 16,11, 17,2, 17,4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>15,6, 15,7, 15,8, 16,3, 16,6, 17,0, 17,4, 17,5, 17,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hairiness of ampits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>11,11, 12,0, 12,6, 13,4, 13,4, 14,4, 15,5, 16,2, 16,4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>13,11, 14,0, 14,2, 14,9, 15,6, 16,6, 17,2, 17,5, 17,6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>15,2, 15,8, 15,11, 16,7, 17,0, 17,6, - , - , -</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Keywords:** children, sexual development, the Aral Sea region
Adolescent medicine

CLINICO-EPIDEMILOGICAL PROFILE OF ADOLESCENTS HAVING TUBERCULOSIS – A HOSPITAL BASED COHORT STUDY

Harish Pemde*¹, Lakshmanan Chidhambaram¹, Varinder Singh¹

¹Pediatrics, Lady Hardinge Medical College, New Delhi, India

Background and aims: Tuberculosis (TB) in adolescents differs substantially from that in younger children. We studied clinico–epidemiological profile of adolescents having tuberculosis, and also assessed the compliance to treatment and the perception of tuberculosis disease among patients.

Methods: Thirty adolescents (10-19 years old) recently diagnosed with TB were included till date and 30 more will be included. Clinico–epidemiological profile was recorded and they were followed till intensive phase of therapy. Their perception about TB and adherence to treatment were assessed by in-depth interview. Disease features, perceptions, and compliance are summarized as percentages.

Results: Only 30% subjects had contact with a case with TB. Common symptoms are loss of appetite(86%), weight loss(80%), fever(76%) and cough(46%). Extrapulmonary TB (abdomen and lymph node) was found in 57%, pulmonary in 43% and disseminated in 13% subjects. All patients received directly observed treatment and were compliant to treatment. All adolescents were aware of availability and duration of treatment, 93% knew symptoms of TB, 43% cause and only 30% knew route of transmission. Many(70%) adolescents felt TB is a social stigma.

Conclusions: Clinico-epidemiological profile of adolescents has features of both adults and children having TB. Knowledge and perception about TB needs improvement to remove the stigma surrounding the disease.

Keywords: Adolescents, compliance, stigma, tuberculosis
COMPARISON OF FOOD INTAKE BETWEEN SMOKERS AND NON-SMOKERS AMONG ADOLESCENTS

Meita Dhamayanti¹, Dewi Marhaeni², Nenden Shinta Mardiana³, Anindita Noviandhari³
¹Child Health, Hasan Sadikin General Hospital, Faculty of Medicine, Universitas Padjadjaran, ²Nutrition, ³Medical School, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia

Background and aims: The prevalence of adolescent smokers in Indonesia is increasing substantially. This may due to initiation of smoking in a relatively younger ages. Cigarettes contain no less than 2000 substances, one of which is nicotine. Nicotine in cigarettes are known to have certain effects on appetite. Smokers are more likely to have decreased appetite than non-smokers. This study aimed to compare the amount of food intake between smokers and non smokers among adolescents.

Methods: Cross-sectional study was conducted during September until November 2014 in Jatinangor, a district in West Java Province, Indonesia. Respondents were randomly selected from male elementary school students and male high school students aged 10-19 years old. Each respondent was given a questionnaire and underwent a single interview comprised of 24 hours food recall to assess food intake. The data obtained were analyzed using t-test.

Results: A total of 159 samples were included in this study, consisted of 78 and 81 adolescent smokers and non smokers respectively. Most of the adolescent smokers were aged 14-16 years old at the time this study was conducted, with the youngest being 10 years old. There were significant differences between adolescent smokers and non smokers regarding carbohydrate, protein, and fat intake (131.52 g; 162.45 g; p = 0.000), (36.10 g; 42.54 g; p = 0.000), (36.59 g; 40.98 g; p = 0.003).

Conclusions: There are significant differences in food intake between smokers and non smokers among adolescents. Adolescent smokers are more likely to have lower food intake than non smokers.

Keywords: adolescent, food intake, smoker
DEVELOPMENT, TESTING AND VALIDATION OF TOOLS TO SCREEN ADOLESCENTS HAVING PHYSICAL, PSYCHOSOCIAL, AND MENTAL HEALTH ISSUES.

Harish Pemde¹, Sathya Rajendran², Dinesh Kataria³

¹Center for Adolescent Health, ²Pediatrics, ³Psychiatry, Lady Hardinge Medical College, New Delhi, India

Background and aims: Adolescents often do not reveal real issues in clinical settings. Screening helps in identifying adolescents having issues from many adolescents visiting clinics. We aimed to develop and validate a screening tool to identify adolescent requiring detailed medical evaluation for physical or mental health, psychosocial concerns of adolescence, and risk factors for chronic diseases.

Methods: Available screening tools were reviewed by expert group to list relevant questions. Focussed Group Discussion (FGD) with nurses, adolescents and parents identified common issues. First draft (in English and Hindi languages) was tested on nursing students and adolescents. Factor analysis helped to prepare second draft tool (for below 14 years, separate for male and female adolescents above 14 years) which was validated in adolescents visiting hospital. Cronbach’s alpha and diagnostic utility were analysed for various cut-off scores by area under curve (AUC).

Results: Screening tool was validated on 300 adolescents (146 below and 154 above 14 years). For best AUC values for various cut-off scores, sensitivity were between 72-95%, specificity 25-95%, positive predictive values 80-93%, and negative predictive values between 34-49%. Cronbach’s alpha was fair (0.72 to 0.84) for 3 screening tools. The tools could identify risk factors for chronic diseases in all groups.

Conclusions: The screening tools are comprehensive and fair enough to identify adolescents having issues (physical and mental health, adolescence related concerns, and risk factors for chronic diseases) for detailed medical evaluation even in busy clinic settings.

Keywords: adolescents, diagnostic testing, Screening
EVALUATION OF MEDICAL STUDENTS’ INTERVIEWING BY ADOLESCENTS: WHAT DO ADOLESCENTS CARE ABOUT?
Kim Blake1, April Tan1, Alexandra Hudson1
1Dalhousie University, Halifax, Canada

Background and aims: Adolescent interviewing represents a challenge to learners. The Structured Communication Adolescent Guide (SCAG) provides a programmatic assessment approach, using adolescents and permits feedback on performance in clinical environments. The SCAG has 4 sections: Getting started, gathering information, teen alone, and wrap up.

Methods: We analyzed narrative feedback from SCAGs completed by adolescent patients who were interviewed by third-year medical students. Numerical scores and grades in the SCAGs were compared to narrative feedback. Mann-Whitney U test was used.

Results: Thirty-seven (50%) of 74 SCAGs had narrative feedback (84% positive). Most common positive themes were Approachable, Comprehensive, and Friendly. Most common critical themes were Confidentiality Concerns, Unaware of a Patient’s Particular Concern, and Incomplete Closure. Critical feedback was most prevalent in the Teen Alone section of the SCAG. Critical feedback in Getting Started and Teen Alone sections had significantly lower numerical scores (p<0.001, p<0.023) compared to positive feedback. The Teen Alone section had significantly lower grades (A-F) with critical feedback.

Conclusions: Adolescent narrative written feedback regarding their interviews with third-year medical students was overwhelmingly positive. Critical feedback was most common in the Teen Alone section HEADSS are discussed. Adolescents being approachable and are concerned about breach of confidentiality.

Keywords: adolescents, Confidentiality, Feedback, Interviewing
HEALTH IMPACT OF ADVERSE CHILDHOOD EXPERIENCES AMONG YOUTHS IN CUSTODY: THE SIGNIFICANT CONTRIBUTION OF SEXUAL ABUSE

Yasmine Ratnani¹, Manon Robichaud², Martine Hebert³, Manon Duchesne³, Sebastien Bergeron¹, Rosanne Villois-Krajden¹, Yves Lambert⁴, Ronald Chartrand⁵, Pierre Mcduff⁶, Jean-Yves Frappier¹
¹Adolescent medecine, CHU Sainte-Justine, ²University of Quebec in Montreal, ³Centre Jeunesse de Montréal-IU, Montreal, ⁴Centre Jeunesse Montérégie, Longueuil, ⁵Centre Jeunesse de Montréal-IU, ⁶University of Montreal, Montreal, Canada

Background and aims: Literature suggests a graded relationship between adverse childhood experiences (ACE) and health problems as early as in adolescence. Youths under the welfare protection system represent an especially vulnerable group. The objective of this analysis is to evaluate the contribution of sexual abuse as compare to other ACEs on health issues in adolescents under court custody.

Methods: This is a secondary analysis from a health evaluation of youths in custodial facilities. A total of 315 teenagers 14-17 y.o. (134F, 181M) completed a self-reported questionnaire about their health status and were evaluated by a nurse/doctor. We identified 8 ACEs: single family; violent death of family member; family history of incarceration, mental health issues, substance abuse; personal history of intrafamilial or extrafamilial physical abuse; personal history of sexual abuse. Multiple/logistic regression between the ACEs and relevant variables were performed.

Results: Personal history of sexual abuse was the most consistant ACE predicting negative health outcomes: perceived health status, number of health problems, psychosomatic complaints, sleep problems, medication, number of sexuality-related problems in girls, sex work, mental health disorders, suicidal ideation, suicidal attempt, self-inflicting injuries, depression, low self-esteem and overdose.

Conclusions: Among ACEs, a personal history of sexual abuse seems to be the most contributing factor for significant health outcomes. A simple question could help identified those at higher risk and higher needs for health services in teens under custody.

Keywords: Adolescence, Adverse childhood experiences, Indigenous youth, Sexual abuse, Youths in custody
HEALTH OF YOUTH IN CUSTODIAL FACILITIES: VULNERABILITIES

Jean-Yves Frappier\textsuperscript{1}, Yasmine Ratnani\textsuperscript{2}, Sebastien Bergeron\textsuperscript{3}, Rosanne Villemaire Krajden\textsuperscript{4}, Yves Lambert\textsuperscript{5}, Manon Duchesne\textsuperscript{6}, Ronald Chartrand\textsuperscript{7}, Pierre McDuff\textsuperscript{3}

\textsuperscript{1}Paediatrics, CHU Sainte-Justine, U of Montreal, Montréal, \textsuperscript{2}CHU Sainte-Justine, \textsuperscript{3}University of Montreal, \textsuperscript{4}Concordia University, Montreal, \textsuperscript{5}CIS\textsuperscript{SSME}, St-Lambert, \textsuperscript{6}CIUSSS sud de l'île de Montreal, \textsuperscript{7}ACJQ, Montreal, Canada

Background and aims: Youth admited in Custodial facilities are considred vulnerable because of their family background and/or lifestyle. The aims of the study were to evaluate the health of teens in custodial facilities and provide data so resources could meet their health needs.

Methods: A total of 315 youth 14-17 y.o. were evaluated shortly after admission. A self administered questionnaire was completed by teens. An health evaluation followed with the nurse/MD using a comprehensive standard data collection check list.

Results: 92% had at least one health problem, 55% had 4 or more. 31% of girls and 51% of boys reported their health as very good/excellent. 52% were taking a medication. Above 30% had an acute health problem, 65% had a chronic disease and 52% a mental health problem; 70% of the girls had problems/needs related to their sexuality. Altogether, 44% of the chronic diseases were properly taken in charge. 56% needed an investigation or specialist referral and 51% of the girls and 31% of boys needed a follow-up by the nurse in the facility. More than 70% had sleep problems and a statistically significant higher percentage of these youth reported various health problems as compare to those without sleep problems.

Conclusions: The results confirm the importance of an early and comprehensive health evaluation of youth in custodial facilities in order to optimize their rehabilitation. It shows the importance of organized health services in the facilities along with an organized network in order to answer their needs and insure a transition when they leave the facilities.

Keywords: adolescence, mental health, vulnerable youth
HISPANIC ADOLESCENT VIEWS ON REPRODUCTIVE HEALTH EDUCATION

Susan Lee¹, Linh Do¹, Christina Gutierrez¹, Ophra Leyser-Whalen², Zianya De la mora-mendoza¹, Fatima Aly³, Sireesha Reddy¹

¹Department of Obstetrics and Gynecology, Texas Tech University Health Sciences Center, ²Department of Sociology and Anthropology, University of Texas at El Paso, ³Department of Pediatrics, Texas Tech University Health Sciences Center, El Paso, United States

Background and aims: Despite the trend in declining pregnancy rates in the United States, Hispanic teens continue to represent the highest proportion of pregnancies in comparison to other ethnicities. Our aim is to understand perceptions of Hispanic adolescents as they relate to parent and physician-instructed reproductive education.

Methods: Recruitment of participants took place at a pediatric clinic. Surveys assessed adolescent perceptions on sex education topics and discussions, sexual history, and beliefs as they relate to puberty, menstrual cycle, STIs, pregnancy, contraception, sex, HIV/AIDS, abortion, and gender identity & sexual orientation.

Results: Adolescents consisted of 57% boys and 44% girls with a median age of 14 years. 19% of respondents believed sex education to mean puberty and pregnancy while only 7% believed it to mean sex. Adolescents older than 15 were comfortable speaking to their doctor about pregnancy (p=0.005), sex (p=0.05) and abortion (p=0.02) while adolescents 14 and younger were uncomfortable discussing these topics.

Conclusions: Comparison shows adolescent age is a factor for certain topics in sexual education. This preliminary data suggest physicians should tailor their reproductive education discussions to adolescent age.

Keywords: adolescents, Hispanic, reproductive education
HOW WOULD BEDTIME PHYSICAL ACTIVITY AFFECT THE ACADEMIC PERFORMANCE OF ADOLESCENT LEBANESE STUDENTS?

Marie Claude Fadous Khalife ¹, Youssef Feghali ², Michel Soufia ³, Rita Tannous ², Mode Al Ojaimi ⁴

¹Pediatrics, Holy Spirit university of Kaslik, Kaslik, University Hospital NDS, Byblos, ²Pediatrics, ³Psychiatry, Holy Spirit University of Kaslik, Kaslik, ⁴Pediatrics, Balamand University, familial medical hospital, Koura, Lebanon

Background and aims: Background and aim: Physical activity is encouraged and advised at all ages especially in adolescents. We have scarce data regarding the best timing of this activity in the routine daily schedule of adolescent students.

The purpose of our study is to look at the effect of physical activity at bedtime on the academic performance of adolescent Lebanese students.

Methods: Materials and methods: It’s a national, multi-regional, multicentric and epidemiological stratified sampling collected from schools with more than 200 students each during the academic year 2014-2015. Data was collected through questionnaires distributed to 1800 adolescents aged 10-18 years old. Academic performance was evaluated by 2 objective criteria: failure in 2 main subjects and school average. Results were analyzed using SPSS program version 22.00 (crosstabs).

Results:

Exercising before bedtime was positively associated with failure in 2 or more main school subjects with a p value=0.000 while school average was negatively influenced with exact p value=0.000

Conclusions: Conclusion: This is the first study that shows a negative relation between exercise and school performance. More studies are required to see if these results can be replicated.

Keywords: Adolescent's learning, bedtime, Physical activity, school performance
IMPACT OF A TRANSITION PLANNING TOOL (TPT) ON THE CORE TRANSITION OUTCOMES (CTO)

Constance Wiemann¹, Albert Hergenroeder¹, Blanca Sanchez¹, Sarah Graham¹, Krystle Bartley², Jean Raphael¹
¹Pediatrics, Baylor College of Medicine, ²Emergency Center, Texas Children’s Hospital, Houston, United States

**Background and aims:** To describe the impact of a TPT on the CTO (US CSHCN National Survey, Lotstein) and completion of the first adult visit.

**Methods:** A HCT TPT was designed to address gaps in knowledge/skills needed for HCT from pediatric to adult care. The clinician assigns a successfully accomplished (SA) score for each question mastered. Providers in 3 services were trained to use the TPT. Patients (16-25 yrs) completed baseline and 12-month follow-up questionnaires (n=74) assessing perceptions of the CTO and were followed up to 3 years to determine adult visit completion status. Student’s t-tests and Chi-square analyses were used.

**Results:** The mean of TPT SA questions was higher among patients who reported the CTO as met vs. not met (4.2±3.7 vs.2.6±2.7, p=.028). The mean of TPT uses did not differ between groups. Of the 74 patients who completed both assessments, 44 left pediatric care and their adult provider status is known: 35/44 (80%) transitioned to an adult provider and 9/44 (20%) have not. Those who met the CTO (n=18) were more likely to visit an adult provider (16/18, 89%) compared to those who did not (n=26) meet the CTO (19/26, 73%; p=.186).

**Conclusions:** Even with limited use of the TPT over 12 months, the more SAs a patient receives, the more likely they will report reaching the CTO, which may promote completion of the their first adult visit.

**Keywords:** Health Care Transition
IMPACT OF VIOLENCE RELATED ADVERSE CHILDHOOD EXPERIENCES ON HEALTH INDICATORS OF YOUTH

Jean-Yves Frappier¹, Martine Hébert², Martin Blais³, Francine Lavoie⁴
¹Department of Paediatrics, CHU Sainte-Justine, U of Montreal, ²Université du Québec à Montréal, Montreal, ³Université du Québec à Montréal, Montréal, ⁴Psychology DPT, Université Laval, Québec, Canada

Background and aims: Reports highlight a graded relationship between adverse childhood experiences (ACE) and health problems, but most studies are conducted with adults. The objective of this study was to document the prevalence of violence related ACE in a representative sample of students and explore their contribution to different health indicators.

Methods: Data were drawn from the Youths’ Romantic Relationships survey completed through a one-stage stratified cluster sampling of high schools students (14-18 yo): 8194 completed the survey. Adverse childhood experiences included: being victim of physical and/or sexual abuse, witnessing violence, witnessing father-to-mother and mother-to-father psychological and physical violence. Health outcomes considered: health care services use, medication, serious accident, drug abuse, condom use, pregnancy, psychological distress, suicide ideation.

Results: A total of 76% of girls and 68% of boys report at least one ACE and 24% and 16.5% respectively report 3 or more. Those who report ACEs are more likely to: use health services, require medication, sustain injuries following an accident, abuse drugs, not use condoms and be pregnant (girls), show high level of psychological distress and have suicidal ideation. For many health outcomes, likelihood increases with the number of ACEs. Logistic regression analyses controlling for age showed OR ranging from 1.1 to 1.6 for all health outcomes.

Conclusions: These results shows the importance of inquiring about past adverse events in adolescents in order to identify vulnerable ones, understand the cause of problems and intervene adequately.

Keywords: adolescence, adverse childhood experiences, physical abuse, sexual abuse/agnosis
MORBIDITY PATTERN AND OUTCOME OF HOSPITALIZED ADOLESCENTS IN A TERTIARY RURAL HOSPITAL IN NORTH WESTERN NIGERIA

Umma Idris¹, Bilya Rabiu²
¹paediatrics, Federal Medical Centre , ²paediatrics, federal medical centre birnin kudu, jigawa, Nigeria

Background and aims: Adolescent constitute a significant proportion of the entire world’s population, knowledge morbidity amongst this group will assist policy makers in organizing adequate preventive and treatment services thereby improving the overall well being. this study aimed at determining the pattern of diseases and their outcome in hospitalized adolescents

Methods: This was a cross-sectional retrospective study conducted on all consecutive admissions children aged 10 to 15 years between November 2014 to October 2015 at the Emergency Paediatric unit of Federal Medical Centre Birnin Kudu. The following data were extracted from the retrieved case files; age, sex, diagnosis and outcome

Results: 63(9.1%) of the 695 total admissions were adolescents. Thirty three were males with median of 12 years at presentation. Commonest (60%) cause of admission was an infective causes 38 ( malaria, typhoid fever and septic arthritis). Other diagnoses were complication of sickle cell anaemia, acute glomerulonephritis and rheumatic valve heart disease. fifty five were discharged(87%) home, 3 left against medical advice, 1 absconded while 4(6.3%) mortalities were recorded.

Conclusions: Infectious diseases accounted for the commonest cause of hospitalization among studied group. Simple preventive measures, adequate hygiene, sanitation and clean water will prevent diseases and improve their well being

Keywords: None
MOVING FROM PAEDIATRIC TO ADULT HEALTH SERVICES: EXPERIENCES OF ADOLESCENTS WITH NEUROMUSCULAR DISORDERS.

Marie Deverell¹, Amy Phu¹, Elizabeth Elliott², Nigel Clarke³, Helen Young³, Yvonne Zurynski¹

¹Australian Paediatric Surveillance Unit, ²University of Sydney, ³The Children’s Hospital at Westmead, Sydney, Australia

Background and aims: Neuromuscular disorders (NMD) are characterised by progressive muscle weakness and atrophy. Adolescents find it difficult to navigate the adult health service (HS), leaving them feel anxious/stressed, some abandoning the adult HS all together. We describe the transition experiences of adolescents living with NMD to identify enablers, gaps and needs.

Methods: Patients were identified from Children’s Hospital at Westmead, Sydney Australia. Inclusion criteria: transitioned from 2008 - 2013. Exclusion criteria: non-contactable, deceased or > 25 yrs.

Results: 14 participants completed the survey (13 males). Median age for transition was 18yr (range: 17-20 yrs). 13 transitioned to an adult HS, 1 was not accessing any adult HS at the time of the survey, despite being referred. 9 did not feel prepared for transition. They identified lack of coordination between paediatric and adult HS, some experienced anxiety about the appropriateness of services and lack of services in the adult HS. 11 participants had to travel further to access adult HS.

Conclusions: There is a need for earlier preparation, better coordination and improved access to multidisciplinary services in the adult sector. A needs assessment of existing adult health services in Australia is required.

Keywords: health service
NECK CIRCUMFERENCE AS A SCREENING INSTRUMENT FOR OVERWEIGHT AND OBESITY AMONG NIGERIAN SECONDARY SCHOOL ADOLESCENTS IN AN URBAN AREA

Eden Igbafe¹, James Renner², Abiola Oduwole³, Michael Ibeabuchi⁴, Elizabeth Oyenusi³
¹Paediatrics, 445 Nigerian Airforce Hospital, Ikeja, Lagos, ²Paediatrics, Babcock University, Ilishan-Remo, ³Paediatrics, Lagos University Teaching Hospital, Idi-araba, ⁴Anatomy, College of Medicine, University of Lagos, Lagos, Nigeria

Background and aims: Overweight and obesity are on the increase worldwide. The adolescent population is of special concern because the risks of these phenomena are higher when developed during this period. Methods of assessing overweight and obesity are being explored but neck circumference (NC) has not been widely investigated in adolescents. The aim of this study was to determine the usefulness of NC as a screening tool for overweight and obesity in Nigerian adolescents.

Methods: A cross sectional survey was conducted in 2013 among 897 adolescents aged 10-19 years in urban Lagos, using a stratified, multistage sampling method. Overweight and obesity were defined using the CDC criteria. Mean BMI and NC were compared using Student t test. Pearson correlation coefficient was calculated to determine the relationship between NC and other variables. Receiver operating characteristic analysis was used to evaluate optimal NC cutoffs for identifying overweight/obese adolescents.

Results: 64 subjects (7.1%) were overweight while 33 (3.9%) were obese, using BMI. NC was positively correlated with age and BMI. There were significant differences in the NC of those that were overweight/obese compared to those that were not. NC cutoff ranges for overweight/obesity per adolescent period were 33.95 to 36.95cm in males and 31.05 to 33.40cm in females. Sensitivities of the cutoffs were 70-96.6% while specificities were 60.2-87.7%.

Conclusions: NC is significantly correlated with BMI. It is a simple, quick and inexpensive tool which can be used to screen for overweight and obesity among adolescents in Nigerian communities.

Keywords: Adolescent, Body mass index, Neck circumference, Obesity, Overweight
PERCEPTION OF WEIGHT STATUS AMONG URBAN INDIAN ADOLESCENTS – A CROSS SECTIONAL STUDY.

Harish Pemde*1,2, Isha Goyal3, Manish Goel3, S Nagesh3

1Pediatrics, Lady Hardinge Medical College, 2Pediatrics, Kalawati Saran Children's Hospital, 3Community Medicine, Lady Hardinge Medical College, New Delhi, India

Background and aims: Nearly half of India’s 253 million adolescents are underweight. Perception of adolescents about weight determines their dietary behaviours and weight status. This study aimed to assess the perception of adolescents about their weight status.

Methods: This cross sectional study was conducted among 600 adolescents studying in class 8th-10th in private schools in an urban area of South Delhi, India in 2014. Perception about their weight status was assessed using self administered questionnaire. Height and weight were measured to calculate body mass index (BMI).

Results: Majority of study subjects were males (72.5%). Of all 55.7% students were malnourished (underweight 45% and overweight/obese 10.7%). However, majority (59.5%) of students perceived their weight as normal. Agreement between the observed and self perceived weight status was not good (kappa 0.07). Sensitivity and specificity of self perception of weight status was 43.7% and 63.53% respectively.

Conclusions: Most adolescents cannot perceive their weight status correctly. This may lead to unhealthy dietary practices. All adolescents should undergo periodic weight status screening using BMI.

Keywords: adolescents, body mass index, self perception, weight status
PROPOSAL OF STRATEGY OF INTERVENTION FOR THE SEXUAL AND REPRODUCTIVE HEALTH OF
MALE ADOLESCENTS.
Laura Elena Alvare Alvare¹, Beatriz Torres Rodríguez², Maria Dolores Lobato¹, Marta Melo¹, Ivette González¹
¹Pediatría, ²Psicología, CIMEQ, Habana, Cuba

Background and aims: Background: Male adolescent has his own characteristic that differentiate them of the
woman adolescent, which are closely linked to the construction of the masculinity, therefore they require a
specialized attention.
Aims: To approach the prevention of the behaviors of risk for the sexual and reproductive health (SSR) in male
adolescents from the perspective of the construction of the masculinity.
Methods: Based on studies of sexual and reproductive health (SSR) in 185 male adolescents between 15 and
18 years. Tasks are designed for the prevention of behaviors of risk in the SSR from the primary and
secondary attention and also including the parents and teachers, emphasizing in the gender and the
construction of the masculinity.
Results: The main opposing behaviors of risk were: precocious beginning of sexual relationships, not condom
use, frequent change of couple and use of toxic substances.
Conclusions: The approached theoretical and methodological elements as well as the results obtained in our
investigations, leave explicit that is necessary and possible the handling and the prevention of the risks in the
SSR of male adolescents and that the promotion and prevention of health is basic to be a very vulnerable
population.

Keywords: Intervention strategic, risks factors, gender, masculinity construction, male adolescents.
QUALITY OF CARE OF SERVICES TO ADOLESCENTS HOSPITALIZED IN PEDIATRICS WARD AND IN ADULT WARDS

Harish Pemde¹, Jyoti Dahiya*¹, Tanu Shree²
¹Pediatrics, Lady Hardinge Medical College, ²Medical Education, University College of Medical Sciences, New Delhi, India

Background and aims: Adolescents are hospitalized in wards for children or for adults when separate indoor services are not available. We aimed to assess quality of care of hospitalized adolescents and to find problems faced by them.

Methods: This observational cross-sectional study included adolescents (and parents) hospitalized in Pediatrics ward and in adult wards of LHMC New Delhi India. Quality of care was assessed by Pyramid questionnaire and focussed group discussion (FGD) with adolescents and their parents. Scores in various domains were compared using t-test.

Results: We included 30 adolescents (and parents) each from Pediatrics and Adult wards. Poorest scores were for medical treatment, staff attitude and staff work environment. Best scores were for routine information provided and accessibility. Scores were comparable in both children’s and adult hospitals.

FGDs general concerns about cleanliness, overcrowding and behaviour of support staff. Adolescents wanted better rest-rooms and bathrooms in both children’s as well as adult hospital but wanted more privacy in adult hospital. Adolescents wanted recreational facilities like television in indoor wards. Nearly half of them were satisfied with treatment.

Conclusions: Study revealed issues related to cleanliness, overcrowding in both hospitals and privacy issues in hospital for adults. The findings underline the need of separate wards for adolescent patients.

Keywords: adolescents, Focused Group Discussion, Quality of Care
RECURRENT PANCREATITIS CAUSED BY BULIMIA NERVOSA IN A GIRL

Seung-Taek Yu1, Du-Young Choi1

1Pediatrics, Wonkwang University, College of medicine, Iksan, Korea, South

Background and aims: Pancreatitis is an insult to the pancreas that leads to the presence of acute inflammatory cells, edema, and necrosis that may result in organ damage or fibrosis. In the majority of patients, this inflammation is self-limited and reversible. It is rare in children. Recurrent pancreatitis is related to pancreateo-biliary anomalies, hereditary pancreatitis and cystic fibrosis. But, she showed recurrent pancreatitis due to bulimia nervosa and this case is so rare that is reported.

Methods: An obese 11-year-old girl was hospitalized due to fever and epigastric pain.

Results: Laboratory findings showed amylase 420 IU/L; lipase 2608 IU/L. The result was an acute pancreatitis with CT grade D. After 27-day admission, she was discharged with recovery state. After the discharge, we performed MRCP. No evidence of biliary duct anomaly was found. But, after 3 months, she was hospitalized due to same symptoms. She recovered after 21-day admission. And, after 2 months, she suffered from fever and epigastric pain again. At 3rd and 4th admission, we evaluated the possibilities of autoimmune pancreatitis, metabolic disease, and other systemic diseases. The whole results were negative. According to the patient’s parent, she used to hide her foods and could not help binge eating. And she was diagnosed as a bulimia nervosa after the consult of a psychologist.

Conclusions: She was diagnosed with an acute pancreatitis. The authors report a case of recurrent pancreatitis by bulimia nervosa.

Keywords: pancreatitis
Resilience in Adolescents with Transfusion Dependent Thalassemia – Across Sectional Study

Harish Pemde¹, Deep Bhardwaj¹*, Jagdish Chandra¹

¹Pediatrics, Lady Hardinge Medical College, New Delhi, India

Background and aims: Adolescents develop resilience during adverse circumstances of daily living. Chronic diseases like thalassemia present life-long adverse circumstances. We studied resilience in adolescents with transfusion dependent thalassemia (TDT).

Methods: This cross-sectional study included 60 adolescents with TDCC at Kalawati Saran Children Hospital, New Delhi India, their adolescent siblings (21) and age and sex matched normal adolescents as controls (60). Resilience was assessed using Adolescent Resilience Questionnaire (ARQ) scores in three groups. Association between ARQ scores and disease parameters was analyzed using t-test of mean and of proportion. STATA software was used for statistical analysis.

Results: ARQ scores were similar in adolescents with TDT and their siblings but were higher than normal adolescents. High ARQ scores were associated with higher age at diagnosis, low mean pre-transfusion hemoglobin (<7 gram%), body mass index z-scores between -2 and +2, serum ferritin levels 2000-5000 nanogram/milliliter, higher number of transfusion per year and low socio-economic conditions.

Conclusions: Adolescents with transfusion dependent thalassemia are more resilient than their age matched normal adolescents, and as resilient as their age matched normal siblings. Inadequately managed adolescents had higher resilience scores. Holistic management of children with TDT can help them develop as normal adolescents.

Keywords: adolescents, resilience, Thalassemia
Adolescent medicine

RISKY BEHAVIOIR IN A GROUP OF BOARDING SCHOOL ADOLESCENTES
Laura Alvare Alvare*1, Randolph Anton Santana2
1Pediatria, 2Fisiatria, Centro de Investigaciones Medico Quirúrgicas (CIMEQ), Habana, Cuba

Background and aims: Background: Sexuality for the male adolescents is a challenge during this stage in life. Oftentimes males are misinformed and take up learned sexual patterns linked to gender and are exposed to several risk.
Aims: Learn about some of the sexual and social behavior that put adolescents at risk.
Methods: We are studying 39 boarding school adolescents aged 18 and 19. We performed a quantitative and qualitative research using anonymous surveys and the focal group.
Results: 92% of the adolescents had had sexual intercourse starting with an average age of 14.8 years. 44% of them do not use condom, drink alcohol during intercourse and claim not having access to a sexual education hot line, being their mothers the most important reference.
Conclusions: Early initiation age, alcohol ingestion and not use of condom in 44% of the adolescents are the main risky sexual and social behavior found in our research.

Keywords: Risky behavior, sexual intercourse, condom, alcohol, sexual education
SCREENING ADOLESCENTS FOR RISK FACTORS FOR DEVELOPMENT OF NON-COMMUNICABLE DISEASES.

Tanu Shree¹, Kamlesh Harish² and Adolescent Health Study Group
¹Medical Undergraduate Student, University College of Medical Sciences, ²Pediatrics, ESI Hospital Rohini, Delhi, India

**Background and aims:** Risk factors for non-communicable diseases (NCDs) can be managed during adolescence to prevent these diseases in adults. Data on screening of adolescents for risk factors for NCDs is presented.

**Methods:** We used data collected for validation of a self administered tool to screen health issues in adolescents in schools and at Centre for Adolescent Health LHMC New Delhi India during 2012-13 (372 subjects) and in 2014 (300 subjects). Data on NCDs risk factors was extracted and analysed using Microsoft excel. Prevalence of risk factors is reported as percentages.

**Results:** Nearly equal proportion of adolescents (41.5% in 2012-13 and 46.5% in 2014) participated in outdoor games at least 5 days a week. Half of adolescents spent greater than 2 hours per day on mobile or TV or computer. Nearly 2/3 (67%) in 2012-13 and 56% in 2014 consumed fruits, fruit juices or green leafy vegetables in routine diet at least 5 days a week. History of any family members having high blood pressure, diabetes or heart disease was present in 38.4% subjects in 2012-13 and in 29.65% in 2014. Only 1.5% of older (>14 years) adolescents reported tobacco use and 11% in 2012-13 and 18% in 2014 reported alcohol use.

**Conclusions:** Large proportions of adolescents had risk factors for non-communicable diseases. This calls for screening and management of these risk factors in adolescents to prevent occurrence of diabetes, hypertension, heart diseases, and stroke in adults.

**Keywords:** non communicable diseases, Risk Factors, screening
Adolescent medicine

SECONDARY EDUCATION AND HEALTH OUTCOMES IN YOUNG PEOPLE FROM THE CAPE AREA PANEL STUDY (CAPS).

Joseph Ward 1, Russell Viner 1

1Institute of Child Health, University College London, London, United Kingdom

Background and aims: Education is one of the strongest social determinants of health. We examined if there are additional benefits to completing upper secondary compared to lower secondary education in a middle-income country.

Methods: We performed a longitudinal analysis of the Cape Area Panel Study (CAPS), a survey of South African adolescents. We undertook causal modeling using structural marginal models to examine the association between level of education completed and various future health outcomes and behaviours, using inverse probability weighting to control for sociodemographic confounders.

Results: Of 3,439 participants, 646(18.8%) had completed lower secondary and 2,621(76.4%) upper secondary education. Completing upper secondary education was associated with improved health compared with lower secondary. Males were less likely to have poor health (OR 0.52; 95%CI 0.29-0.95; p=0.033); a health problem (OR 0.49; 0.27-0.88; p=0.016); or report health interferes with study or work (OR 0.54; 0.29-0.99; p=0.047), but not females. Females were less likely to have been pregnant (OR 0.45; 0.33-0.61; p<0.001); become pregnant under 18 (OR 0.32; 0.22-0.46; p<0.001) or have had sex under 16 (OR 0.39; 0.26-0.58; p<0.001). Males and females were less likely to have smoked cigarettes (males: OR 0.52; 0.38-0.70; p<0.001; females OR 0.56; 0.41-0.76; p<0.001); males were less likely to have taken illicit drugs (OR 0.6; 0.38-0.96; p=0.033). No associations were found between education and alcohol use, poor mental health, obesity or hypertension.

Conclusions: Upper secondary education offers middle-income countries an effective way of improving adolescent health.

Keywords: adolescent health, Education
STATUS OF VITAMIN D OF TEENAGE GIRLS IN WINTER

Irina Zakharova¹, Tatiana Tvorogova¹, Svetlana Vasilieva¹
¹Russian Medical Academy of Postgraduate Education, Moscow, Russia

Background and aims: Our study was performed to assess of blood serum levels of 25-OHD of teenage girls in a winter season.

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

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

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

Keywords: teenagers, vitamin D
Adolescent medicine

SUSTAINABLE IMPROVEMENT IN OUTCOMES IN ADOLESCENTS AND YOUNG ADULTS (AYA) WITH CANCER IN CANADA: THE ROLE OF THE CANADIAN TASK FORCE (TF) ON AYA WITH CANCER

Paul Rogers\(^1\) on behalf of Canadian Taskforce on Adolescents and Young Adults with Cancer, Ronnie Barr\(^2\) on behalf of Canadian Taskforce on AYAs with Cancer, Brent Schacter\(^3\) on behalf of Canadian Taskforce on AYAs with Cancer, Sonja De Pauw\(^2\) on behalf of Canadian Taskforce on AYAs with Cancer and Canadian Taskforce on AYAs with Cancer

\(^1\)Paediatrics, BC Childrens Hospital, Vancouver, \(^2\)Paediatrics, McMaster University, Hamilton, \(^3\)Oncology, Cancar Care Manitoba, Winnipeg, Canada

**Background and aims:** AYAs with cancer (15 to 29) have distinct psycho-social issues, host and disease biology and suffer from a dichotomy of care.

**Methods:** The TF was established in 2008 with support from the Canadian Partnership Against Cancer and C17. The goal is to facilitate AYA care through the establishment of multidisciplinary programs, appropriately trained healthcare professionals, engagement of stakeholders, research initiatives & system performance evaluation. Two international workshops resulted in published recommendations and a Framework for Action.

**Results:** Six components for AYA cancer control have been identified: improving active therapy; meeting psycho-social needs; enhancing palliative care; increasing surveillance of survivors; promoting research and associated metrics; stimulating awareness and advocacy. Working groups have been formed to address these priorities. Regional Action Partnerships have been established to focus on changes at the provincial level. New projects include oncofertility guidelines; enhanced access and enrollment in clinical trials; development of performance indicators to evaluate AYA cancer care.

**Conclusions:** The TF will develop a formal alliance of stakeholders as it transitions to a new entity with a sustainable governance structure to continue improving care for AYA with cancer and survivors of cancer.

**Keywords:** Cancer, adolescents, Taskforce
TARGETED SCREENING OF ADOLESCENTS FOR RISK FACTORS OF CARDIOVASCULAR DISEASES.

Harish Pemde*, Sakshi Jain¹, Ranjan Das², Ritu Singh³

¹Pediatrics, ²Community Medicine, ³Biochemistry, Lady Hardinge Medical College, New Delhi, India

**Background and aims:** Metabolic syndrome (MS) in adolescents is considered precursor of cardiovascular diseases and diabetes in adults. This study aimed to screen adolescents for lifestyle risk factors, and metabolic syndrome.

**Methods:** We enrolled 522 adolescents from 2 Delhi schools. We collected information about risk factors [family history of heart disease, diabetes, hypertension, sedentary lifestyle, and physical inactivity, alcohol use and smoking], body mass index and blood pressure. Fasting blood sugar and lipid profile were assessed in adolescents with one or more risk factors. MS was defined by modified NCEP ATP III and IDF criteria. Percentages and odds ratio were calculated.

**Results:** Overweight and obesity were found in 18% and 4% adolescents respectively. Prevalence of MS was 11-18% in overweight and 40-47% in obese adolescents by different criteria. MS was 2.6 to 11.7 times more common in overweight/obese adolescents. Prevalence of risk factors were higher in overweight and obese adolescents but was not statistically different from normal weight adolescents.

**Conclusions:** Clustering of cardiovascular risk factors (metabolic syndrome) was high in overweight and obese adolescents even when other risk factors were similar to normal weight adolescents. Adolescents with overweight and obesity should be screened for presence of metabolic syndrome.

**Keywords:** adolescents, metabolic syndrome, screening
Background and aims: The human body is in constant movement but it is in adolescence when reproductive maturing occurs. It is during this period that the body grows and develops the fastest in just a few years. This is the biological process called puberty.

Aims: to determine how the studied adolescents accept these changes on their bodies and what other needs could rise at this stage in their lives.

Methods: We studied 60 female and male adolescents aged 13 to 17. We used the qualitative data collection and in-depth interviews and focus groups.

Results: They dislike being fat and having acne. Their interests include communicating through cellphones, tattoos, piercings and fashion.

Conclusions: They are unhappy about some aspects of their physical appearance and they need to communicate through their cell phones, wear tattoos and follow fashion.

Image:

Keywords: adolescence, Body, communication, puberty, unhappy
Adolescent medicine

THE NUTS AND BOLTS OF BUILDING A NORTH-SOUTH ADOLESCENT HEALTH COLLABORATION: THE SUCCESSES AND CHALLENGES LEARNED ALONG THE WAY

Sabrina Kitaka\(^1\), Betsy Pfeffer\(^2\), Susan Rosenthal\(^2\)

\(^1\)Paediatrics and Child health, Makerere University College of Health Sciences, Kampala, Uganda, \(^2\)Pediatrics, Columbia University, New York, United States

**Background and aims:** Formal adolescent health training has existed in the U.S for a long time. In Uganda there was no designated training for adolescent health trainees prior to 2007, yet 55% of our population is less than 18 years. Makerere and Columbia Universities have been collaborating since 2007 to improve adolescent health care.

**Methods:** A multi method approach was used including face to face meetings, exchange visits, video conferencing and electronic exchange of information.

**Results:** Training workshops have been conducted by faculty from Columbia and Uganda. These workshops have transitioned into an annual scientific conference on Adolescent Health. The Society of Adolescent Health in Uganda (SAHU) has an active website and membership of 120. A model adolescent clinic which was started in 2013 has provided care to 780 clients. The clinic has a quality improvement program supported by Columbia University. The clinic receives support from an AAP I-CATCH grant and the Friedland Foundation.

**Conclusions:** By mobilizing the interests and support of in country paediatricians, it is possible to build an adolescent health program within resource limited countries. Expertise from partnerships with well established adolescent programs can be leveraged through multiple mechanisms. A key challenge remains sustainable funding for patient care and expansion of the collaboration.

**Keywords:** Adolescent Friendly Health Clinic
THE PREVALENCE OF INTERNET ADDICTION AND ITS ASSOCIATION WITH SELF-ESTEEM LEVELS IN FILIPINO ADOLESCENTS AGED 14 TO 18 YEARS OLD IN SELECTED PRIVATE HIGH SCHOOLS IN QUEZON CITY

Michelle Anne Noblejas-Mangubat*1, Moses de Guzman III1, Lia Ann Cruz1, Erlinda Susana Cuisia-Cruz1

1Adolescent Medicine Center, Philippine Children’s Medical Center, Quezon City, Philippines

Background and aims: Adolescents are at highest risk for excessive internet use due to multiple factors, including low self-esteem levels. The study aims to determine the prevalence of Internet Addiction and its association with self-esteem among Filipino adolescents.

Methods: This is a cross-sectional study conducted in 2 private high schools in Quezon City. Two hundred ninety students completed a questionnaire assessing their demographics, internet use and self-esteem. A modified version of the Young’s Internet Addiction Test 20 and the Rosenberg Self-Esteem Scale were used to determine the adolescents’ degree of online use and level of self-esteem. Descriptive statistics was used to summarize respondents’ demographic characteristics and to determine the prevalence of internet addiction and low self-esteem. Spearman correlation coefficient was used to determine the association between Internet Addiction and level of self-esteem.

Results: Majority of the respondents are frequent online users (49%). Forty percent are severe online users. Twenty percent have low self-esteem. Among the 117 severe online users, 31 (26%) also have low self-esteem. A very low, inverse correlation between internet addiction and self-esteem was observed.

Conclusions: Most Filipino adolescents are frequent online users. Findings suggest that Internet Addiction and self-esteem levels may have an indirect association. However, other factors associated with Adolescent Internet Addiction should also be further investigated.

Keywords: adolescents, Internet Addiction, Rosenberg Self-esteem scale, self-esteem, Young Internet Addiction Test
Adolescent medicine

TOBACCO USE AND ASSOCIATED FACTORS AMONG ADOLESCENTS ENTERING QUEBEC YOUTH PROTECTION CENTERS

Nancy Haley 1,2, Gilles Lambert1, André Gervais1, Claude Tremblay1, Élise Roy3, Jean-Yves Frappier2
1Public Health, Montreal Public Health Department, 2Pediatrics, Sainte Justine Hospital, Montreal, 3Addiction Studies and Research Program, Sherbrooke University, Longueuil, Canada

Background and aims: Every year 4000–5000 adolescents enter Québec Youth Protection Centres (YPCs). A surveillance study was conducted to describe health risk behaviours of these adolescents, including tobacco use.

Methods: In 2008–2009, adolescents aged 14–17 living in 6 Québec YPCs were recruited for the study. Data on substance use and sexual risk behaviours, and related health consequences were obtained during structured face-to-face interviews. Analyses were carried out to identify factors associated with daily tobacco use.

Results: Among 499 participants (boys: 59%; median age: boys: 16, girls: 15) 91% reported lifetime tobacco use, and 65% reported using tobacco daily in the year prior to admission. In univariate analyses, factors significantly (p<0.05) associated with daily smoking were: history of regular use (3x a week+) of alcohol (31% daily vs. 11% non-daily smokers), cannabis (78% vs. 36%) or other psychotropic drugs (43% vs. 13%) during the year prior to admission; first sexual relation.

Conclusions: Daily tobacco use is very prevalent among youth entering YPCs and is associated with problematic substance use and risky sexual behaviours. Following this study, measures were taken to develop and implement a plan to increase tobacco use screening and counseling for all youth in care and to promote smoke-free environments in YPCs.

Keywords: adolescents, substance use, tobacco use, youth protection centers
UNDERSTANDING ARFID: AN EXAMINATION OF HOSPITAL-BASED PRESENTATIONS AND OUTCOMES

Mark Norris¹, Wendy Spettigue², Nicole Hammond*³, Madeline Gray³, Noreen Rahmani³
¹Pediatrics, ²Psychiatry, CHEO, ³CHEO RI, Ottawa, Canada

Background and aims: Avoidant/Restrictive Food Intake Disorder (ARFID) is an eating disorder (ED) typified by significant weight loss (or inadequate weight gain), significant nutritional deficiency, dependence on nutritional supplements, or marked interference with psychosocial functioning. Patients with ARFID lack body image concerns. We aimed to describe characteristics of patients meeting criteria for ARFID in an ED setting and describe treatments employed and outcomes obtained.

Methods: A retrospective chart review was completed. Forty six patients were identified as meeting criteria for ARFID.

Results: Patients were 13.5 (SD = 2.5) years old with a mean body mass index (BMI) of 15.61 (SD = 2.0) and at 84.1% of a presumed healthy weight. Most patients were female (83%; n = 38) and one third (33%; n = 15) had a co-morbid anxiety disorder. Two thirds (67%, n= 31) endorsed one or more underlying eating-related fears. One third of patients (35%, n= 16) required medical admission to hospital with an average length of stay of 39.1 days (SD = 23.9). One third of cases received Family Based Therapy (33%; n = 15) and 33% (n = 15) of cases received olanzapine during treatment. At the time of last clinical encounter, only 30% (n = 14) were weight restored. Follow-up care with other sub-specialty medical clinics and mental health teams was observed in 37% (n = 17) and 24% (n = 11) of cases, respectively.

Conclusions: Our experience suggests that patients with ARFID are complex, resource-intensive and difficult to treat. Prospective research is needed to better understand factors that optimize short and long-term outcomes.

Keywords: avoidant, eating disorder, outcome, restrictive, Treatment
Adolescent medicine

UNPLANNED PREMARITAL ADOLESCENT PREGNANCY IN AN URBAN SETTING IN INDONESIA: A COMPARISON AND CONTRAST OF TWO CASES

Marsha Zaneta¹, Nitish Basant Adnani*¹, Syamsinar Harahap¹, Nyoman Bagus Donny Aryatma Mahadewa², Dicky Iskandar Nadeak³

¹Utan Panjang Subdistrict Health Centre, ²Department of Obstetrics and Gynecology, ³Department of Pediatrics, Kemayoran District Hospital, Jakarta, Indonesia

Background and aims: Approximately 16 million girls aged 15 to 19 give birth every year, corresponding to 11% of all births worldwide. In Southeast Asia, particularly Indonesia, the incidence of adolescent pregnancy is closely linked to staggering health repercussions such as unsafe abortions and increased risk of pregnancy related complications. This case series aims to address the health, social issues, and factors regarding the wellbeing of the expecting adolescent.

Methods: Two cases of unwanted adolescent pregnancy were found in Utan Panjang Subdistrict Health Center in Indonesia in December 2015. The patients were interviewed about the pregnancy, views on premarital sex, sexual education, health and psychosocial history, paternal involvement and family perception. A comparison was made between the two cases.

Results: While both the girls decided to go through with the pregnancy, one decided to marry and publicly announce her pregnancy after obtaining full parental support. She eventually gained more confidence to become a new mother. The other had a lack of support from her parents and decided to raise the child on her own. She has lower weight gain, less visits to antenatal care, and is in a considerably poor state of wellbeing.

Conclusions: Based on the two case reports, it is noted that family acceptance and paternal involvement are among the many factors affecting the wellbeing of the pregnant adolescent. The benefit and timing of sex education must be arranged to the adolescent needs. Moreover, further rigorous research is undoubtedly warranted to determine the association between these factors.

Keywords: adolescent pregnancy, premarital, unplanned
Adolescent medicine

YOUTH ADVISORY COUNCIL OF CENTRE FOR ADOLESCENT HEALTH LHMC NEW DELHI INDIA- SHARING THE EXPERIENCE
Tanu Shree¹, Harish Pemde², Pratima Sharma²
¹Medical Student, UCMS, ²Center for Adolescent Health, LHMC, New Delhi, India

Background and aims: Youth Advisory Council (YAC) helps in improving adolescent friendly health care services. This paper presents the experience of YAC with adolescent friendly health clinic (AFHC).

Methods: YAC was formulated through several focused group discussions with adolescents and medical and nursing staff at AFHC, Centre for Adolescent Health, Lady Hardinge Medical College, New Delhi India. Discussion forums and symposiums are conducted. Feedbacks of adolescents and of staff are summarised.

Results: YAC objectives are to suggest improvements in services at AFHC, to have discussion on issues relevant to adolescents, and to prepare YAC members as Youth Ambassadors and as dummy clients for practical training of medical students.

YAC has 38 members and 5 office bearers(all 10-19 years); 3 meetings and 2 symposiums (on stress management and nutrition) were organized. Timings and appointment system of AFHC were rescheduled. Number of adolescent clients attending AFHC increased. YAC members participated in photo session for training manual of India’s national program on adolescent health. Various issues are discussed on social media whatsapp group. Almost all staff and YAC members felt benefitted by participating in YAC activities.

Conclusions: YAC brings in clients’ opinions and both the client adolescents and AFHC benefit from each other and health care services to adolescents become friendlier.

Keywords: Adolescent Friendly Health Clinic, Social media, Youth Advisory Council
ANALYSIS ON CLINICAL CHARACTERISTICS OF JUVENILE SCLERODERMA IN CHINA

Jianghong Deng\textsuperscript{1}, Caifeng Li\textsuperscript{1}

\textsuperscript{1}Department of rheumatology, Beijing Children’s Hospital affiliated to Capital Medical University, Beijing, China

\textbf{Background and aims:} To describe and analyze the clinical and laboratory findings in children diagnosed with scleroderma at Beijing Children’s hospital in the last 10 years.

\textbf{Methods:} Data from children with scleroderma in Beijing Children’s hospital between January 2002 and October 2013 was collected. Quantitative data were presented as mean±SD. T test was used for comparison between two groups.

\textbf{Results:} 46 patients were enrolled. 7 patients (15\%) suffered SSc and 39 (85\%) had LS. Mean age-at-onset of LS was 5.27 years old. Male to female ratio was 1.2:1. Mean age-at-onset of SSc was 9.28 years old. All was females. The lesions found in LS were: linear scleroderma (53.8\%), mixed morphea (35.9\%), generalized morphea (7.7\%), panclerotic morphea (2.6\%). 26 patients had internal organs involved. 3 nerve system involvement was found in ECDS. Involvement associated with SSc was pulmonary, gastrointestinal mostly. Heart, nerve system, renal, eye involvement was also found. 1 girl had renal crisis. ANA were positive in 76.9\% LS patients and 100\% SSc patients. RF were positive in 6 patients (15.4\%), 5 patients had joint involvement. Anti-Scl-70 antibodies were positive in 5 (71.4\%) patients with SSc. The most common drugs used were methotrexate and prednisone.

\textbf{Conclusions:} In this study, LS is more common in children. SSc is more severe than LS. Multicenter and large sample study is needed to know the characteristics of juvenile scleroderma in China.

\textbf{Keywords:} Juvenile scleroderma, localized scleroderma, systemic scleroderma
ASSOCIATION BETWEEN A FUNCTIONAL SINGLE NUCLEOTIDE POLYMORPHISM IN THE DEFB-1 GENE AND RISK OF CHILD ASTHMA

Viktor A. Gankovskii¹, Oxana A. Svitich², Ludmila V. Gankovskaya³, Anna A. Alekseeva¹, Margarita Zaiceva³, Bella Bragvadze³, Leila S. Namazova-Baranova¹

¹Federal State Budgetary Institution "Scientific Center of Children's Health" Of the Ministry of Health of the Russian Federation, ²Molecular Immunology, I. Mechnikov's Research Institute of Vaccines and Sera, ³Immunology, Pirogov Russian National Research Medical University, Moscow, Russia

Background and aims: Bronchial asthma is the most common allergic diseases. The aim of this study is to investigate SNP (G-(20)A, C-(44)G and G(20)A) in the DEFB1 gene encoding for hBD-1 and the possible involvement of these genetic variants in the development BA.

Methods: Main group (n=25) children aged 3-7 years with diagnose of different clinical variants of bronchial asthma. The control group consisted of healthy people without comorbidities (n=70). The study included the identification of SNPs G(-20)A, C(-44)G, G(-52)A it was used the technology of real time PCR with TaqMan zonds.

Results: It was shown a significant increase in the frequency of genotype AA of G(-20)A marker and GG genotype of marker G(-44)C in gene DEFB1 (BA patients) relative to the comparison group (0,53 against 0,22 and 0,42 compared with 0.11). The character of distribution of frequencies of genotypes and alleles of the gene DEFB 1 G(-52)A in the studied groups are the similar.

Conclusions: It is necessary for understanding of pathogenesis to study the association asthma with SNP of candidate genes of innate immunity.

Keywords: None
Background and aims: To analyze the clinical characteristics of Spondyloepiphyseal Dysplasia Tarda

Methods: Eleven children with Spondyloepiphyseal Dysplasia Tarda who were admitted into our hospital from August 2004 to March 2015 were selected as research subjects. A retrospective study was done.

Results: This group included 5 males and 6 females, aged from 2 to 10 years. The main clinical manifestations include short stature (7/11), the joint symmetrical enlargement (6/11), gait abnormalities (5/11), joint pain (3/11). Symmetrical enlargement of joint was obviously, with or without limitation of movement. Flattened vertebral bodies were seen in the lateral view of the thoraco-lumbar spine in all cases. Most cases showed the characteristic of pathognomonic superior and inferior ‘humps’ involving the posterior two-thirds of the flattened vertebral bodies. Seven cases of joint X-ray revealed osteoporosis, as well as stocky bone and metaphyseal enlargement. Three cases revealed sacroiliitis. No special treatment was needed. One case with complication of sacroiliitis, was administered Voltaren because of hard pain.

Conclusions: Spondyloepiphyseal dysplasia Tarda (SEDT) is a genetically heterogeneous disorder. Disproportionate (short-trunked) short stature in a male, with the early onset of osteoarthrosis, is the common presenting feature. The radiographic manifestations of SEDL are diagnostic. There is no specific treatment apart from management of the complications of the condition.

Image:

Keywords: Osteoarthritis, Spondyloepiphyseal Dysplasia Tarda
Background and aims: Blau EB reported that an eleven family members over four generations have had granulomatous disease of the skin, eyes, and joints in 1985. The disease is transmitted as an autosomal dominant trait. Granulomatous arthritis of childhood is a chronic inflammatory disease. It is characterized by granulomatous polyarthritis, uveitis and rash. The prevalence is unknown. In total there have been reported in around 40 pedigrees. There was no case report in China.

Methods: 31 BS cases hospitalized in Beijing Children’s Hospital from 2006 to 2015 were analyzed about the clinical features, treatments and prognoses of the patients, and CARD15 gene mutation of the patients and their parents were studied.

Results: 31 Blau Syndrome patients were diagnosed. Four case had family history, but not in others. All of the patients had typical Histopathology changes. We studied CARD15 gene mutation in all cases and their parents and 26 cases had mutations. The gene locus R334W and R334Q had reported in some other countries. E383D, R471C and R587C are three novel mutations.

In the treatment, all patients took NSAIDS, steroid and MTX. 16 cases used anti-TNF agent, since they had severe organ damage. All of the patients got very good effects.

Conclusions: The patients had long courses, some of them were misdiagnosed many years. After diagnosed as BS and got treatment, they are improvement. There are Blau Syndrome cases in China. There are novel mutations in Chinese patients.

Keywords: Blau syndrome, CARD15, clinical phenotype
COMPARISON OF CLINICAL MANIFESTATIONS IN PEDIATRIC AND ADULT UVEITIS PATIENTS WITH AND WITHOUT RHEUMATIC DISEASES

Kuo-Wei Yeh¹, Shi-Ting Tseng¹, Yih-Shiou Hwang², Tsung-Chieh Yao¹, Jing-Long Huang¹

¹Pediatrics, ²Ophthalmology, Chang Gung Memorial Hospital, Taoyuan, Taiwan, China

Background and aims: Uveitis could be a manifestation of rheumatic diseases (RD). We investigate the clinical features of RD-related uveitis, and compare their characteristics in patients with or without RD and between children and adult with RD.

Methods: Total 823 patients with uveitis diagnosed by ophthalmologist from Jan-2009 to Jun-2014 were enrolled in this study. Their medical records were systematically and retrospectively reviewed.

Results: There were 123(14.8%) patients with uveitis accompanied RD. It was most common in ankylosing spondylitis(5.8%), followed by Behçet's disease(2.8%), and juvenile idiopathic arthritis (1.1%). The frequency of pediatric uveitis was 6.5% for all causes of uveitis, and RD-related uveitis was more common in children than in adult patients (31.5% vs.13.6%; p<0.05). Sixteen patients (13%) were children who first presented with uveitis. Compared to patients without RD, those with RD-related uveitis had a lower mean age at onset (35.1±15.8 years vs. 44.0±17.5 yrs), a higher incidence of anterior uveitis (69.0% vs. 46.3%), a higher incidence of recurrence (26.8% vs. 14.1%), more frequent bilateral involvement (53.7% vs. 38.8%), and more frequent posterior synechiae (17.2% vs. 9.4%).

Conclusions: Patients with RD-related uveitis had a higher recurrent rate and the more frequent posterior synechiae than patients without RD.

Keywords: epidemiology, rheumatic disease, uveitis
COW’S MILK PROTEIN ALLERGY: NEW PERSPECTIVE IN PREDICTING OF FOOD TOLERANCE IN EARLY AGE CHILDREN

Maria Petrovskaya*, L Namazova-Baranova 1,2, S Makarova 1,2, I. Zubkova 1

1 Federal State Autonomous Institution, "Scientific Center of Children's Health" of the Ministry of Health of the Russian Federation, 2 I.M. Sechenov First Moscow State Medical University, Moscow, Russia

Background and aims:
BACKGROUND. Cow’s milk protein allergy (CMPA) is the greatest problem in podiatry. Whereas minimum length of elimination diet is determined, there are still not determined individual criteria of adequate lengths of it. OBJECTIVE: To determine and evaluate immunologic markers of developing tolerance to CMP in early age children with CMPA.

Methods: METHODS. The study included children 152 with CMPA (1-18 months); and control group – 117 healthy children. Children with CMPA underwent clinical and laboratory examination twice (before 6-12 months of elimination diet and after reintroducing CMP), that included measurements of sIgE and sIgG4 to cow’s milk and its fractionss. Blood samples of control group were studied once for measurement of serum sIgG4.

Results: RESULTS. Serum sIgG4 before elimination diet were detected in 65% of patients with CMPA and in 86% of patients of control group, p < 0,05. 76 children (50,3%) with CMPA became tolerated to CMP after 6-12 months of elimination diet, that was significally associated with high (3+) class of concentration of sIgG4 to CMP before elimination diet, increasing of sIgG4 to high class of concentration in dynamics in patients with sIgE ≤0,7 kUA/l to CMP; decreasing of sIgE to CMP during elimination diet versus group of children, who had not become tolerated (p < 0,05).

Conclusions: CONCLUSION. High class of concentration of sIgG4 to CMP before elimination diet can be used as a favorable predictive marker of tolerance to CMP in early age children. sIgG4 can’t be used in diagnosis of food allergy.

Keywords: None
EXPERIENCE IN APPLICATION OF OMALIZUMAB IN CHILDREN WITH SEVERE UNCONTROLLABLE BRONCHIAL ASTHMA

Lyubov Rychkova¹ , Natalya Luzgina¹ , Tamara Mandzyak¹

¹Scientific Centre for Family Health and Human Reproduction Problems, Irkutsk, Russia

**Background and aims:** Anti-IgE-therapy has been used to treat children with severe bronchial asthma (BA) since 2001.

**Methods:** Total of 13 children received anti-IgE-therapy at our clinic since 2008 to 2015. All patients were diagnosed with atopic severe BA with uncontrollable course. Baseline level of IgE ranged at 110-678 IU/ml. All patients were receiving combined therapy with high dose equivalent of fluticasone. The children got injections of the Omalizumab 1 time per 2 weeks or 1 time per 4 weeks depends on baseline level of IgE and child’s weight.

**Results:** During the therapy frequency of severe symptoms declined in all patients, being accompanied by improvement of respiration function: increase of forced expiratory volume (%) from 82.0±15.2 to 91.0±25.3, increase of peak exhalation speed (%) from 78.2±24.5 to 81.0±14.8. All patients began to experience smaller need for B-agonists, frequency of daytime asthmatic attack declined, exercise tolerance improved. Disease management assessment increased from 14.6±1.4 до 18.6±1.1. None of the children experienced any side effects to injections.

**Conclusions:** These data demonstrate the prospects for treatment of patients in the group most complicated for curing. However, taking into account economic features of anti-IgE-therapy, a very stringent patient selection should be in place for such therapy, and it may only be administered in case of severe uncontrollable course of the disease.

**Keywords:** bronchial asthma, Omalizumab
FARBER DISEASE: IMPLICATIONS OF ANTI-INFLAMMATORY TREATMENT

John Mitchell¹, Alexander Solyom², Balahan Makay³, Nur Aslan³, Ezgi Deniz Batu⁴, Seza Ozen⁴, Boris Hügle⁵, Edward Schuchman⁶, Bo Magnusson⁷

¹Paediatrics, McGill university Health Centre, Montreal, Canada, ²Plexcera Therapeutics LLC, New York, United States, ³Dokuz Eylul University Hospital, Izmir, ⁴Hacettepe University Faculty of Medicine, Ankara, Turkey, ⁵German Center for Pediatric and Adolescent Rheumatology, Garmisch-Partenkirchen, Germany, ⁶Genetics, Mt. Sinai School of Medicine, New York, United States, ⁷Karolinska University Hospital, Stockholm, Sweden

Background and aims: Farber disease (Farber lipogranulomatosis) is a rare lysosomal storage disorder resulting from the inherited deficiency of acid ceramidase. Farber disease has a heterogeneous presentation ranging from a severe phenotype with respiratory and CNS involvement with a life expectancy of less than 2 years, to a moderate phenotype, which generally includes joint swelling, hoarse voice, contractures and pain. The clinical similarity between the moderate Farber phenotype and polyarticular juvenile idiopathic arthritis (JIA) can lead to misdiagnosis. Currently, Farber disease can be treated by hematopoietic stem cell transplantation, which has shown variable results and carries a severe burden for the patients. The fact that ceramide induces macrophage-driven inflammation leading to local and systemic symptoms, inspired the use of anti-inflammatory agents as symptomatic treatments for Farber.

Methods: Here we present 5 patients with Farber disease, who demonstrated a significant clinical response to tocilizumab.

Results: We describe changes in standard inflammatory markers and improvement of symptoms such as pain and physical impairment. The degree to which each patient responded was variable, and in no case has the disease ceased to progress.

Conclusions: The implications of these findings are threefold: anti-inflammatory therapy is indicated in Farber disease, anti-inflammatory therapies should be considered to prevent tissue damage and relieve symptoms in diseases where inflammation plays a role, and that the use of such therapies in pediatric rheumatology may lead to a delayed or missed diagnosis of Farber.

Keywords: Acid ceramidase, Farber lipogranulomatosis, Interleukin 6, Tocilizumab
Background and aims: To investigate the proliferative lesions of mesangial cell in the pathogenetic progress of lupus nephritis fibrosis.

Methods: Control mice C57BL/6 and model miceNZBW1F1 were studied. Kidneys were collected for HE stain and Masson stain in the 8 week, 12 week and 16 week. The proliferation of glomerular cells in mice was assessed by BrdU incorporation light microscopy. The expression of NOX4 protein was confirmed by Western blotting.

Results: HE and Masson staining showed that model mice began to develop interstitial fibrosis, and continue increasing on 12w and 16w. The numbers of mesangial cell were increased on 8w, and became obvious on 12w and 16w. The expression of NOX4 protein was increased with the progress of lupus nephritis fibrosis.

Conclusions: Glomerular mesangial cell and ROS play an role in the pathogenetic progress of Lupus nephritis fibrosis.

Keywords: None
GUT MICROBIOTA AND TREATMENT OF PEDIATRIC ATOPIC DERMATITIS WITH PROBIOTIC

Galina Smirnova¹, Anatoliy Korsunskiy²

¹Department of Pediatrics and pediatric infectious diseases, ²First Moscow state medical University named after I.M. Sechenov, Moscow, Russia

Background and aims: The human microbiota plays a fundamental role in the pathogenesis of atopic dermatitis (AD) in children. This is the basis for the treatment of AD with probiotics

Methods: Were examined in 52 children with AD and impaired gut microbiota, the average age of child 3 years allergological and bacteriological examination. Patients were randomized into 2 groups. Patients of the 1st group (n=27) conducted a comprehensive therapy of AD with the use of a probiotic containing lactobacilli Lactobacillus reuteri Protectis, patients of the 2nd group (n= 25) was the standard treatment for AD without probiotic.

Results: All patients with AD revealed violations of the microbiota of various intensities. The severity of AD was consistent with the disturbances of the intestinal microbiota, which were maximum in severe AD (39%) with the appearance of the genera Staphylococcus, Klebsiella, Proteus and fungi of the genus Candida. On the background of complex treatment of patients of the 1st group with an obligatory correction of microbiota through rehabilitation of conditionally pathogenic flora of the intestinal antiseptics, with the subsequent application of a probiotic containing lactobacilli Lactobacillus reuteri Protectis, was established a good therapeutic effect of the use of a probiotic.

Conclusions: probiotic containing lactobacilli Lactobacillus reuteri Protectis, may be effective at the treatment of AD for young infants

Keywords: None
PREVALENCE OF RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE IN SCHOOL CHILDREN OF TRIPURA IN NORTH-EAST INDIA

Nilratan Majumder¹, Rajesh Kumar²

¹Department of Paediatrics, Agartala Govt. Medical College, Agartala, ²Department of Community and Family Medicine, PGI, Chandigarh, Chandigarh, India

Background and aims: Rheumatic fever (RF) and rheumatic heart diseases (RHD) is a public health concern in many developing countries and estimation of it’s burden is necessary towards planning a national program for RF/RHD. Aims: To determine prevalence of RF/RHD and profile of beta-haemolytic streptococci among school children in Tripura.

Methods: Throat swab of 2876 children (5-15 years) were collected for culture and emm typing from 66 schools and 7 registries located in both urban and rural area through active and passive surveillance during Nov’2011 to Oct’2013.

Results: Out of 2661 children registred via active surveillance, no cases of RF/RHD were found. 28 children registered at OPD/IPD were having RF/RHD (prevalence 0.97%). Out of 28 cases, 19 (67.85%) were from rural area, with predominant presentation being arthritis and carditis in 21 (75%) and 6 (21.43%) cases respectively. 2599 (90.37%) cultures resulted in non-haemolytic, 224 (7.79%) alpha-haemolytic, 7 (0.24%) group G beta-haemolytic, 5 (0.17%) group C beta-haemolytic and remaining 41 (1.43%) resulted in no growth. None of the cultures showed group A beta-haemolytic growth.

Conclusions: Group A streptococcus RF/RHD seems to be declining in Tripura; currently other beta haemolytic streptococci are mainly responsible for RF/RHD especially in rural areas of north-east India.

Keywords: Rheumatic Fever, Rheumatic Heart Disease, School children
SELF AND CLINICAL ASSESSED DISEASE SEVERITY IN CHILDHOOD ECZEMA

Jeng Sum Charmaine Kung¹, Kam Lun Hon²
¹Department of Paediatrics, School of Medicine, ²Department of Paediatrics, School of Medicine, Chinese University of Hong Kong, Hong Kong, Hong Kong, China

Background and aims: Self-assessed surveys are commonly used in clinical research. The aim of this study is to investigate how different is patient/parent assessed disease severity (NESS) to clinical assessment (SCORAD), and association to patient’s quality of life.

Methods: Self-assessment survey of Nottingham Eczema Severity Score (NESS) and Children Dermatology Life Quality Index (CDLQI) were used. Scoring Atopic Dermatitis (SCORAD) was assessed by the clinician. NESS and SCORAD scores were classified as Mild, Moderate and Severe, and evaluated by SPSS.

Results: Clinical scores of 114 patients (mean age: 12.7±4.5 years; 58.3% male) with eczema were evaluated. In the NESS scale, eczema severity was reported as 4% mild; 27% moderate; 68% severe. In the SCORAD scale, eczema severity was reported as 4% mild; 58% moderate; 37% severe. The difference between NESS and SCORAD were 53% no difference; 39% higher and 8% lower. Higher NESS score was correlated with patient exaggerating disease severity (rho: 0.58; p<0.01). Higher NESS score also shown a stronger correlation with poorer quality of life (rho: 0.54; p<0.01), comparing to SCORAD (rho: 0.36; p<0.01).

Conclusions: NESS, CDLQI and SCORAD are common clinical parameters used to measure eczema severity. Patient/parent tended to assess their child with more severe disease. Paediatric patient who believe himself with severe disease was associated with poorer quality of life. Clinicians should be aware of the difference to communicate with the patient effectively.

Image:
Table 1. Comparison of NESS and SCORAD eczema severity assessment

<table>
<thead>
<tr>
<th></th>
<th>NESS(%)</th>
<th>SCORAD(%)</th>
<th>Difference with SCORAD (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Less</td>
<td>Nil</td>
</tr>
<tr>
<td>Severe</td>
<td>78(68.4)</td>
<td>42(36.8)</td>
<td>0</td>
</tr>
<tr>
<td>Moderate</td>
<td>31(27.2)</td>
<td>67(58.8)</td>
<td>7(22.6)</td>
</tr>
<tr>
<td>Mild</td>
<td>5(4.4)</td>
<td>5(4.4)</td>
<td>2(4.0)</td>
</tr>
</tbody>
</table>

**Keywords**: Atopic dermatitis, Eczema
THE INFORMATION DATABASE OF CLINICAL CASES TO IMPLEMENT THE DYNAMIC OBSERVATION FOR A LONG TIME

Leyla Namazova-Baranova¹,², Elena Vishneva¹, Vladimir Smirnov¹, Anna Alekseeva¹,³, Elena Dobrynina¹, Kamilla Efendiyeva¹,³, Julia Levina¹,³, Lilia Selimzianova¹,³, Natalia Voznesenskaya¹, Konstantin Volkov¹, Vladimir Barannik¹, Elena Promyslova¹

¹Scientific Center of Children’s Health, ²The Russian National Research Medical University named after N.I. Pirogov, ³The First Moscow State Medical University named after I.M. Sechenov, Moscow, Russia

Background and aims: Due to heterogeneity of clinical symptoms in different groups of patients with bronchial asthma (BA), to assess the efficacy and safety of treatment of severe persistent uncontrolled asthma in the real clinical practice, the best practice is to use a long-term clinical monitoring. Aim: to create a patient registry for children and adolescents with severe persistent uncontrolled BA.

Methods: By experts of the center in the result of the system work the software was created. It was the shell for management of database of clinical cases – patient registry of children with uncontrolled severe persistent BA, who received Omalizumab as addition to basis therapy.

Results: The database included the data of 93 children (67.7% boys) from 6 to 17 years 11 months (mean age 14 years) with severe persistent uncontrolled BA, who received / receive (49 patients, 73.5% boys) bioengineered treatment (duration of treatment from 1 till 70 mo). During the analyzed period of treatment the safety of the Omalizumab was confirmed: more than 7095 injections were conducted. Local adverse events were registered at a frequency of 1-1,1% and were manifested as a light redness, induration and light edema, were realized in 1-1.5 days after administration. Local allergic reactions such as rash were observed in two patients and were stopped by antihistamines.

Conclusions: The patient registry will help in solving the problems as epidemiological, and in order to achieve optimal endpoints for monitoring and analysis of the efficacy and safety of innovative high-tech medications and approaches which have been used previously for a long time.

Keywords: bronchial asthma, children, database, patient registry
THE OPPORTUNITIES OF INTERNET TECHNOLOGY AND TELEMEDICINE IN INTERACTION BETWEEN DOCTOR AND PATIENT

Leyla Namazova-Baranova¹,², Elena Vishneva¹, Vladimir Smirnov¹, Anna Alekseeva¹,³, Elena Dobrynina¹, Kamilla Efendiyeva¹,³, Julia Levina¹,³, Lilia Selimzianova¹,³, Natalia Voznesenskaya¹, Konstantin Volkov¹, Vladimir Barannik¹, Elena Promyslova¹

¹Scientific Center of Children’s Health, ²The Russian National Research Medical University named after N.I. Pirogov, ³The First Moscow State Medical University named after I.M. Sechenov, Moscow, Russia

Background and aims: The use of remote medical monitoring technologies for assessing of adherence is absent completely or very limited. The aim of study was to create a new system of telecommunication interaction between doctor and patient.

Methods: The study was carried out to create a web portal. The software project - shell management website with two interfaces: for professionals and patients was developed.

Results: 20 children with severe atopic persistent uncontrolled BA (68%; mean age 14; basic therapy 900 mcg fluticasone in combination with long-acting β₂-agonist and Omalizumab, the average dose 450mg/4w) were included in the project and had received the personal individual access (unique login/password). The personal page allows patient to type in a synchronous/asynchronous mode indicators of peak flow, symptoms, using of basic therapy and rescue medication in a special tables, the level of asthma control (ACT-test), and remotely to ask a question to specialist. Patients with severe BA exacerbations who were in the intensive care unit had issued devices to determine SpO₂ (pulsoximeter) to exclude life-threatening conditions. The specialist interface (after individual log/pass) contains information about each patient to evaluate remotely in a synchronous/asynchronous mode the patient condition, therapy adherence and control of BA.

Conclusions: The results of using of this web portal show an increase of adherence to prescribed treatment, an improving of asthma control (mean 48%), a reduction in the incidence of exacerbations (mean 75%), that confirms the clinical and economic feasibility of using internet technologies.

Keywords: adherence, bronchial asthma, telemedicine
THE PATTERN OF JUVENILE IDIOPATHIC ARTHRITIS IN A SINGLE TERTIARY CENTER IN SAUDI ARABIA

Mohammad Alhemairi¹,², Mohammed Ahmed Muzaffer*²

¹PEDIATRICS, Rabigh General Hospital, ²pediatric rheumatology, King Abdul AZIZ UNIVERSITY Hospital, jeddah, Saudi Arabia

Background and aims: Aim is to describe the demographic, clinical, laboratory characters and treatment of Juvenile Idiopathic Arthritis (JIA) patients following in Pediatric Rheumatology clinic in a Single Tertiary center, Saudi Arabia.

Methods: Records of all patients followed in pediatric rheumatology clinic from Jan 2007 to Jan 2015 were retrospectively reviewed. Data were collected about demographic, clinical, laboratory features and the treatment used.

Results: Total was 85, 3 excluded due to insufficient data. Of remaining; Males; 31(37.8%), Mean age of JIA onset was 7.1±3.6 yrs. Mean duration of follow up: 2.6±1.6 yrs. Systemic onset JIA was the most common (36.5%), followed by polyarticular (29.2%) then oligoarticular in 28.04%. Large joints were involved in 76(92.6%) and small joints in 30(36.6%). Most common extra articular manifestation was fever in 34(41.4%), all SoJIA cases had fever; Uveitis in 7(8.53%) among all patients and in 5(21.7%) of oligoarticular. Anemia (Hb<11g/dl) in 49(59.75%) followed by high ESR in 45(54.8%) and leukocytosis and thrombocytosis in 33(40.24%). Positive ANA in 30(36.58%) with highest frequency in oligoarticular, 12(52.17%) and 9(10.97%) required NSAIDs only, 6(7.31%) required NSAIDs and IAC only while 19(23.17%) required NSAIDs, Methotrexate, steroids and biologics.

Conclusions: SoJIA is the most common. A population based rather than a single center based study will give more details about JIA characters in Saudi Arabia.
Keywords: None
ALLERGY, IMMUNOLOGY AND RHUMATOLGY

THE ROLE OF 5-METHOXYTRYPTOPHAN IN PEDIATRIC LUPUS NEPHRITIS: A RETROSPECTIVE COHORT STUDY

Jing-Long Huang, Ting-Chun Lin, Cheng-Chin Kuo, Ming-Ling Kuo, Chao-Yi Wu, Kuo-Wei Yeh

1Pediatrics, Chang Gung Memorial Hospital, 2School of Medicine, Chang Gung University, Taoyuan, 3Institute of Cellular and System Medicine, National Health Research Institutes, Miaoli, 4Graduate Institute of Biomedical Sciences, Chang Gung University, Taoyuan, Taiwan, China

Background and aims: The 5-methoxytryptophan (5-MTP) was shown to have immunosuppressive property. The study aim denotes the correlation between serum 5-MTP level and the systemic lupus erythematosus (SLE) disease activity and severity of lupus nephritis (LN).

Methods: Total 110 children with SLE were enrolled. There were 77 patients (70%) presented with active LN during disease onset. All patients with active LN underwent renal biopsy. Before any immunosuppressive medications were administered, serum samples were collected and after 6 months of treatment.

Results: It was revealed that patients with active LN had significantly higher 5-MTP levels as compared to patients with no LN (0.982±0.67 vs. 0.72±0.61, P=0.045). 5-MTP level was significant lowered after treatment in patient with active LN, compared with the levels before treatment (1.02±0.71 vs. 0.81±0.60, P=0.048). Patients who reached complete remission had significantly higher initial serum 5-MTP levels than that in patients with no remission (1.24±0.78 vs. 0.85±0.56, P=0.049).

Conclusions: This study showed the role of 5-MTP in the disease severity of LN, and revealed its potential as a favorable prognostic biomarker of pediatric LN.

Keywords: 5-methoxytryptophan, lupus nephritis, systemic lupus erythematosus
THE USES OF MACROLIDES IN ASTHMA TREATMENT
Joy Tan\textsuperscript{1}, Avril Carey\textsuperscript{1,2}
\textsuperscript{1}Children University Hospital, Temple Street, \textsuperscript{2}Beaumont School, Dublin, Ireland

\textbf{Background and aims:} Childhood asthma is an intricate multifarious disease. Genetics, epigenetics, environment, family history and co-morbidities are crucial determining factors for this complex immune regulation. Macrolides have antibacteria, immunomodulatory and possible antiviral properties. Their use is favourable in various chronic respiratory disorders such as cystic fibrosis, respiratory tract infection and even asthma suggesting its usage in treatment of asthma.

\textbf{Methods:} A literature search was done. Over 169 literature were found to look at the immunomodulatory role of macrolides in asthma. Only 45 paper were used in this review.

\textbf{Results:} The use of macrolides in chronic asthma, acute exacerbation or as an adjunct therapy is disputable. Childhood asthma is heterogeneous with diverse phenotypes and various underlying triggers and pathophysiology. This might justify the disputable outcome from clinical trials in which asthma was oversimplified.

Efficacy of macrolides is not pictured in all patients with asthma. With the anti-inflammatory role and immunomodulatory properties, it possible that it might be a therapeutic option in phenotype- targeted therapy in severe asthma.

\textbf{Conclusions:} Current evidences suggest that the role of macrolides in asthma is debatable. Future genomic and proteomic studies might define macrolide- asthma-responsive subgroup exists and modification of macrolide structure possibly develop novel macrolides with targeted properties for the treatment of asthma.

\textbf{Keywords:} None
AN AUDIT OF SURGICAL INTERVENTIONS IN CHILDREN WITH STRUCTURAL HEART DEFECTS IN SOUTH WESTERN NIGERIA

Bosede Adebayo¹, Oluwatoyin Ogunkunle²

¹Paediatrics, University of Ibadan and University College Hospital, ²Paediatrics, University of Ibadan and University College Hospital, Ibadan, Ibadan, Nigeria

Background and aims: Congenital heart diseases are a major contributor to paediatric morbidity and mortality in sub-Saharan Africa. Availability of facilities for prompt intervention is the cornerstone of ameliorating the burden, but is limited in Nigeria. Medical tourism occurs, but there is paucity of data on its benefit. This study was conducted to examine the trend of surgical intervention among children with congenital heart defects in southwestern Nigeria.

Methods: We conducted a 2-year review (January 2014 – December, 2015) of medical records of 344 children requiring interventions, seen in the Children’s Outpatient Department of the University College Hospital, Ibadan, Nigeria. Information obtained included socio-demographics, diagnoses, intervention and outcome of treatment. Data were analysed using descriptive statistics and Chi-square to test association of categorical variables at p=0.05.

Results: The median age of the children was 18 (1-196) months. M:F ratio was 1.3:1. Most (73.1%) had acyanotic congenital heart disease, ventricular septal defect constituting 30%. One-fifth (20.7%) had chromosomal abnormalities, mostly (74%) Down syndrome. Forty five (13.6%) underwent surgical interventions, 14 (4.2%) in Nigeria. Twelve (3.5%) died, two of whom had interventions in India. Undergoing intervention and the location of surgery were not significantly associated with mortality (p >0.05).

Conclusions: Access to interventions outside Nigeria is extremely limited; accessing it had no effect on mortality. Better funding, established centres and skilled personnel are needed in Nigeria for definitive cardiac intervention.

Keywords: congenital heart disease, intervention, Nigeria
ATYPICAL MYOCARDIAL INFARCTION IN A CHILD WITH KAWASAKI DISEASE

Valentina Lu
tanina*1, Nato Vashakmadze1, Nataliya Berezneva1, Grigoriy Revunenko1, Vladimir Barskiy1, Leyla Namazova-Baranova1

1Scientific Research Institute of Pediatrics, Scientific Center of Children's Health, Moscow, Russia

Background and aims: An atypical form of AMI was observed in a child with Kawasaki disease.

Methods: A child M. at 2y 7m fell acutely ill: fever, cough, rash, cheilitis, scleritis, knee pain, and abdominal pain. He received antibiotic therapy (Amoxicillin), hospitalized (day 14) for acute appendicitis, but diagnosed with Kawasaki disease.

ECG: no pathology; echocardiography: coronariitis; lab tests: leukocytosis, thrombocytosis, anemia, accelerated ESR, increased levels of CRP. Treatment: human immunoglobulin, ASA. The fever stopped on the 2nd day of the therapy.

No coronary artery pathology before discharge (day 21), ASA treatment was negligently interrupted.

Due to a sudden acute dyspnea, hospitalized for laryngeal stenosis (day 42). Felt relief after hormone treatment.

ECG (day 64) showed signs of septal anterior, apical, lateral wall of LV myocardial infarction.

Echocardiography: LV dilatation, decrease of LVEF, pericardial effusion; no coronary artery aneurysm.

Myocardial scintigraphy: a large LV perfusion defect.

MRI: LV aneurysm, LV fibrosis.

Cardiac catheterization, coronary angiography: no coronary artery pathology; LV aneurysm.

Results: An atypical form of AMI was misinterpreted as laryngeal stenosis in a child with Kawasaki disease without antiplatelet therapy. Current treatment includes ACE inhibitors, B-blockers, and antiplatelet therapy.

Conclusions: Even with no coronary artery aneurysms after 4–8 weeks, children with Kawasaki disease need cardiac investigation in case of acute conditions similar to atypical MI.

Keywords: Kawasaki disease, Myocardial infarction
BODY MASS INDEX AND BLOOD PRESSURE CORRELATE IN NURSERY SCHOOL CHILDREN IN SOUTHERN NIGERIA

Petronila Tabansi¹, Ifeoma ANOCHIE², Kelechi ONYEMKPA³, Barbara OTAIGBE²
¹PEDIATRICS AND CHILD HEALTH, ²PEDIATRICS, UNIVERSITY OF PORT HARCOURT, PORT HARCOURT, ³PEDIATRICS, GENERAL HOSPITAL, ABUJA, Nigeria

Background and aims: Blood pressure (BP) is an important indicator of health in children. The relationship between body mass index (BMI) and BP is well established; and BMI has been shown to maintain an independent relationship with BP even after controlling for other variables that characterize individuals. High BMI significantly increases the risk of hypertension. Comparative epidemiological studies that show normal standard reference values of BP for age, sex, and BMI is lacking in Nigeria thus necessitating this study.

Methods: A Multi-staged sampling technique was used to select 710 nursery school children from 13 primary schools. Bio-data was obtained; Height and weight measurement were taken and BMI calculated -Weight (kg)/height (m²). BP was subsequently measure using a mercury sphygmomanometer.

Results: There were 710 pupils 365(51.4%) males and 345(48.6%) females. Mean systolic BP was 93.2±10.6mmHg; while mean diastolic BP was 58.8±8.0mmHg. Seventy-seven pupils (10.9%) were hypertensive. Mean BMI was 15.0±1.8 kg/m². There is a positive linear relationship between systolic and diastolic BP and BMI (correlation coefficient r=0.03). Obese pupils had significantly higher BP rates (25%). BMI and height were significant predictors of diastolic BP(p<0.001).

Conclusions: BMI and BP had a positive linear correlation in the study population.

Keywords: BLOOD PRESSURE, BODY MASS INDEX, NURSERY SCHOOL CHILDREN, SOUTHERN NIGERIA
Background and aims: Very long-chain acyl-coenzyme A dehydrogenase deficiency (VLCADD) is a rare disorder of fatty acid metabolism associated with multi-organ failure, cardiomyopathy and metabolic decompensation. With early diagnosis now achieved through newborn screening (NBS), treatment can be initiated before the onset of symptoms to prevent or reverse clinical deterioration. We sought to characterize cardiomyopathy and arrhythmias in patients with VLCADD in the Maritime Provinces and any association with residual enzyme activity.

Methods: All patients in the Maritime Provinces diagnosed with VLCADD were included (N=18). Mutation type and residual enzyme activity was identified using functional enzyme assay. Previous echocardiogram (ECHO; N=42), electrocardiogram (ECG; N=43) and clinic reports were analyzed to document the presence or absence of cardiomyopathy and any documented arrhythmias or symptomatic events.

Results: Residual enzyme activity ranged from 0-19%. Seventeen of 18 patients had an ECHO and ECG soon after diagnosis, with no significant findings. Five patients experienced transient symptoms (hypoglycemia and/or myopathy) with no cardiac sequelae. One patient (with 0% enzyme activity) was diagnosed with VLCADD and cardiomyopathy on autopsy before VLCADD screening was added to NBS.

Conclusions: With early diagnosis by NBS and necessary treatment, patients with VLCADD in the Maritime provinces did not develop cardiomyopathy or symptomatic arrhythmias. Patients with residual enzyme activity as low as 4% experienced no cardiac involvement identified through frequent cardiology clinic visit, ECHOs, and ECGs.

Keywords: Arrhythmia, Cardiomyopathy, Newborn Screening, VLCADD
CHANGES IN FUNCTIONAL CLASSIFICATION OF HEART FAILURE (FCHF) AFTER HEALTH CARE TRANSITION (HCT) TO ADULT CONGENITAL HEART DISEASE (CHD) CLINICS

C Wiemann1, D Moodie2, D Penny2, A Hergenroeder1, B Sanchez1, J Head1, L Moore3

1Pediatrics, 2Pediatric Cardiology, Baylor College of Medicine, 3Pediatric Cardiology, Texas Children’s Hospital, Houston, United States

Background and aims: To evaluate changes in FCHF between last pediatric and first adult CHD clinic visits after a HCT transition planning tool (TPT) was implemented at a children’s hospital.

Methods: Intervention patients (IP) (n=36;16-25 yrs) were to transition to the Adult CHD Clinic within 18 mos. of starting the TPT. Historical control patients (CP) (n=28;≥18 yrs) left the Pediatric CHD Clinic prior to TPT availability. Patients had moderate-to-severe CHD and were cognitively normal. Providers used the TPT to address gaps in patient HCT knowledge. Functional status was determined using the New York Heart Association FCHF scale. Chi-square analysis and Student’s t-tests were used.

Results: 18/36 IPs have transitioned to adult care. IPs were younger than CPs at last pediatric visit (18.7±1.3 vs. 20.3±1.6; p<0.05), had a shorter mean duration of time between Pediatric and Adult CHD Clinic visits (12.0±8.5 vs. 25.8±19.2; p<0.05), and were less likely to have FCHF deterioration by their 1st adult visit (0% vs. 25%; p<0.05).

Conclusions: The introduction of a TPT into a pediatric cardiology clinic may have reduced the duration of time between pediatric and adult clinic visits as well as the likelihood of FCHF deterioration.

Keywords: Health Care Transition
CLINICAL COURSE OF CARDIOMYOPATHY IN CHILDREN DEPENDING ON THE HEALTH DETERMINANTS

Dilorom Akhmedova¹, Nilufar Akhmedova², Alima Matkarimova¹
¹Republican Specialized Research Medical Center of Pediatrics, ²Tashkent pediatric medical institute, Tashkent, Uzbekistan

Background and aims: Aims of the study was to examine the clinical course of cardiomyopathy in children, depending on health determinants

Methods: The study involved 46 children with cardiomyopathy aged 3 to 16 years, residents of Tashkent and Nukus cities. Clinical-anamnestic, instrumental studies and laboratory tests were performed

Results: The study has shown that the disease was more common in boys (60.9%) and in children whose parents were over 35 years of age (84.5%). Maternal history indicated premature births, stillbirths, miscarriages in early pregnancy, both in children of Tashkent and Nukus cities. Among children with cardiomyopathies the following concomitant diseases prevailed: anemia (86.9%), community-acquired pneumonia (45.7%), chronic pyelonephritis (4.3%), chronic tonsillitis (26%), bronchitis (2.2%) and diffuse goiter (2.2%). The most serious diseases such as viral hepatitis (4.4%), hemorrhagic vasculitis (2.2%), mumps (2.2%) were found in children living in Nukus, while only frequent acute respiratory infections were noted in children of Tashkent. The clinical picture of cardiomyopathy was more pronounced in children living in Nukus

Conclusions: The severity of cardiomyopathy clinical course depended on the form and duration of the disease, as well as on such factors as maternal health, parental age, sex of a child, concomitant diseases and place of residence

Keywords: None
HIGH-DOSE ASPIRIN IS ASSOCIATED WITH ANEMIA AND DOSE NOT AFFECT THE OUTCOME IN KAWASAKI DISEASE

Ying-Hsien Huang\(^1\), Kai-Sheng Hsieh\(^2\) on behalf of Kawasaki Disease Center, Kaohsiung Chang Gung Memorial Hospital, Taiwan., Ho-Chang Kuo\(^3\)

\(^1\)Department of Pediatrics and Kawasaki Disease Center, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, \(^2\)Pediatrics and Kawasaki Disease Center, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, \(^3\)Department of Pediatrics and Kawasaki Disease Center, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan, China

**Background and aims:** Kawasaki disease (KD) is known as systemic vasculitis in childhood. However, the role of high-dose aspirin in KD is still unclear. The aim of this study was conducted to compare the treatment efficacy of aspirin.

**Methods:** KD patients were retrospectively analyzed. All patients were initially treated with IVIG. In group 1, high-dose aspirin was prescribed (> 30 mg/kg/day) until the fever subsided, and then low-dose aspirin (3-5 mg/kg/day) was prescribed thereafter. In group 2, low-dose aspirin was prescribed without high-dose aspirin.

**Results:** A total of 851 KD patients (group 1, N=305, group 2, N=546) were enrolled in this study. There were no significant differences between group 1 and group 2 in terms of gender IVIG resistance rate, CAL formation, and duration of hospitalization. There were also initially no significant differences in WBC, Hb, platelet, and CRP before IVIG treatment. After IVIG treatment, group 1 had significantly lower Hb (p=0.006), higher CRP (p<0.001) and smaller decrease in CRP level (p=0.012). Furthermore, there was also a higher hepcidin level and a delayed decrease in hepcidin level after receiving IVIG in group 1 (p=0.04 and 0.02, respectively).

**Conclusions:** These results provide evidence that high-dose aspirin in the acute phase of KD may be harmful with regards to inflammation and it does not appear to improve treatment outcomes.

**Keywords:** Kawasaki disease, anemia, Aspirin, coronary artery lesions
LONG QT SYNDROME IN CHILDREN-EXPERIENCE FROM SOUTH INDIA

Machinary Puthenpurayil Jayakrishnan1, Padinharath Krishnakumar1

1Pediatrics, Government Medical College,Kozhikode, Kozhikode, India

Background and aims: Studies on long QT syndrome in children in India are scarce. Aim of the study was study the clinical profile of long QT syndrome in children.

Methods: Children below 12 years with suspected clinical presentation and prolonged corrected QT interval (QTc) in the electrocardiogram, and meeting the Schwartz LQTS diagnostic criteria were included in the study. A 12 lead electrocardiogram, serum potassium, calcium and magnesium were done in all cases. Hearing evaluation was done in all children. Genetic analysis of patients, parents and siblings were done.

Results: There were 13 children ( 4 boys and 9 girls) with LQTS admitted to the PICU during the study period. The youngest child was one month old. The common clinical presentations included syncopal attacks (7; 54%), bradycardia (2; 15%), ventricular ectopics (1; 8%), cardiac arrest (1;8%), seizures (1; 8%) and loss of consciousness 1(15%). Ingestion of local fruits and seeds were associated with LOTS in two (15%) children and one child had excessive ingestion of grape juice before developing symptoms. Novel mutations in KCNQ1 gene was seen in 2 (15%) children and Single nucleotide polymorphisms (SNP) for KCNQ1 was present in 9 (70%) children and Single nucleotide polymorphisms (SNP) for SCN5A was present in 2 (15%) children.

Conclusions: LQTS should be considered as a diagnostic possibility in any child presenting with syncope, unexplained seizures, unconsciousness or bradycardia.

Keywords: children, long QT
MINIMALLY INVASIVE PERVERNICULAR DEVICE CLOSURE OF SUBAORTIC VENTRICULAR SEPTAL DEFECT WITHOUT CARDIOPULMONARY BYPASS

Weize Xu¹, Jianhua Li¹, Jingjing Ye²
¹Cardiothoracic Surgery, ²Ultrasound, Heart Center, Hangzhou, China

Background and aims: To evaluate the feasibility and safety of eccentric shape occluder in closure of subaortic ventricular septal defects through minimally invasive cardiac surgery.

Methods: A retrospective study was performed in 98 patients with subaortic ventricular septal defects from September 2009 to July 2015, including 51 males and 47 females, range 8 months to 12 years, mean age 14.5±1.6 months. The mean diameter of VSD was 4.9±0.9mm (range 3 to 6.5 mm) by TTE before operation, while the mean diameter of VSD was 4.5±1.6mm (range 2.5 to 6 mm) by TEE in operation. The device was access and occlude VSD under the guidance of TEE. The mean diameter of the device was 6.9±1.26mm (range 5-9mm). The efficacy of eccentric shape occluder was evaluated via TEE.

Results: The occluders were deployed successfully in 98 patients of all. Three children were given transfusion. No aortic valve regurgitation or mitral valve regurgitation occurred in patients in 12 months of follow-up. The success rate is 100% without complications.

Conclusions: Eccentric shape occluder in closure of subaortic ventricular septal defects through minimally invasive cardiac surgery can avoid injury of valves. The success rate is high, and the procedure applied is easy, and the complications rate is low. It has a good mid-term result, but still needs long-term follow-up to evaluate the safety and efficacy.

Keywords: minimally invasive cardiac surgery, Subaortic ventricular septal defect
NEAR-FATAL ARYTHMIA IN A CHILD WITH INTESTINAL OBSTRUCTION SECONDARY TO HELMINTHIASIS

Bosede Adebayo¹, Taiwo Lawal², Oluwatoyin Ogunkunle³

¹Paediatrics, University of Ibadan and University College Hospital, ²Surgery, ³Paediatrics, University of Ibadan and University College Hospital, Ibadan, Ibadan, Nigeria

Background and aims: Helminthiasis remains a major paediatric morbidity in sub Saharan Africa resulting in significant cognitive, nutritional and physical impairment. Arrhythmias, secondary to possible eosinophilic myocarditis is a complication that is not widely reported or documented in children. We report the case of a child with intestinal obstruction secondary to helminthiasis complicated by arrhythmia, which was near fatal.

Methods: A 2-year-old boy presented to the children’s emergency ward with a 4-day history of abdominal pain associated with constipation, distension, bilious and projectile vomiting. On examination, he was acutely ill with a distended abdomen and normal volume regular pulses. A diagnosis of mechanical intestinal obstruction was made and surgery was planned.

Findings at surgery included multiple helminthic balls in the intestinal lumen. The patient had an episode of cardiac arrest associated with hypotension and was resuscitated. He was then observed to have regularly irregular pulses with heart rates of 70 to 100/minute from then. ECG showed atrial trigeminy, which resolved after the administration of IV Hydrocortisone at 10mg/kg stat.

Results: He was subsequently treated with Albendazole 10mls. Improvement was sustained, wound healed satisfactorily and he was discharged home on the sixth day after surgery. He has been seen in clinic and his heart rate was 120/minute with a regular rhythm.

Conclusions: There is a need for further community surveys for helminthiasis and a cardiac evaluation for possible silent myocarditis.

Keywords: None
Cardiology

PREDICTORS OF MORTALITY IN CHILDHOOD HEART FAILURE IN A TERTIARY HOSPITAL IN NIGERIA

Wilson Sadoh*1, Paul Ikhirionan1, Ayebo Sadoh1
1Department of Child Health, University of Benin Teaching Hospital, Benin City, Nigeria

Background and aims: Heart failure (HF) contributes to childhood morbidity and mortality, being responsible for 5 – 15% of childhood admissions in Nigeria. Aim is to evaluate the predictors of mortality in childhood HF.

Methods: This was a 42 months review of children with HF at the University of Benin Teaching hospital, Benin City, Nigeria. Information on biodata, certain socio-demographic factors and the cause of HF were abstracted from case files. Analysis was by SPSS version 20.0.

Results: A total of 198 children were recruited of which 103(52.0%) were males and 106(53.5%) were <1 year. They were aged 3 weeks to 12 years (median age = 10 months). HF was caused in 88(44.4%) by lower respiratory tract infections (LRTI), while 70(35.4) had severe anemia and 40(20.2%) had cardiac causes. Nine (4.5%) mortality was recorded. Older age (P = 0.001), socio-economic class (P = 0.005), receipt of pre-hospital treatment in herbal home (<0.0001), late presentation (P = 0.002) and cardiac causes (P = 0.025) were significantly associated with mortality in bivariate analysis. In a multivariate analysis, only older age and late presentation were independent predictors of mortality.

Conclusions: Older age and late presentation were the most important predictors of mortality in HF while LRTIs and severe anemia are important causes of HF in this study.

Keywords: heart failure, Mortality, predictors
PREVALENCE OF RHEUMATIC HEART DISEASE DETECTED BY ECHOCARDIOGRAPHIC SCREENING AMONG SCHOOL CHILDREN IN THE NIGER DELTA REGION OF NIGERIA, WEST AFRICA

Amenawon Susan Ujuanbi, Petronilla Tabansi, Barbara Otaigbe

1Paediatrics, University of Port Harcourt, Port Harcourt, Nigeria

Background and aims: Rheumatic heart disease (RHD) is an important public health problem in developing countries. Community-based studies using portable echocardiography have enhanced detection of RHD for early intervention. Aim is to determine the prevalence of RHD among school children in Port Harcourt Local Government Area (PHALGA).

Methods: A total 461 students aged 5-15 years were selected by multi-staged sampling from thirteen schools in PHALGA. All the selected students had cardiac auscultation and echocardiographic examination.

Results: The study revealed an RHD prevalence rate of 4.3 per 1,000 students using cardiac auscultation and 6.5 per 1,000 students using echocardiography only. All (100%) of the affected students with RHD were within the age category of 11-15 years and were females. Mitral regurgitation (66.7%) was the commonest valvular lesion seen. There was significant association between RHD and overcrowding (p=0.04). Cardiac auscultation is 66.7% sensitive and 98.7% specific in detecting RHD with a PPV of 25% when compared with echocardiography.

Conclusions: Early diagnosis and prompt treatment of RHD is recommended.

Keywords: Prevalence, Rheumatic Heart Disease, Echocardiography, screening, School Children
PREVENTIVE STRATEGIES FOR CARDIAC DISEASES IN CHILDHOOD

Andreas Petropoulos*1,2 on behalf of AEPC Cardiovascular Prevention, Doris Ehringer3, Peter Fritsch4, Renate Oberhoffer5 on behalf of AEPC Cardiovascular Prevention

1Pediatric Cardiology, Azerbaijan Medical University, 2Pediatric Cardiology, Merkei Klinika, Baku, Azerbaijan, 3Pediatrics, Landesklinikum Wiener Neudstad, Vienna, 4Pediatric Cardiology, University Children's Hospital, Graz, Austria, 5Pediatric Cardiology, Ludwig Maximilians-University, Munich, Germany

**Background and aims:** Cardiac disease burden results to 1% Congenital Heart Disease (CHD) + 2.0% bicuspid aortic valve + unknown prevalence of acquired disease adds up a large population with heart disease. Diagnosis and treatment are not afforded in many countries.

**Aim:** Early detection, prevention. AEPC working Group focuses in critical CHD (c-CHD) postnatal screening by pulse oximetry, preventing SCD linked to sports, detecting-preventing atherosclerosis in young, aiming to aware pediatricians and describe their involvement.

**Methods:** Measuring pre/post ductal satO\textsubscript{2} by pulse oximeters, after the first day of birth, detects critical, cyanotic CHD. Combination: medical history, physical examination, ECG, during a pre-participation in sport activities screening test prevents SCD. Screening to detect and treat risk factors for CVD and prevent obesity, hypertension, contributes preventing CVD.

**Results:** Systematic review/meta-analysis of 230,000 screened babies, reported high specificity, moderate sensitivity on detecting c-CHD. Children involved in competitive/leisure sports, initial evaluation and yearly F/U is vital. Preventing acceleration of atherosclerosis in high risk individuals by primordial/primary prevention of RF postpones CVD in adulthood.

**Conclusions:** We published using Intima Media Thickness as a surrogate marker of accelerating atherosclerosis. In 2016 we plan to influence use of pulse oximetry in neonates and ECG in the screening pre-participation in sport activities, in Europe. We are in the process publishing guidelines in which primary pediatrician’s role is vital.

**Keywords:** cardiac disease, ECG, Prevention, pulse oxymetry, Risk factors for CVD, Role of Primary Care Pediatrician
Background and aims: Previous studies have shown that echocardiography is unnecessary when the clinical diagnosis of an innocent murmur is made by an experienced cardiologist. This study was undertaken to determine if echocardiography has a useful role in the management of innocent murmurs in children.

Methods: Parents of children completed State- Trait Anxiety Inventory questionnaires after the cardiologist’s clinical diagnosis of innocent murmur. The questionnaires were repeated after echocardiography to assess if there was a change in their understanding and anxiety. The cardiologist also completed a questionnaire before echocardiography to determine the reasons for ordering investigation(s).

Results: Parental and referring doctor’s expectations were the leading reason compelling the specialist to order investigations. All 26 echocardiograms were normal except one who showed congenitally corrected transposition of great arteries. The child had an innocent murmur. There was reduction in parental anxiety and enhancement in parental understanding in both high- and low- anxiety groups after echocardiography.

Conclusions: While the sample size to date is small, the trend suggests that echocardiography may be useful to clarify the diagnosis, supplement parental education and reduce parental anxiety. These findings may direct future research in seeking a cost- effective management of innocent murmurs.

Keywords: Echocardiography, Innocent murmur, Parental anxiety
THE RELATIONSHIP BETWEEN PLASMA PROSTAGLANDIN E2 AND INTRAVENOUS IMMUNOGLOBULIN RESISTANCE, AND CORONARY ARTERY LESIONS IN KAWASAKI DISEASE

Ya-Ling Yang¹, Ying-Hsien Huang², Ho-Chang Kuo²

¹Kawasaki Disease Center, Kaohsiung Chang Gung Memorial Hospital, Taiwan, ²Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan, China

Background and aims: Kawasaki disease (KD) is a systemic vasculitis that occurs in children. Although prostaglandin E₂ (PGE₂) correlates with the immunological reactions of KD, the mechanisms have not been discovered yet. This study aims to determine the relationship between PGE₂ with the treatment outcomes of KD and CD40L expression.

Methods: A total of 144 KD patients were in this study, and their plasma PGE₂ levels and their relationship to coronary arterial lesion (CAL) formation and intravenous immunoglobulin (IVIG) resistance were evaluated. The primary mononuclear cells of patients with acute-stage KD were given IVIG and PGE₂ treatments.

Results: Once the KD patients received the IVIG treatment, their PGE₂ levels rose significantly. We found PGE₂ levels to increase after IVIG treatment for patients that responded to IVIG (p=0.004) and for patients with no CAL formation (p=0.016). However, no considerable post-IVIG PGE₂ increase was found in CAL group. Moreover, an in vitro study revealed that IVIG acted as a trigger for PGE₂ expression in the acute-stage mononuclear cells of KD patients. According to our findings, both IVIG and PGE₂ can inhibit surface CD40L expressions on CD4+ T lymphocytes.

Conclusions: This study’s results are the first to find that no increase of plasma PGE₂ levels after IVIG treatment was related to IVIG resistance and CAL in KD patients.

Keywords: None
VALIDATION OF THE SEVERAL CORONARY ARTERY Z SCORE MODELS USING 3,216 JAPANESE HEALTHY CHILDREN’S DATA.

Masashi Mikami¹, Tohru Kobayashi², Shigeto Fuse³, Naoko Sakamoto⁴, Hitoshi Kato⁵, Akira Ishiguro⁵, Hiroshi Ono⁵, Hiroshi Masuda⁵, Tsutomu Saji⁶ and Z score Project investigators

¹Division of Biostatistics, Department of Data Management, ²Division of Clinical Research Planning, Department of Development Strategy, National Center for Child Health and Development, Tokyo, ³Department of Pediatrics, NTT East Japan Sapporo Hospital, Hokkaido, ⁴Clinical Investigation and Research Unit, Gunma University, ⁵National Center for Child Health and Development, ⁶The First Department of Pediatrics, Toho University Omori Medical Center, Tokyo, Japan

Background and aims: Several coronary artery Z score models have been developed. However, the validation of models using healthy children has not been established.

Methods: We applied 3,216 Japanese healthy children’s data to validate previously reported five models. The echocardiographic measurements of the proximal right coronary artery (RCA) and proximal left anterior descending artery (LAD) were used as outcome. The Body surface area (BSA), the range of which is from 0.3 to 1.7 m², was used as explanatory variable. To evaluate the model performance, residual plot and its percentile curve by sex were calculated. Quantile-Quantile plot and its Intraclass Correlation Coefficients (ICC) were also calculated.

Results: In comparison of percentile curve and ICC using total data, the models of McCrindle BW et al. and Olivieri L et al. had better performance in RCA and LAD respectively. The result when using female and male data were different. Table indicates the value of ICC in each data and graph indicates an example of the residual plot and the percentile curve.

Conclusions: The result indicates that the model might be necessary to be established by sex.

Image:
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RCA (Confidence interval)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.154</td>
<td>0.846</td>
<td>0.993</td>
<td>0.981</td>
<td>0.968</td>
</tr>
<tr>
<td></td>
<td>(0.844-0.862)</td>
<td>(0.835-0.855)</td>
<td>(0.992-0.999)</td>
<td>(0.979-0.981)</td>
<td>(0.966-0.970)</td>
</tr>
<tr>
<td>Male</td>
<td>0.722</td>
<td>0.792</td>
<td>0.989</td>
<td>0.994</td>
<td>0.986</td>
</tr>
<tr>
<td></td>
<td>(0.751-0.790)</td>
<td>(0.772-0.808)</td>
<td>(0.988-0.999)</td>
<td>(0.993-0.994)</td>
<td>(0.984-0.987)</td>
</tr>
<tr>
<td>Female</td>
<td>0.823</td>
<td>0.888</td>
<td>0.969</td>
<td>0.953</td>
<td>0.926</td>
</tr>
<tr>
<td></td>
<td>(0.928-0.941)</td>
<td>(0.874-0.969)</td>
<td>(0.965-0.971)</td>
<td>(0.928-0.941)</td>
<td>(0.918-0.933)</td>
</tr>
<tr>
<td>LAD (Confidence interval)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.939</td>
<td>0.963</td>
<td>0.909</td>
<td>0.979</td>
<td>0.967</td>
</tr>
<tr>
<td></td>
<td>(0.935-0.943)</td>
<td>(0.960-0.969)</td>
<td>(0.903-0.911)</td>
<td>(0.977-0.980)</td>
<td>(0.964-0.969)</td>
</tr>
<tr>
<td>Male</td>
<td>0.909</td>
<td>0.929</td>
<td>0.848</td>
<td>0.905</td>
<td>0.941</td>
</tr>
<tr>
<td></td>
<td>(0.873-0.899)</td>
<td>(0.914-0.962)</td>
<td>(0.943-0.952)</td>
<td>(0.994-0.995)</td>
<td>(0.925-0.946)</td>
</tr>
<tr>
<td>Female</td>
<td>0.979</td>
<td>0.951</td>
<td>0.845</td>
<td>0.941</td>
<td>0.984</td>
</tr>
<tr>
<td></td>
<td>(0.977-0.981)</td>
<td>(0.945-0.955)</td>
<td>(0.943-0.951)</td>
<td>(0.934-0.946)</td>
<td>(0.962-0.983)</td>
</tr>
</tbody>
</table>

**Keywords:** coronary artery, Kawasaki disease, pediatric, Z score
A MOBILE PHONE-BASED DATA COLLECTION SYSTEM TO SUPPORT HELPING BABIES BREATHE TRAINING AND IMPLEMENTATION

Sherri Bucher*1 and mHBB Working Group Kenya: IUPUI and Moi University School of Medicine
1Pediatrics, Indiana University School of Medicine, Indianapolis, United States

Background and aims: Helping Babies Breathe (HBB) is a neonatal resuscitation program that has rolled out in nearly 80 countries over the past 5 years. However, paper-based data collection hampers effective monitoring, evaluation, and reporting. We describe results from a proof-of-concept study in which mobile phones were used to collect HBB training and quality improvement data (“mHBB”).

Methods: Twelve HBB forms were digitized. Web-based and app-based HBB data collection systems (“web-mHBB” and “ODK-mHBB”) were developed, and feasibility and acceptability testing was conducted among health workers drawn from 24 private and public health facilities in Kenya. Quantitative and qualitative data regarding the effectiveness of utilizing web-mHBB vs. ODK-mHBB vs. paper-based HBB forms for documentation and reporting of neonatal resuscitation training and clinical services was collected.

Results: Mobile phone-based data collection is highly feasible and acceptable among all levels of HBB end-users in Kenya. The app-based ODK-mHBB system was preferred over both web-mHBB and paper-based methods. ODK-mHBB may be more cost-effective, for front-line health workers, than paper-based methods.

Conclusions: Collection of HBB data via mobile phones, using the mHBB system, may be a valuable tool for many HBB programs. A broader needs assessment for generalizability of mHBB to support HBB implementation in other health system landscapes, and mHealth ecosystems, is planned.

Keywords: Data collection, Helping Babies Breathe, Kenya, mHealth, mobile phone, Neonatal resuscitation, Quality of Care, sub-Saharan Africa
A REVIEW OF INFANT AND YOUNG CHILD FEEDING IN HOSPITAL AND AT HOME IN KWAZULU-NAITAL MIDLANDS
Pratheesha Seonandan1, Neil McKerrow1
1Paediatrics, Nelson Mandela School of Medicine - University of Kwazulu-Natal, Durban, South Africa

Background and aims: Malnutrition remains a major health burden globally. The focus has been on strengthening and supporting breastfeeding, with less attention on feeding of the infant beyond six months. The aim of this study is to describe infant and young child feeding practices at home and in hospital, and to determine if feeding practices correlate with national policies.

Methods: A descriptive study, using standardized questionnaires for caregivers and health professionals, was conducted in 2011 in 12 hospitals in the Kwazulu-Natal Midlands.

Results: 76% of infants were exclusively breastfed with only 36% being exclusively breastfed beyond 3 months. Despite caregivers receiving information regarding feeding of their child (> 70%), complementary feeds were commenced in 84% of infants less than 6 months old. Although some hospitals were recognised as Baby friendly, breastfeeding on demand was not being practiced. In hospitals, age-specific meals were provided for children below 2 years (93%) and fewer above 2 years (78%). Approximately 71% of children above six months received more than 3 milk feeds per day in hospital, and the majority received one snack per day.

Conclusions: Feeding messages focus on breastfeeding. Breastfeeding rates have improved but exclusive breastfeeding is short lived. Early complementary feeding remains a challenge. There is a disparity between intention and practice among healthcare workers in feeding young children.

Keywords: breastfeeding, complementary feeding, feeding young children, infant feeding
ADHERENCE TO THE INTEGRATED MANAGEMENT OF CHILDHOOD DISEASE (IMCI) GUIDELINES IN NAMIBIA, KENYA, TANZANIA AND UGANDA: EVIDENCE FROM THE NATIONAL SERVICE PROVISION ASSESSMENT (SPA) SURVEYS

Carsten Krueger¹, Mohammed Ali²

¹Department of Paediatrics, St. Franziskus Hospital, Ahlen, Germany, ²School of Nursing, Midwifery and Paramedicine, Curtin University, Perth, Australia

Background and aims: IMCI is regarded as a standard approach to lowering child mortality in developing countries. However, little is known about adherence to the guidelines at national levels in sub-Saharan Africa.

Methods: Data from the SPA surveys of Namibia (NA) (2009), Kenya (KE) (2010), Tanzania (TZ) (2006) and Uganda (UG) (2007) were analysed for adherence rates by health staff.

Results: Combined assessment rates for 3 IMCI danger signs (inability to eat/drink, vomiting everything, febrile convulsions) were < 25% (NA: 12%/KE: 13%/TZ: 11%/UG: 25%) and for the 3 IMCI main symptoms (cough/difficult breathing, diarrhoea, fever) < 55% (49/36/46/52). Physical exam rates for fever (temperature) (100/91/79/90), pneumonia (respiration rate) (40/25/21/18) and diarrhoea (dehydration) (28/20/20/29) varied widely and were best when assessing the respective disease (not shown). Antibiotics for severe pneumonia (86/93/95/93) and oral rehydration solution for severe diarrhoea (74/74/63/83) were prescribed at satisfactory rates. Adherence rates were highest in hospitals and health centres (not shown).

Conclusions: Despite nationwide training in IMCI the adherence rates for assessment and physical exam remained low in all 4 countries although adherence to treatment protocols seemed better. IMCI is yet to reach its full potential in reducing child mortality.

Keywords: Adherence, developing countries, Guidelines, IMCI
Child Health and Survival: Global health

BREAST FEEDING PRACTICES AMONG WOMEN ATTENDING OBIO COTTAGE HOSPITAL, PORT HARcourt.

Jerome Elusiyan¹, Akanni Akinyemi², Akinwumi Fajola³, Esther Ikpeme⁴, Rakiya Usman⁴, Olayinka Mosuro³
¹Paediatrics, ²Demography, Obafemi Awolowo University, Ile-Ife, ³Community Health, SPDC, ⁴Paediatrics, Obio Cottage Hospital, Port Harcourt, Nigeria

Background and aims: Despite advocacy for breast feeding for children, Nigeria still has a poor Exclusive Breast feeding rate. This study assessed the knowledge and practice of mothers towards breast feeding.

Methods: A cross-sectional survey using a questionnaire at the Immunization clinic of Obio Cottage hospital, an SPDC supported Public private partnership health facility in which 811 breast feeding mothers were voluntarily recruited.

Results: Eighty one percent of respondent were aged between 20-34 years and about 30% had introduce water before 6 months. Reason adduced for early introduction of water were baby not getting enough (22%), baby thirsty (22%) and advice by well wishers (11%). Those that gave water were influenced by Mothers (11.6%), personal decision (45.4%) and husband (5.7%). Knowledge Index showed that only 64% and 95.3 % had good knowledge and practice respectively. Only the age of respondents showed a significant correlation with practice (χ² 6.33; p=0.042). Number of children ever breast fed showed a significant relationship on logistic regression (odds ratio 0.084; p=0.006; confidence interval 0.014-0.492).

Conclusions: It would appear that poor knowledge of breast feeding is responsible for the not too encouraging practice of breast feeding in Nigeria.

Keywords: breastfeeding, Knowledge, Attitude
CAREGIVER COMPLIANCE TO CONFIRMATORY TESTING FOR G6PD DEFICIENCY AT A TERTIARY GOVERNMENT MEDICAL CENTER

Maureen Teves *1, Arvin Escueta 1

1Department of Pediatrics, Jose R. Reyes Memorial Medical Center, Manila, Philippines

Background and aims: Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency is an inherited condition that can lead to a spectrum of symptoms if exposure to offending agents is not prevented. Newborn screening is a useful tool that detects the presence of this condition, as is the confirmatory test. This study aims to determine the compliance to confirmatory testing of patients who tested positive for G6PD Deficiency via Newborn Screening Test at a tertiary government medical center from 2013 to 2014.

Methods: This is a retrospective cross-sectional study conducted among patients who were born and underwent newborn screening at a tertiary government medical center on January 2013 to December 2014. We conducted a follow-up survey using structured questionnaires to assess the compliance of the parents and caregivers to confirmatory testing.

Results: Out of the 3,570 infants who were delivered at the medical center, 143 were positive for G6PD deficiency on newborn screening test. We were able to track 62 patients, of which only 62.9% were able to comply to confirmatory testing. The most common reasons for non-compliance to confirmatory testing were "busyness/lack of time" (47.83%), uninformed (21.74%), and lack of funds (21.74%).

Conclusions: Reasons for non-compliance are lack of time, lack of knowledge and financial constraints. This shows that there is a need to improve the patient education programs of medical centers, particularly on the newborn screening program.

Keywords: confirmatory testing, G6PD deficiency, newborn screening
Child Health and Survival: Global health

CHALLENGES AND LESSONS LEARNED FROM THE INTRODUCTION OF NASAL CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) FOR RESPIRATORY FAILURE OF THE NEWBORN IN A VERY LOW RESOURCE, SUB-SAHARAN COUNTRY (BENIN)

Nicole Rouvinez Bouali¹, Dyne Bello², Marcelline D’Almeida², Blaise Ayivi²
¹Pediatrics, University of Ottawa, Ottawa, Canada, ²Pediatrics, University of Abomey-Calavi, Cotonou, Benin

Background and aims: Respiratory failure is a leading cause of mortality in the newborn. Continuous Positive Airway Pressure (CPAP) is recommended by the World Health Organization for preterm infants with respiratory distress syndrome (RDS). We discuss the challenges met with CPAP in a very low resource setting, and share lessons learned and changes required to address suboptimal local conditions.

Methods: Prospective cohort study done March to November 2014 at the National University Hospital in Cotonou, Benin. All newborns at or above 30 weeks gestation, admitted for respiratory distress within 72 hours of age, and treated with nasal CPAP were included. Primary outcome was survival. The study was approved by the University of Abomey-Calavi ethics committee.

Results: Preterm infants (79%) and RDS (72%) represented the majority, respectively most common indication to CPAP. Delay to start of CPAP was ≥ 6 hours in 72% of cases and average positive end expiratory pressure (PEEP) was 5. Survival was 67%. Further analysis led to earlier treatment, higher PEEP, and the creation of a CPAP algorithm, leading to a survival of 78% in 2015.

Conclusions: Nasal CPAP can save lives in very low resource settings, despite challenging resources. It is crucial to know the local conditions in order to use it at its full potential.

Keywords: CPAP, low and middle income countries, neonatal mortality, respiratory failure, Sub-Saharan Africa
CHANGING TRENDS OF THE METABOLIC DISORDERS WITH AGE IN CHILDHOOD

Oya Yücel 1, Bengu Altnordu2

1Baskent University, Istanbul Research and Education Hospital, Pediatric Department, 2Pediatric Department, Baskent University, Istanbul Research and Education Hospital, Istanbul, Turkey

Background and aims: We aim to investigate the prevalence of metabolic disorders in childhood, effecting factors and trends changing with age in children.

Methods: Study consisted of 250 children aged 7 to 17 years old. Anthropometric measurements were taken. Blood samples were collected for fasting glucose, insulin, TSH, lipid profile. HOMA-IR was calculated. Body composition analysis was applied. Blood pressure was measured. Lifestyle conditions were also questioned. Metabolic disorders were compared in Tanner stages groups. Obese and non-obese groups were compared.

Results: There was no statistical difference between genders (p=0.86). Metabolic Syndrome was determined in 78 children (31.2%) according to the IDF consensus definition in children and adolescents. There was statistically significant difference in children with metabolic syndrome in terms of triglycerid, plasma fasting glucose, insulin, HOMA-IR, SBP, DBP (P=0.001 for all), Non-HDL-cholesterol (P=0.008) and HDL-cholesterol levels (P=0.003). The most common metabolic disorder was high waist percentiles (58.8%). The rate of low HDL-cholesterol was 15.6%, high SBP was 13.6%. While increasing fat mass in obese children, total body water was decreasing (p=0.001).

Conclusions: The rate of metabolic disorders were increasing in adolescents. Abdominal obesity associated with increasing risk of cardiovascular disease and diabetes was the most common disorder.

Keywords: Childhood obesity, metabolic syndrome, tanner stages
Background and aims: Adenotonsillar hypertrophy (ATH) is a major cause of airway obstruction/inflammation in children. However; evidence for indication of Adenotonsillectomy (T&A) is still primarily an expert opinion. This study assessed children with ATH before and 1 month after T&A surgery seeking robust evidence for surgery indication.

Methods: Thirty children diagnosed for ATH and scheduled for adenotonsillectomy (T&A) were included. They underwent detailed history taking, clinical examination and laboratory assessment for serum level of insulin-like growth factor 1 (IGF-1) (as a molecular marker of growth) and Cysteinyl leukotrienes level (CL) (as a major inflammatory marker) were performed before and 1 month after T&A surgery.

Twenty clinically healthy age and sex matched children were included as control group.

Results: The mean serum level of IGF-1 was significantly reduced only in children with evidence of airway obstruction and increased after T&A surgery. Reduction below normal IGF-1 level (control group mean IGF-1 cut off value in our study was 178 ± 6.96 ng/ml) could be used as indicator of significant airway obstruction. The mean plasma level of CL (as inflammatory cytokine) was significantly higher in ATH children (without any correlation to obstruction grades) preoperatively - in comparison to healthy children CL mean level 7.16 ±3.26 pg /ml – and significantly reduced after T&A.

Conclusions: Two novel indicators for T&A surgery are suggested. First for obstruction (IGF-1 below 178 ± 6.96 ng/ml) and second for persistent inflammation (CL level above 7.16 ±3.26 pg /ml).

Keywords: adenotonsillar hypertrophy, adenotonsillectomy surgery, airway obstruction marker, children, Inflammation marker
DEVELOPING A CLINICAL INFORMATION NETWORK ACROSS 14 KENYAN INPATIENT SETTINGS TO UNDERSTAND SERVICE DELIVERY, IMPROVE CARE, TEST INTERVENTIONS AND ADVANCE HEALTH INFORMATION SYSTEMS

Mike English¹, Grace Irimu², Philip Ayieko¹
¹Health Services Unit, KEMRI-Wellcome Trust Research Programme, ²Paediatrics, University of Nairobi, Nairobi, Kenya

Background and aims: Lack of detailed information about hospital activities, processes and outcomes hampers planning, performance monitoring and improvement in LIC. Clinical networks may advance methods for data collection and use but are rare in LIC.

Methods: Data from 14 county (district) inpatient settings have been collected since October 2013 using a detailed case-record review and data quality checking process in partnership with hospital teams. Data are analysed using automated analytic scripts to provide hospitals with quality reports while aggregated data are used to understand service delivery and improve care.

Results: By January 2016 data were available for over 65,000 admissions. Engagement in the network has considerably improved clinical documentation. Deaths (6% overall) commonly occur within 48 hrs of admission despite major differences in inpatient mortality and prevalence of malaria. Access to basic (eg. blood glucose) and diagnostic tests (eg. blood culture) remains very limited. Adherence to clinical guidelines for malaria, pneumonia and acute severe malnutrition varies but participation in the network is associated with improved adoption of some interventions (eg. assessment of MUAC and treatment with artesunate).

Conclusions: Developing clinical networks is feasible. Early data demonstrate that hospital mortality remains high in Kenya, that resources to investigate severe illness are limited, that care provided and outcomes vary widely and that adoption of effective interventions remains slow. Findings suggest considerable scope for improving care within and across sites.

Keywords: essential package, global child health, health service, hospital performance, Inpatients, Quality of Care
DEVELOPMENTAL DISABILITY IN REFUGEE CHILDREN IN SOUTH WESTERN SYDNEY: DOUBLE JEOPARDY
Paul Hotton1, Shanti Raman1, Tara Brown2, Romy Hurwitz1
1Community Paediatrics, 2General Paediatrics, Liverpool Hospital, Sydney, Australia

Background and aims: International studies have documented significant health problems in refugee children resettling in western countries. Less described is the burden of disability. Anecdotal reports suggest increasing numbers of refugees presenting with significant disability in Sydney. Aims were to identify the health, social and service needs of refugee children presenting with disability in South Western Sydney (SWS).

Methods: Data was collated on children (<18) attending refugee clinics in SWS between 2010 - 2014, with a focus on those with a disability. An illustrative case study is described of a profoundly disabled youth.

Results: 137 children were seen in clinics in SWS in the period. Mean age was 7.3 years, 60% were male, and the majority were Middle-Eastern. The proportion of children with developmental disability went from an average of 12% to 37% with significantly more presentations with severe disability and co-morbid conditions seen in 2014. Immigration policy changes in 2012 possibly accounted for this rise.

Conclusions: Developmental disability and co-morbid chronic health conditions are emerging issues in newly arriving refugee families. The case study demonstrated the challenges for health, education and welfare services in coordinating care. Qualitative research involving refugee families and services will help inform the planning of coordinated and culturally competent health and welfare services.

Keywords: child health, Developmental Disability, Refugee Health, refugee settlement
DISTRICT SCALE UP OF AN INTEGRATED MATERNAL CHILD HEALTH INITIATIVE IN RURAL SOUTHWEST UGANDA: PRE-POST INTERVENTION COVERAGE SURVEY RESULTS
Jennifer Brenner 1, Teddy Kyomuhangi2, Eleanor Turyakira3, Alberto Nettel-Aguirre1, Nalini Singhal1, Gurbakhshash Singh1, Amy Hobbs1, Jerome Kabakyenga2 and Healthy Child Uganda Evaluation Team
1University of Calgary, Calgary, Canada, 2Mbarara University of Science & Technology, 3Mbarara University of Science and Technology, Mbarara, Uganda

Background and aims: The potential for districts themselves to lead effective, integrated maternal child health (MCH) programming efforts in sub-Saharan Africa is not well studied.

Methods: A pre-post intervention trial design used a DHS-modified household coverage survey to compare key MCH indicators. Intervention involved district-led scale up of an MCH-focused “package” of capacity building activities in rural Uganda. Health managers were engaged through workshops and meetings; facility staff received refresher training, quality improvement was undertaken and 1,700 volunteer CHW were trained. Questionnaires were verbally administered to women (15-49 years) assessing practice, care-seeking, and nutrition/illness status in 25 village clusters before (2012) and after (2014) intervention. Pre/post differences in proportions and confidence intervals were calculated using intra-class correlation coefficients.

Results: Respondents included 1,466 women pre intervention and 1,975 post intervention. Post intervention, 23/25 key indicators showed positive change in health practice and care-seeking and morbidity including positive absolute increases in deworming by 20.4% (12.2,28.5), measles vaccination by 9.6% (1.3,17.9), and postnatal visit by 42.6 (38.1,47.0). Underweight status was reduced by 2.9% (-6.4,-0.6) and diarrhea by 6.6% (-10.1,-3.1).

Conclusions: A two year district-led MCH promotion model was associated with positive household MCH indicator changes suggesting integrated, capacity focused, district-wide programming could impact MCH in rural sub-Saharan Africa where resources are limited and MCH needs high.

Keywords: child health, community health workers, health promotion, maternal health
DON & ELIZABETH HILLMAN INTERNATIONAL CHILD HEALTH GRANT Awardees: WHERE ARE THEY NOW?

Andrea Hunter∗ 1, Laura Sauve2

1Pediatrics, McMaster Children's Hospital, Hamilton, 2Pediatrics, BC Children's Hospital, Vancouver, Canada

Background and aims: The Don & Elizabeth Hillman International Child Health Grant of the Canadian Pediatric Society aims to promote international health opportunities for residents and fellows; from 2003 – 2013, forty awards ($750 - $1000 Cdn each) were distributed for use towards pediatrics electives in low-middle income countries. We aimed to describe interest, perceived enablers and barriers of global health (GH) career pursuits amongst those who completed a funded international residency elective (IRE).

Methods: Past grant recipients were emailed a link to an online survey; 3 reminders were sent to nonresponders.

Results: Nineteen of 40 grant awardees completed the survey. Financial support influenced 8/19. Nine have pursued further training related to GH, while 7 were planning to do so in the future. Enablers to participation in GH activities include: family support (11/19), departmental support (10/19), and mentorship (8/19). Barriers included: scheduling (16/19), financial (15/19), and family obligations (10/19). Most (79%) felt that their IRE encouraged future GH involvement; all felt IREs influenced their attitudes towards health care. 10/14 pediatrician respondents currently spend time in GH activities.

Conclusions: Grant recipients are generally involved with the care of vulnerable children either within or outside Canada, and for many, their international elective experience influenced career directions.

Keywords: ELECTIVE, GLOBAL HEALTH, MEDICAL EDUCATION
EARLY WARNING AND EVALUATION OF CLINICAL APPLICATION OF MAS IN PATIENTS WITH SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS

Li Caifeng\(^1\) and Beijing Children's Hospital
\(^1\)rheumatology, Beijing Children's Hospital, Beijing, China

**Background and aims:** Through a retrospective analysis of our department in the last 11 years, initially developed for systemic juvenile idiopathic arthritis combined with MAS early warning model, establishing a rational assessment scale.

**Methods:** Retrospective analysis from January 2003 to January 2014 11 years of previous case data, and select of indicators for assessing the severity of disease activity. Make clinical manifestation and auxiliary examination characteristic quantity table.

**Results:** Through a series of research, we make these conclusion:
Clinical features::the proportion of men and women was 1/1.75. The average age of onset was 5 years 4 months; starting performance: high degree fever (92.9%), pleomorphic lupus (27.6%), arthritis (45.7%); Laboratory examination: blood abnormalities (100%); blood biochemical abnormalities including elevated triglycerides (88.3%), liver function damage (92.7%), erythrocyte sedimentation rate (ESR), acute reactive protein, serum ferritin abnormal (98.7%); NK cell activity detection of abnormal functioning (33.7%); bone marrow cytology abnormal 68/200. Imaging examination: abnormal chest X-ray (49/200), pulmonary CT (42/109), head CT (MRI) (55/154), At last, we have made a early warning scale.

**Conclusions:** The MAS patients with systemic juvenile idiopathic arthritis were critical. The early warning scale we created which was effective and sensitive can improve patient's prognosis.

**Keywords:** Macrophage activation syndrome, systemic juvenile idiopathic arthritis
Child Health and Survival: Global health

EATING SOUP WITH NAILS OF PIG: CULTURAL PRACTICES AND BELIEFS INFLUENCING PERINATAL NUTRITION IN LOW AND MIDDLE INCOME COUNTRIES

Shanti Raman¹, Rachel Nicholls², Jan Ritchie³, Husna Razee³

¹Community Paediatrics, South Western Sydney Local Health District, Liverpool, Sydney, ²Faculty of Health, University of Technology, Sydney, ³School of Public Health & Community Medicine, University of New South Wales, Sydney, Australia

Background and aims: The perinatal period accounts for a significant proportion of disease burden in low resource settings; with malnutrition a major contributor. We aimed to explore qualitative research conducted in these settings around the perinatal continuum, with a focus on the ‘cultural’ realm, to identify common themes influencing maternal/infant nutrition.

Methods: We systematically searched electronic databases using relevant search terms. We synthesised the literature thematically, enabled by NVivo 10 software.

Results: Most studies showed cultural support for breastfeeding, although colostrum was not valued. A range of restrictive behaviours through pregnancy and the post-partum period were practised. There was strong cultural understanding of the healing power of everyday foods. A bewildering range of good foods and bad foods continued to have currency through the perinatal continuum. Cross-cutting themes that emerged were 1) the role of the woman/mother/wife as strong and good; 2) poverty restricting women’s nutrition choices; 3) change being constant but the direction unpredictable.

Conclusions: Public health policymakers and practitioners should tailor contextually specific perinatal interventions to optimise maternal and infant nutrition, given the diversity and currency of cultural beliefs and practices.

Keywords: cultural practices, developing countries, maternal and child nutrition, qualitative research
EBOLA CHEZ LES ENFANTS EN GUINEE CONAKRY: ASPECT ÉPIDÉMIOLOGIQUE, CLINIQUE ET PRONOSTIC
Pathe Mamadou DIALLO¹, Dienaba KASSE¹, Mahamoud sama CHERIF¹
¹Chaire de Pediatrie, Faculte de Medecine Pharmacie Odontostomatologie, Universite de Conakry, Conakry, Guinea

Background and aims: The Ebola outbreak in 2014 is the largest in history, affecting thousands of people in West Africa. Young children are the most vulnerable group of patients after pregnant women. It is therefore imperative to highlight the burden of disease in children under 16 to guide health policy decisions. Objective of this study is to analyze the epidemiological and clinical features of children in this outbreak due to Ebola virus between January 2014 and May 2015 in Guinea.

Methods: We conducted a retrospective and analytical study. The population consisted of children aged 0-16 years admitted to the CTE between January 2014 and May 2015 in Guinea.

Results: 1892 children aged 0–16 years (17.4%), were admitted in the Ebola Treatment Centers (ETC). We observed that major symptoms such as unexplained bleeding, vomiting, fatigue, anorexia, abdominal pain were less common in children than the adults. The risk of getting the Ebola disease was significantly lower in children under 5 years. In contrast, The fatality rate was a higher rate in the same group (72.7%) as compare to adult (65.4%). The risk of dying increased significantly in the presence of the sore throat (OR = 1.802; 95% CI [1.30 to 2.49]) hiccups (OR = 1.685 ; 95% CI [1.30 to 2.17]; diarrhea (OR = 1.627, 95% CI [1.37 to 1.92]) and unexplained bleeding (OR = 1.454; 95% CI [1. 18 to 1.78.])

Conclusions: These findings suggest that children under 5 years old are at risk of dying, but less risk of getting infected.

Keywords: Ebola outbreak, Guinea, children
EFFECT OF EARTHQUAKE IN PEDIATRIC INPATIENT PATTERN IN PEDIATRIC TERTIARY CARE HOSPITAL IN NEPAL

Bishnu Rath Giri1, Ram Hari Chapagain2, Samana Sharma2, Sandeep Shrestha2, Sunita Ghimire2, P Ravi Shankar3

1General Pediatrics, Kanti Children’s Hospital, 2Pediatrics, National Academy of Medical Sciences, Kathmandu, Nepal, 3Pharmacology, Xavier University School of Medicine, Aruba, Aruba

Background and aims: Earthquake presents a variety of effects and risks to health of children. Disease conditions occurring immediately following earthquake have been studied in few field based hospitals but the pattern in a fixed hospital setup for children without trauma is lacking

Methods: We looked at the diagnoses of all children without trauma, getting admitted to Kanti Children’s Hospital from 3-18 weeks following the 7.8M earthquake on 25th April 2015. The admitted children were classified based on whether belonging to earthquake affected district and direct effect of earthquake (house damaged or family member injured or dead). Most common diagnoses were identified and their distribution between the aforementioned groups analyzed

Results: The proportion of patients requiring admission for pneumonia and acute gastroenteritis was significantly higher in those belonging to earthquake affected districts. Proportion of patients with any infective condition was also significantly higher in this group. AGN or PSGN was significantly higher in this group during 13-18 weeks after earthquake. Proportion of patients with epilepsy, nephrotic syndrome, PEM/FTT, Enteric fever, Tuberculosis, UTI, Infective hepatitis, meningitis, leukemia and congenital heart disease was not different between patients from affected and non-affected districts. The patients directly affected by the earthquake were more likely to get admitted to semi-intensive care ward or ICU

Conclusions: Effects of earthquake in health of children occurs in all children of the affected community without relation to its direct effect to the family or house

Keywords: Children, Earthquake, effect, Health, Inpatient
Child Health and Survival: Global health

EFFECT OF PEER COUNSELLING ON EARLY INFANT FEEDING PRACTICES AND NUTRITIONAL STATUS IN CHILDREN IN URBAN SLUM, BANGLADESH: A COMMUNITY BASED RANDOMIZED CONTROLLED TRIAL

Mansura Khanam¹, G Ara¹, N Papri¹, Md A Haque¹, B Nahar¹, I Kabi², M J Dibley³
¹icddrb, ²BBF, Dhaka, ³University of Sydney, Sydney, Bangladesh

Background and aims: The aim of the study is to assess the impact of peer counseling (PC) on early initiation of breastfeeding (EIBF) and infant growth from slums of Dhaka.

Methods: A community based CRCT was conducted, where 350 mother-infant pairs had been enrolled. PC was delivered in intervention group by locally recruited and trained PCs starting in 3rd trimester of pregnancy until 6 months of life. Proportion of EIBF as well as nutritional status was compared among the groups

Results: EIBF rate was significantly higher among the intervention (I) group than control(C) group (60% vs. 50.81%). C mothers were 2.5 times more likely in delaying EIBF than intervention mothers. The low rate of EIBF had a more effect in c-section among the both group’s mothers (37.5% vs. 31%). The prevalence of EBF was significantly higher in the intervention group at the end of 1 to 5th months (69% vs. 31% in I and C group respectively). In the I group, 95% of the mother gave breast milk as the 1st liquid than 89.7% in the control group. Preliminary analysis shows at 3rd months 9.1% of the intervention children were underweighted compared to 17.2%.

Conclusions: This study suggests that PC improved the EIBF but we didn’t find any significant impact on child nutritional status.

Keywords: Intervention, Early Initiation of breastfeeding
EFFECT OF PEER COUNSELLING ON EXCLUSIVE BREASTFEEDING PRACTICES IN URBAN SLUM, BANGLADESH: A COMMUNITY BASED RANDOMIZED CONTROLLED TRIAL

Gulshan Ara¹, Mansura Khanam¹, Nowshin Papree¹, Ahshanul Haque¹, Baitun Nahar¹, Iqbal Kabir², Michael Dibley³ and Infant and Young Child feeding
¹icddr,b, ²Bangladesh Breastfeeding Foundation, Dhaka, Bangladesh, ³University of Sydney, Sydney, Australia

Background and aims: In Bangladesh, one-to-one counselling has shown significant increases in the rates of exclusive breastfeeding (EBF). The aim of this analysis is to evaluate the impact of peer counselling on EBF practices of mothers from selected slums in Dhaka city.

Methods: It is a CRCT where 350 mother-infant pairs had been enrolled. Peer counseling was delivered in the intervention group by locally recruited and trained PCs starting from third trimester of pregnancy to first six months of infant’s life. In this analysis the preliminary findings of prevalence of prelacteal feeding, EBF were compared between the groups

Results: Higher proportion of intervention mothers (89%) reported giving breast milk within one hour compared to control mothers (78%). Significantly lower proportion of babies (10.4%) received prelacteal foods in intervention group compared to control group (31.1%). At the 5th month of life the rate of EBF was significantly higher in the intervention group than control group (69% vs. 31%). Multivariate logistic regression analysis shows that control mothers were 5.2 times more likely not to practice EBF compared to intervention mothers.

Conclusions: In conclusion, incorporating peer counselling in the regular child health program can help to increase EIBF and EBF practices.

Keywords: None
**EFFECT OF PHYSICAL ACTIVATION ON HORMONAL AND IMMUNE INDICES IN CHILDREN**

Dilorom Akhmedova\(^1,2\), Nilufar Akhmedova\(^1\), Nadira Zakirova\(^1,1\)

\(^1\)Tashkent pediatric medical institute, \(^2\)Republican Specialized Research Medical Center of Pediatrics, Tashkent, Uzbekistan

**Background and aims:** Examine immune system status and hormone levels in children depending on their physical activity

**Methods:** Examined 200 children aged 13-14 years (120-children involved in sports and 80-children involved in physical training in secondary schools). Immune system status and hormone levels were studied

**Results:** The average level of cortisol in athletes was higher than in children not involved in sports (542.7±29.7 nmol/l and 331.6±15.0 nmol/l). Very high levels of cortisol (above 800 nmol/l) were observed only in athletes (14.4%) and were not detected in the control group. High levels of cortisol (500-800 nmol/l) were found nearly in half of athletes (47.2%), whereas in the control group, in only 15.6% of cases. In most control individuals (75.0%) cortisol level was below 400 nmol/l, whereas in athletes this level was revealed only in 20.5% of cases. The content of growth hormone in blood did not significantly differ in both groups and corresponded to age norms (1.8±0.05 ng/ml and 1.6±0.03 ng/ml)

There were no significant differences in the immune system indices of both groups. For instance, levels of IgM in children involved in sports and children involved in physical training were the same (1.4±0.08 and 1.37±0.07)

**Conclusions:** Majority of athletes had increased levels of cortisol, which performed mobilization function aimed at the use of protein resources for energy supply of heavily working muscles

**Keywords:** None
Child Health and Survival: Global health

EPIDEMIOLOGY OF HOSPITALIZED CHILDHOOD PNEUMONIA PRIOR TO PNEUMOCOCCAL CONJUGATE VACCINE INTRODUCTION IN LAO PDR: A RETROSPECTIVE REVIEW

Ruth Lim¹, Vanphanom Sychareun², Molina Choummanivong², Kimberley Fox³, Siddhartha Sankar Datta⁴, Cattram Nguyen¹, Kim Mulholland¹,⁵, Anonh Xeuatvongsa⁶, Fiona Russell¹,⁷

¹Murdoch Childrens Research Institute, The Royal Children’s Hospital, Melbourne, Australia, ²Faculty of Postgraduate Studies, University of Health Sciences, Vientiane, Laos, ³World Health Organization Regional Office for the Western Pacific, Manila, Philippines, ⁴World Health Organization, Vientiane, Laos, ⁵London School of Hygiene and Tropical Medicine, London, United Kingdom, ⁶Ministry of Health, Vientiane, Laos, ⁷Department of Pediatrics, University of Melbourne, Melbourne, Australia

Background and aims: Pneumonia is the commonest cause of post-neonatal under-5 mortality worldwide, and pneumococcus is the leading bacterial cause in children. Lao People’s Democratic Republic (Lao PDR) was the first low-income SE Asian country to introduce the 13-valent pneumococcal conjugate vaccine (PCV) in 2013. Recognizing a lack of regional epidemiological data regarding childhood pneumonia, this study describes hospitalized pneumonia in children in Vientiane, Lao PDR prior to PCV introduction.

Methods: A retrospective review of hospitalizations and medical records of children 2-59mo admitted to all Vientiane hospitals from 2011-2013 was conducted. Hospital admissions were used to calculate annual incidence of hospitalized pneumonia. Severity, clinical features and outcomes were described from medical records. Pneumonia was defined per WHO Pocketbook of Hospital Care for Children (2nd ed).

Results: The annual incidence of hospitalized pneumonia was estimated to be 1519 per 100,000 (95% CI 1466-1573) children aged 2-59mo; comprised 20.3% of all-cause hospitalizations; and 55% of cases were severe. Hypoxia or cyanosis were present in 15.7% of cases. Supplemental oxygen and intensive care were required for 17.1% and 14.6% of cases, respectively. Inpatient case-fatality was low (0.3%), but 4.8% of cases were discharged unwell or home to die.

Conclusions: Our study demonstrates a high burden of childhood pneumonia in Lao PDR prior to the introduction of PCV, and provides support for the sustainability of PCV in Lao PDR and other countries in the region.

Acknowledgements: This study is funded by Gavi, the Vaccine Alliance.

Keywords: child, developing countries, epidemiology, low and middle income countries, pneumonia, vaccination
EXTENDED PEER COUNSELING IMPROVES INFANT AND YOUNG CHILD FEEDING PRACTICES: A RANDOMIZED CONTROLLED TRIAL IN URBAN DHAKA

Iqbal Kabir* 1, S Rasheed2, R Haider3, S K Roy1, G Ara2, M Khanam2, S Mhrshahi 4, K Agho5, M J Dibley4

1BBF, 2icddrb, 3TAHN, Dhaka, Bangladesh, 4University of Sydney, 5University of Western Sydney, Sydney, Australia

Background and aims: We conducted a randomized controlled trial to evaluate the efficacy of extended peer counseling (PC) on child feeding practices

Methods: The study was conducted in Mirpur, urban Dhaka. Eighteen clusters received PC intervention and other 18 clusters served as control. Pregnant women were enrolled during the third trimester of pregnancy. A total of 13 counseling visits were made from third trimester until the baby was 12 months old. Data on BF and CF practices, were collected at baseline and until the baby is 18 months old. The major outcome variables were 1st hour initiation of BF (EIBF), rate of EBF, age of introduction of CF, dietary diversity (DD).

Results: A total of 2050 pregnant women were enrolled. There were significant differences in EBF (65% vs 39%, p<0.001) , introduction of CF at 6-8 months (79% vs 66%, p <0.001) and DD (59% vs 45%, p <0.001) in intervention and control respectively. The proportion of children given animal food was 62.2% in the PC group and 42.4% in the control (p<0.01).

Conclusions: Extended peer counseling support improved both BF and CF practices substantially and should be scaled-up and incorporated with other existing MNCH program

Keywords: EBF, Counseling
Child Health and Survival: Global health

FACTORS ASSOCIATED WITH ACUTE DIARRHEA IN UNDER-FIVE CHILDREN IN OBUDU NIGERIA

Akwagiobe F. Odey1, Ani Etokidem2, Martin Meremikwu3
1Paediatrics, 2Comm Med, University of Calabar, Calabar, 3Paediatrics, University of Calabar, Calabar, Nigeria

**Background and aims:** Diarrhea is one of the leading causes of childhood morbidity and mortality. Developing countries are burdened with this preventable and treatable condition. The aim of this study was to identify factors associated with acute diarrhea in under-5 children in Obudu, Nigeria.

**Methods:** This was a cross sectional descriptive study. Cluster sampling technique was used. An interviewer administered questionnaire adapted from the UNICEF monitoring tool was used. SPSS was used to analyse the data.

**Results:** Total of 604 under-5 children in 336 households were reviewed. Prevalence of acute diarrhea was 24.3%. A quarter of mothers practiced exclusive breastfeeding, 32.4% administered oral fluids as first action and main source of drinking water was unprotected stream (56.3%). Most respondents lacked toilet facilities (68.5%) and were predisposed to diarrhea (p=0.012). Factors associated with diarrhea were age under two years ($X^2 = 18.89$, p<0.01) or drinking water from unprotected stream ($X^2 = 14.02$, p<0.01). Protective factors were education up to secondary school ($X^2=12.80$, p<0.05) and drinking water from protected wells ($X^2=24.91$, p<0.01).

**Conclusions:** Risk factors for acute diarrhea were unsafe disposal of sewage, age under-2 and drinking water from unprotected stream. Maternal education was protective. Health education for mothers of under-5 children on good sanitary habits and safe drinking water are recommended.

**Keywords:** acute diarrhea, factors, under-5 children
FEASIBILITY AND CLINICAL OUTCOMES OF IMPROVED OXYGEN SYSTEMS IN DISTRICT HOSPITALS IN LAO PDR: A FIELD TRIAL
Amy Gray¹, Melinda Morpeth*¹
¹Paediatrics, University of Melbourne, Melbourne, Australia

Background and aims: Hypoxia is a common and potentially fatal complication of common childhood and neonatal conditions including pneumonia. Many low-income settings lack access to affordable and reliable oxygen. Addressing this need has the potential to improve clinical outcomes. This study describes an intervention implementing oxygen concentrators systems in Lao district hospitals and the impact on outcomes for children under 5 with pneumonia.

Methods: Equipment use and repair were monitored over 2 years through observational visits. Using retrospective medical record review we assessed oxygen use, monitoring and clinical outcomes of children under 5 years admitted with pneumonia before and after the intervention in the both 10 intervention and 10 control hospitals.

Results: Despite significant maintenance needs equipment was sustained in hospitals over 2 years by local engineering capacity. Documentation of oximetry and oxygen use increased in all hospitals. The proportion of children discharged well increased in intervention (640/711 90% to 667/701 96%, P<0.001), and control hospitals (620/712 87% to 595/643 93%, P=0.001). In intervention sites, case fatality rates for pneumonia fell by two thirds, from 2.66 (95%CI 1.48-3.84) pre-intervention to 0.85 (95%CI 0.17-1.54) (P=0.01).

Conclusions: This research highlights the potential benefits of affordable and accessible oxygen systems in settings such as Lao PDR, but also the challenges to sustainability.

Keywords: children, oxygen, pneumonia
Background and aims: Facility-based kangaroo mother care (KMC) for infants weighing \(<2000\) grams (g) is associated with a 51% reduction in mortality. The World Health Organization states KMC should be initiated "as soon as newborns are clinically stable;" however, the majority of deaths occur in those who are unstable. This study aims to evaluate the feasibility of a randomized controlled trial (RCT) of early KMC (initiated within 48 hours of life) in unstable infants at Jinja Hospital in Uganda.

Methods: We will evaluate the number of eligible infants; the practicality of providing interventions in the KMC position; and personnel's accuracy in completing trial case reporting forms (CRFs) in a sample of 30 infants.

Results: We will determine the mean number of infants per week meeting proposed enrollment criteria; percent completion of CRFs; percent congruence on 10% of the sample randomly selected for double entry; and practicality of providing interventions in the KMC position.

Conclusions: If feasibility is demonstrated, this will pave the way for a RCT that will examine the effect of KMC on mortality versus incubator care among unstable infants \(<2000\)g, the results of which would have broad applicability for low-resource settings.

Keywords: Clinically unstable, Kangaroo mother care, KMC, Low Birth Weight, preterm infants
GLOBAL CAPACITY BUILDING FOR COMMUNITY FOCUSED HEALTH RESEARCH IN EASTERN AFRICA: REVIEW OF 7 YEARS EXPERIENCE OF MICORESEARCH

Noni Macdonald¹, Senga Pemba², Walter Mwanda³, Jerome Kabakyenga⁴, Tobias Kollmann⁵, Robert Bortolussi¹

¹Dalhousie University, IWK Health Centre, Halifax, Canada, ²Tanzanian Training Centre for International Health, Ifakara, Tanzania, United Republic of, ³UNITID, University of Nairobi, Nairobi, Kenya, ⁴Institute of Maternal Child Health, Mbarara University of Science and Technology, Mbarara, Uganda, ⁵University of British Columbia, Vancouver, Canada

Background and aims: Sub-Saharan African countries need community directed research to find local solutions for local health problems. MicroResearch (MR) is building capacity to find solutions for local maternal/child/adolescent health problems in 5 African countries. Objectives: To review 7 years experience with MR.

Methods: MR training occurred in 2-week workshops (WS) of ~25 health workers (HW) learning to apply community research skills. Interdisciplinary MR teams (~7/team) self-identified a community health question, outlined proposal overview at WS then post WS developed full proposal for international peer review, local ethics approval. Successful projects were funded (up to $2,000), carried out, reported and findings implemented. MR was evaluated at 7 years by review of data: WS participants, WS evaluations, proposals, projects, publications, outcomes, sites.

Results: Between 2008-15, 24 workshops were conducted at 7 African sites; 674 participants (45% F); 31% MD, 22% RN, 47% other. By Dec 2015, 58 projects had approval for funding: 40% focused on child health, 31% maternal, 4% adolescent and 35% on > one area; 21 were completed with 19 MR PubMed publications. Over 50% of project leaders were women. WS rated as excellent by >90%; ~20% noted MR changed culture of inquiry at work. MR principles are now embedded in undergrad/post grad HW curriculum 3 MR sites.

Conclusions: MR is building capacity in subSaharan Africa for community focused research at modest cost. MR finds local solutions for local problems that fit the context, culture and resources, improves health care, enhances inquiry and supports gender equity.

Keywords: adolescent health, Arica, community research, maternal and child health, MicroResearch, research capacity building
HELPING MOTHERS AND BABIES SURVIVE: IMPLEMENTATION TO IMPROVE MATERNAL AND
NEONATAL SURVIVAL

Sara Berkelhamer¹, Beena Kamath-Rayne², Suzanne Stalls³, William Keenan⁴, Susan Niermeyer⁵ and
Helping Babies Survive and Helping Mothers Survive Planning Groups
¹Neonatology, University at Buffalo, SUNY, Buffalo, ²Perinatal Institute and Global Health Center, Cincinnati
Children's Hospital Medical Center, Cincinnati, ³American College of Nurse-Midwives, Washington DC,
⁴Neonatology, St Louis University, St Louis, ⁵Neonatology, University of Colorado School of Medicine, Aurora,
United States

Background and aims: Reduction of maternal/neonatal (MN) mortality remains a high priority under the
Sustainable Development Goals. Helping Babies Survive (HBS) programs include Helping Babies Breathe
(HBB), Essential Care for Every Baby (ECEB) and Essential Care for Small Babies (ECSB). Helping Mothers
Survive (HMS) programs include Bleeding after Birth (BAB), Pre-Eclampsia/Eclampsia (PE-E), and Threatened
Preterm Birth. All share similar learner-based educational strategies. Our objective is to review features of
HBS/HMS that increase MN survival.

Methods: Implementation is assessed using a logic model to examine coverage/quality/impact on mortality.
Data are derived from program reports and published studies.

Results: HBB implementation occurred in 77 countries, 52 with national plans. Bundled training in 2 or more
HBS/HMS programs is effective in addressing primary causes of maternal/neonatal death. All HBS teaching
materials, including translations, are freely available online to facilitate distribution. HBB results in consistent
reductions in fresh stillbirths and early NMR. Training produces documented improvement in knowledge and
skills, but continued, deliberate practice of skills and quality improvement measures are necessary to change
provider performance.

Conclusions: Coordination of implementation, advocacy and research contributes to rapid dissemination of
HBS/HMS programs, and highlights key approaches that improve survival. Continued efforts to expand
coverage and improve quality will maximize survival. Additional assessment of wide scale implementation of
these programs and impact on MN mortality is underway.

Keywords: neonatal mortality, Neonatal resuscitation, neonatal survival
IMPACT OF EBOLA VIRUS EPIDEMIC ON ENHANCED WELL CHILD CARE FOR LIBERIAN TEENS AND THEIR INFANTS

Roseda Marshall1, Elinor Graham2

1Pediatrics, Liberia College of Physicians and Surgeons, Monrovia, Liberia, 2Pediatrics, University of Washington, Seattle, WA, United States

Background and aims: The Enhanced Well Child Care Project began April’13 to provide clinic services and health education in clinic and on home visits to teen parents and their infants and as a training setting for health personnel to learn normal infant and child development and interventions to improve outcomes for teen parents and their infants.

Methods: Chart reviews done on mother/infant pairs enrolled in the program before the Ebola virus epidemic (EVE) closed all hospitals and clinics at the end of May’14 and again after the program resumed Dec’14 post-EVE. Outcomes were compared to data in the Liberia Demographic and Health Survey of 2013 (LDHS’13).

Results: Pre-EVE, exclusive breastfeeding for the first 6 mos occurred in 49% of infants compared to 35% of all infants in the LDHS’13. Reliable family planning (injections and implants) were used by 44% of the mothers compared to 13% for teen mothers in the LDHS’13. Malnutrition (< 2SD Z score) was found in 11% of the infants compared to 15% in LDHS’13. Post- EVE there was an increase in malnutrition, more families lost to follow-up, and marked decline in immunizations rates.

Conclusions: EVE halted preventive services and increased malnutrition in infants of teens. Addition of Teen Parent Peer Counselors to the program in April ’15 increased enrollment with more high risk teen families receiving services, improvement in immunization rates and nutrition.

Keywords: adolescent, Exclusive breast feeding, family planning, Immunization, infant of teen parent, malnutrition, teen parent
IMPROVED MATERNAL MALARIA AND INFECTION TREATMENT IN PREGNANCY REDUCES MARKEDLY THE INCIDENCE AND PREVALENCE OF STUNTING AMONG UNDER-5 YEAR OLD CHILDREN IN MALAWI

Per Ashorn¹, Lotta Alho¹, Yin Bun Cheung¹, Kenneth Maleta²
¹University of Tampere, School of Medicine, Tampere, Finland, ²School of Public Health and Family Medicine, College of Medicine, University of Malawi, Blantyre, Malawi

Background and aims: Growth failure i.e stunting affects a quarter of world’s children and is associated with morbidity, mortality and developmental delay. We have documented a positive impact of maternal malaria and infection control on newborn length in Malawi. Now we studied if the fetal gains were sustained and reflected in stunting prevalence and incidence in childhood.

Methods: We enrolled 1320 pregnant women in a randomised trial and treated them in pregnancy either with two doses of sulphadoxine-pyrimethamine (SP) malaria drug (control), (monthly SP or monthly SP and azithromycin antibiotic twice against other infections (AZI-SP). Child length was measured at birth and at 3-12 month intervals for 5 years.

Results: The mean child length was 0.4–0.7 cm higher and the prevalence of stunting 6-11 %>points lower in the AZI-SP than the control group throughout the 5-year follow-up. The cumulative incidence of stunting by 5y was 64% in the AZI-SP, 74% in monthly-SP and 77% in the control group. Most differences between AZI-SP and control were statistically significant; monthly SP did not differ from control.

Conclusions: Improved maternal malaria and infection control in pregnancy will have a positive effect on fetal length gain that is sustained for five years and reduces the incidence and prevalence of stunting in early childhood in rural Malawi.

Keywords: Growth failure, Maternal infection, preventive treatment, Stunting
Child Health and Survival: Global health

IS IMCI STILL THE MOST RELEVANT STRATEGY TO DELIVER PRIMARY HEALTH CARE FOR UNDER-5’S IN THE SDG ERA?

Haroon Saloojee¹, Himani Pandya¹, Wiedaad Slemming¹

¹Paediatrics and Child Health, University of the Witwatersrand, Johannesburg, South Africa

Background and aims: Since 1995, the Integrated Management of Childhood Illness (IMCI) strategy has been adopted by over 110 countries globally. Does it remain relevant two decades later?

Methods: The literature on IMCI implementation between 1995 and 2016 was reviewed using Pubmed.

Results: There is a relative paucity of literature on the implementation of IMCI. Described weaknesses include trained staff not using the approach, low-quality clinical encounters, practitioners ignoring elements of the consultation (e.g. counselling), poor supervision and mentoring, and limited implementation of the community component. Scanty insight exists on health system responses to constraints, and success thereof.

Nevertheless, IMCI remains the most systematic and evidence-based approach to managing common childhood illness. Adaptations to be considered include incorporation of less severe illnesses (e.g. skin conditions), better integration with other vertical programmes (e.g. HIV), standardised recording, outcomes being assimilated into routine data systems and stronger local leadership and budgetary support.

Conclusions: With few feasible alternative approaches, IMCI will likely remain the preferred strategy to manage under-5 illness globally in the next decade. However, attention to health system building blocks that can overcome implementation obstacles and accelerate successes are deserving of more public health attention.

Keywords: IMCI, Primary health care, Sustainable development goals, under five
JORDAN, IN THE EYE OF THE STORM AND POLIO ERADICATION

Najwa Khuri-Bulos¹, Ratib Srour², Mohammad Abdallat³
¹Infectious Disease and Vaccine Center, University of Jordan, ²communicable disease, ³Communicable Diseases, Jordan Ministry of Health, Amman, Jordan

Background and aims: The last case of polio occurred in Jordan in 1992 and Jordan has been polio free due to high immunization coverage and good quality AFP surveillance. The challenge has been maintaining the country polio free despite repeated waves of refugees from Iraq and Syria for the past twenty years.

Methods: In order to sustain polio control interventions included >90% routine immunization coverage using OPV since 1979, the use of a combined IPV/OPV routine schedule since 1995, preemptive OPV vaccination at points of entry of refugees, free immunization services to all children regardless of national origin and multiple mass immunization rounds when needed. Early in the Syrian crisis, polio vaccine was given to children at points of entry, Measles/Polio campaigns were conducted at two camps (71,000 individuals up to 30 y) and Mass campaigns in 2 Governorates bordering Syria and Iraq 622,000 children up to 15 y) in June 2013. Four rounds of Mass OPV were conducted in 2014 in response to the WP outbreak for all children <5 in Jordan and High Risk Group campaigns are ongoing.

Results: Jordan continues to be free of polio while maintaining AFP surveillance despite mass migration.

Conclusions: A combination of interventions consisting of excellent polio vaccination coverage, coupled with a combined IPV/OPV program and widely implemented mass vaccination targeting all age groups at risk is effective in controlling polio spread in the country.

Keywords: None
KANGAROO MOTHER CARE FOR UNSTABLE INFANTS: ACCEPTABILITY TO PARENTS AND PROVIDERS IN UGANDA

Melissa Morgan*1,2, Harriet Nambuya3, Peter Waiswa4, Cally Tann5, Joy Lawn2, Janet Seeley6,7
1Dept of Pediatrics, University of California San Francisco, San Francisco, United States, 2MARCH Center, London School of Hygiene & Tropical Medicine, London, United Kingdom, 3Dept of Pediatrics, Jinja Hospital, Jinja, 4Dept of Health Policy, Planning, & Management, Makerere University, Kampala, Uganda, 5Institute for Women’s Health, University College London, 6Dept of Global Health & Development, London School of Hygiene & Tropical Medicine, London, United Kingdom, 7Social Science Program, Medical Research Council/Uganda Virus Research Institute, Entebbe, Uganda

Background and aims: Facility-based kangaroo mother care (KMC) for infants weighing ≤2000 grams is associated with a 51% reduction in mortality. The World Health Organization states that KMC should be initiated as soon as infants are stable. However, the majority of deaths occur among unstable babies. The aim of this study is to explore the acceptability of KMC for unstable infants to parents and providers at Jinja Hospital in Uganda.

Methods: This study will utilize semi-structured interviews of a purposive sample of 20 key stakeholders at Jinja Hospital. The sample will include parents of hospitalized infants and providers involved in the care of such patients. Data will be analyzed using a framework approach, which includes familiarization, identification of codes and themes, coding, and organizing codes and themes.

Results: Areas being explored include parent/provider-related factors (knowledge of KMC); infant-related factors (fear of complications or that infants will be monitored less closely); and facility-related factors (staff, resources, privacy).

Conclusions: Knowledge about the acceptability of KMC for unstable infants to parents and providers will be valuable across low-income settings where incubators are unavailable.

Keywords: Clinically unstable, Kangaroo mother care, KMC, Low Birth Weight, premature infant
KNOWLEDGE AND USE OF INSECTICIDE TREATED MOSQUITO NETS AMONG MOTHERS ATTENDING PAEDIATRIC CLINICS IN A TERTIARY HOSPITAL SETTING IN ABUJA, NIGERIA

Nafisah Ramatu Mohammed¹, Denis Richard Shatima² and Department of Paediatrics, National Hospital Abuja, Nigeria

¹Paediatrics, University of Abuja, College of Medicine Gwagwalada, Gwagwalada, ²Paediatrics, National Hospital Abuja, Abuja, Nigeria

Background and aims: Background: Malaria is among the leading cause of Morbidity and Mortality among under five children especially in sub-Saharan African and south east Asia. Recently, attention has focused on the prevention of transmission of the disease through the use of barriers and Environmental manipulations. One of such method is the use of Insecticide treated Nets (ITNs).

Objectives: This study was undertaken to determine the knowledge and use of ITNs by mothers who attend Paediatric Clinics at the National Hospital Abuja, Nigeria

Methods: Methods: A questionnaire was administered sequentially to mothers who consented to participate in the study while waiting for their child to be reviewed at the Paediatric Specialist follow up clinic of the hospital. Data generated was analyzed using appropriate software.

Results: Results: There were 146 responders with 72 (60.3%) of them having lower level of education while 67 (45.9%) has tertiary level of education with 14.4% who had no formal education at all. All the mothers knew that malaria can be prevented through appropriate use of Mosquitoes nets and they also identify it as the most common form of prevention strategy. Most of the mothers (58.2%) learn about ITNs from other health workers than Medical Doctors. Despite the fact that 80.8% of the mothers had bed nets at home, only 48% of them use it regularly.

Conclusions: Conclusion: More awareness on the use of Insecticide treated nets among the populace irrespective of their level of education as part of preventive strategy against Malaria is needed.

Keywords: knowledge Mothers, ITN usage
MANAGEMENT OF PAEDIATRIC TYPE 1 DIABETIC COHORT IN AWEIL, NORTHERN BAHR EL GHAZAL, SOUTH SUDAN

Lisa Umphrey1, Belen Caminoa1, Northan Hurtado1, Marco Olla1, Olukemi Ogundipe1, Klaudia Porten2, Elisabeth Poulet2, Manal Shams-Eldin1, Myrto Schaefer1
1Médecins Sans Frontières, 2Epicentre, Paris, France

Background and aims: Children with type-1 diabetes (T1D) in Sub Saharan Africa often go undiagnosed, and few have access to treatment. MSF supports maternal and child care in Aweil Civil Hospital; since 2011, teams noticed a rising trend in children admitted with T1D.

Methods: T1D children are often diagnosed at admission with diabetic ketoacidosis (DKA), confirmed by POC blood glucose. They are enrolled in MSF's program consisting of ICU care, IPD stabilization and outpatient follow-up. Patients are discharged with a month supply of long-acting insulin and injection supplies; no home glucose monitoring is available, so patients may be readmitted with DKA. Retrospective data analysis is ongoing.

Results: Current T1D cohort is 45 children, coming from a 30,500 km² catchment area. Main expected results are patient characteristics on admission (gender, age, location, nutritional status, education level, and proportion of T1D children presenting in DKA), frequency of re-hospitalizations and of DKA at follow up, length of hospital stay, outcome of hospitalizations, length and frequency of follow up visits and proportion of children with controlled glycaemia at last follow up visit.

Conclusions: Upcoming results will yield further insight into this unique patient population, and MSF’s clinical approach may aid other clinicians in similar contexts.

Keywords: None
MEASURING THE HEALTH STATUS OF PRIMARY SCHOOL CHILDREN IN TONGA
Fiona Langridge¹, Cameron Grant², Teuila Percival¹, Malakai ‘Ofanoa¹, Lisa Hamm³, Toakase Fakakokiaetau⁴, Sione Hufanga⁵
¹Pacific Health, ²Paediatrics: Child and Youth Health, ³Optometry and Vision Science, The University of Auckland, Auckland, New Zealand, ⁴Paediatrics, ⁵Biostatistics, Vaiola Hospital, Nuku'alofa, Tonga

Background and aims: In Tonga child health issues in primary school aged children are not well defined. Our aim was to develop and pilot a comprehensive approach to measuring the health of primary school children in Tonga.

Methods: A Delphi Method was used to develop a survey tool of Tongan primary school-aged children. Data describing admissions to Vaiola Hospital, Tonga (2009-2013) for children ages 5-12 was analysed. The survey tool was piloted in Tonga in 2015 with 249 children sampled from three primary schools.

Results: A survey tool was developed with biometric measurements of anthropometry, vision, hearing and oral health alongside a holistic questionnaire. Preliminary findings included 60% of children with cavities in their teeth, 16% children requiring referral to ENT and 4% having vision issues.

Conclusions: In this pilot study consideration was given to what aspects of health to measure and how to adapt valid and reliable methods to the Tongan context. Child health screening proved feasible using a tablet based questionnaire, alongside simple vision, hearing, anthropometry and oral health checks at three primary schools in Tonga. The survey identified health issues that are preventable and/or treatable.

Keywords: Child Health Survey, Global Health, Pacific Islands, School Health Services
Background and aims: Explore the relationship between parents/guardians knowledge and nutritional status of children at a district hospital serving a densely populated area in Nairobi not studied previously.

Methods: Mixed method quantitative: cross sectional descriptive quantitative survey and qualitative focused group discussion.

Nutrition status using weight for height WHO; guardian knowledge scale

Results: Prevalence malnutrition-3.5%, stunting 9.1%, underweight 3.8%. Guardian nutrition knowledge above average. No association level education and nutritional status. Linear regression: OR 0.15; CI 0.03-0.65; p 0.012.

Conclusions: Gaps in knowledge exist other factors may influence the translation of nutritional knowledge to practice and further work is required to reduce the knowledge gap and address factors that practice.
Keywords: 6 months to 5 years, children, guardians, knowledge, Mama Lucy Kibaki District Hospital, millennium development goals, Nairobi, parents, Sustainable development goals, under nutrition
MODELING EFFECTS OF COMMUNITY EMPOWERMENT AND WOMEN-CENTERED INTERVENTIONS TO AVERT CHILD DEATHS IN NIGERIA, DEMOCRATIC REPUBLIC OF CONGO, ETHIOPIA, INDIA, AND PAKISTAN

Anita Raj¹ on behalf of First Author, Katherine McClendon¹, Rafael Obregon², Ketan Chitnis², Jennifer Yore¹, Tess Page³

¹Center on Gender Equity and Health, University of California-San Diego, San Diego, ²Communication for Development, UNICEF, New York, ³United Internet Foundation for UNICEF, San Diego, United States

Background and aims: Community Empowerment (CE) and Women-Centered (WC) interventions show promise in changing culturally embedded practices that compromise child survival, including those related to use of skilled birth attendants (SBA) and exclusive breastfeeding (EBF). This study modelled number of child deaths that could be averted by effective CE and WC interventions brought to scale in select nations with high numbers of child deaths-Nigeria, Democratic Republic of the Congo, Ethiopia, India, Pakistan.

Methods: Intervention effect sizes on SBA and EBF for each intervention type (CE, WC) were used to model intervention impact at scale, using the Lives Saved Tool (LiST). Behavior coverage assumed 20%, 40% and/or 80% CE or WC intervention exposure, using the top levels that did not achieve saturation. LiST models neonatal deaths for SBA, and post-neonatal deaths for EBF. From this, the number of under-5 child deaths averted through CE and WC was calculated for each country for the period 2015 to 2020.

Results: Effective CE interventions document an effect size of 1.8 and 2.4 for SBA and EB, respectively, and their scale up can avert 499,060 under-5 deaths across our five nations of focus from 2015-2020. Effective WC interventions document an effect size of 1.8 and 3.1 for SBA and EB, respectively, and can avert 470,628 under-5 deaths across these same countries and time period.

Conclusions: Effective CE and WC interventions can improving key health behaviors promoting child survival and their scale up in these countries can help curb global child mortality rates.

Keywords: Child health, Community engagement, Exclusive breastfeeding, Handwashing, Skilled birth attendant, Social and behavioral interventions
MOVING BEYOND TRAINING: LESSONS FROM AN EVALUATION OF EFFORTS TO STRENGTHEN NEONATAL RESUSCITATION IN UGANDA

Lyndsey Wilson-Williams, MPH¹, Jolly Beyeza-Kashesya, MBChB, MMED, PhD², Winifride Mwebesa, MD, MPH, DTM&H³, Gabrielle Nguyen, MPH¹, Sam Ongom, B STAT³, Patricia Pirio, MBChB, MPH³, Lara Vaz, SM, PhD¹

¹Save the Children, Washington DC, United States, ²Mulago Hospital, ³Save the Children International, Kampala, Uganda

Background and aims: In 2010 Uganda’s Ministry of Health introduced an integrated newborn care package, Helping Babies Breathe Plus (HBB Plus). In 2012 Save the Children, supported by Johnson & Johnson and the American Academy of Pediatrics, began a program to strengthen HBB Plus’s neonatal resuscitation component. We evaluated program implementation strength in 2015.

Methods: We sampled 24 health facilities across 4 regions, interviewing 94 persons at facility, district and national level. The sample was designed to capture differences across program phases, regions, and facility levels. Tools included facility surveys, knowledge & skills assessments, register reviews, and in-depth interviews.

Results: Only 41% of trained staff were retained in labor & delivery. Providers were on average only able to correctly demonstrate 66% of birth scenarios skills; more trained (64%) than untrained (47%) demonstrated correct skills. Infection control was deficient: 25% of HC IVs and 13% of HC IIs did not have a final disinfection or sterilization process for medical equipment. However, facility and district staff felt program effects were positive. Improvements cited included knowledge, skills and proper use and care of equipment. Poor register completion limited the ability to verify program effect on resuscitation attempts and outcomes.

Conclusions: Perceptions of improvement may not reflect actual skills, readiness or performance. Programs should focus beyond training and equipment provision to improving supervision, mentoring and data recording. Implementation strength should be assessed routinely.

Keywords: Birth Asphyxia, Helping Babies Breathe, neonatal resuscitation, Uganda
Background and aims: MSF began neonatal activities in Peshawar in 2012. Antibiotic resistance necessitates prescription of second and third line antibiotics in hospitals. Due to emerging failure of response to first line therapy, in late 2014 MSF began taking blood cultures to document resistance in early neonatal sepsis and to optimise protocols.

Methods: Prospective cohort study. Phase 1: blood culture for all neonates failing first line treatment (Ampicillin/Gentamycin) prior to change to second line (Ampicillin/Amikacin). Phase 2: blood cultures for all neonates with clinical sepsis prior to initiation of first line.

Results: (Jan-June 2015): Phase 1: 69 newborns admitted; 15 (22%) met blood culture criteria. 12 (80%) were positive, of which 10 (83%) were resistant to first line; all were fully sensitive to Amikacin. Phase 2: Of 95 blood cultures, 12 (13%) were positive, of which 9 (75%) were resistant to first line and 7 (78%) of those were sensitive to Amikacin; 1 (11%) showed intermediate sensitivity and 1 (11%) was resistant (both fully sensitive to Vancomycin).

Conclusions: A high proportion of blood cultures showed resistance to first line drugs; almost all were sensitive to Amikacin, inconsistent with reported wide-spread resistance to second line drugs. Preliminary results show that current MSF protocol is effective for Early Neonatal Sepsis in this hospital.

Acknowledgement: MoH and Aga Khan/Karachi Laboratory-Pakistan.

Keywords: None
NEONATAL RESUSCITATION PROGRAM CONTRIBUTES TO NEWBORN HEALTH IN CHINA: A TEN YEAR EXPERIENCE

Tao Xu¹, Huishan Wang¹, Qing Yue¹, Hongmao Ye², Renjie Yu³, Danhua Wang⁴, Qi Feng⁵, Lixin Wang⁶
¹National Center for Women’s and Children’s Health, China CDC, ²3rd Hospital of Beijing University, ³1st Hospital of Tinghua University, ⁴Peking Union Medical College Hospital, ⁵1st Hospital of Beijing University, ⁶Beijing Maternal and Children’s Health Hospital, Beijing, China

Background and aims: Newborn deaths account for over half of under 5 child mortality in China, and intrapartum-related injury accounts for much of mental retardation in children. Starting in 2004, a nationwide initiative was launched to have at least one person trained in neonatal resuscitation at every birth.

Methods: The main components of the China NRP included national instructor training, provincial instructor certification, cascading training, hospital-base NRP teams, and annual monitoring and evaluation. The impact evaluation data came from 350 representative hospitals.

Results: Incidence of Apgar score <7 at 1 minute decreased from 6.32% in 2003 to 1.79% in 2014 ($\chi^2=23.74$, $P<0.001$). The mortality from asphyxia in the delivery room decreased from 7.55 per 10,000 live births in 2003 to 1.64 per 10,000 live births in 2014 ($\chi^2=31.63$, $P<0.001$).

Conclusions: The introduction and implementation of NRP in China have been the work of multiple stakeholders and have already shown substantial benefits.

Disclosure: Supported by an educational fund from Jonhson &Johnson.

Keywords: China, Impact evaluation, neonatal mortality, Newborn Education Programs, Resuscitation
NEOWARM: AN INNOVATIVE AND TRANSFORMATIVE BIOMEDICAL DEVICE TO PREVENT NEWBORN HYPOTHERMIA

Sherri Bucher*1, William Combs2, David Muyodi3
1Pediatrics, Indiana University School of Medicine, 2Biomedical Engineering, IUPUI, Indianapolis, United States, 3Moi University School of Medicine, Eldoret, Kenya

Background and aims: Hypothermia is a leading newborn complication, underlying high global rates of neonatal mortality and morbidity, especially among prematurely-born and/or low birth weight infants. This problem is particularly acute in settings where access to functioning incubators and radiant warmers is limited. Skin-to-skin care (STS) is an effective and preferred method for prevention of hypothermia in small babies. However, STS care, particularly when it is required to be provided on a "continuous" basis, can be very burdensome for caregivers, resulting in poor compliance with the intervention.

Methods: Using a newborn simulator, we conducted focus groups and key informant interviews in Kenya to assess the feasibility and acceptability, and elicit feedback regarding changes in device design, for an initial, built prototype of a biomedical device, "NeoWarm," which is designed to prevent hypothermia and augment provision of STS care among small babies.

Results: NeoWarm is a potentially feasible and acceptable device among newborn infant caregivers, family stakeholders, and health providers in Kenya. Respondents stressed the importance of safety, affordability, and durability of the device.

Conclusions: Upon further development and testing, NeoWarm may prove to be a useful "middle-tech" solution to augment existing interventions for prevention of newborn hypothermia.

Keywords: Essential Care for Every Baby, Essential Care for the Small Baby, Essential Newborn Care, Hypothermia, Kangaroo mother care, low and middle income countries, Low Birth Weight, neonatal, Neonatology, premature infant, skin-to-skin care
NEWBORN CORD CARE PRACTICES AT OBIO COTTAGE HOSPITAL PORT HARCOURT, NIGERIA.
Jerome Elusiyan*1, Akanni Akinyemi2, Akinwumi Fajola3, Esther Ikpeme4, Rakiya Usman4, Olayinka Mosuro3
1Paediatrics, 2Demography, Obafemi Awolowo University, Ile-Ife, 3Community Health, SPDC, 4Paediatrics, Obio Cottage Hospital, Port Harcourt, Nigeria

Background and aims: Neonatal infection still remains a major contributor to Neonatal death in Nigeria. Adequate and proper cord care may reduce neonatal infection and Neonatal mortality. This study aimed to assess the knowledge and practice of mothers towards cord care.

Methods: A cross-sectional survey was conducted in which a semi-structured questionnaire was administered at the Ante-natal clinic of Obio Cottage hospital, an SPDC supported Public private partnership health facility in which 975 mothers were voluntarily recruited. Relevant data on biodata and knowledge and practice were obtained and analysed.

Results: Seventy five percent of respondent were aged between 20-34 years and 68.5% of them had tertiary education. 35.8% were either with their 2nd or 3rd pregnancy. Source of information on cord care were from antenatal health talks (72.5), social media (3.6%). Majority of the respondents were Ibos(60.9%). Knowledge Index (factor analysis) showed that 74.3% and 89.3% had good knowledge and good practice of cord care respectively. Only ethnicity showed a significant correlation with practice ($\chi^2$ 13.53; p=0.009).

Conclusions: There was a generally acceptable level of good knowledge and practice of cord care among the sampled population. Routine antenatal clinic should be encouraged in Nigeria.

Keywords: cord care, newborn care
NTA, A LOCALLY NAMED UNCLEAR CONDITION THAT CAUSES FAILURE TO THRIVE AMONGST THE UNDER FIVE CHILDREN IN SOUTHEASTERN NIGERIA, FOR WHICH PATIENTS PREFERENTIALLY SEEK ALTERNATIVE TREATMENT.

Chinonyelum Thecla Ezeonu¹, Daniel Igwe², Onyinye Anyanwu¹, Obumneme Ezeanosike¹, James Ojukwu¹, Emmanuel Onoh¹, John Nweze¹

¹Department of Pediatrics, ²Department of Pathology, FEDERAL TEACHING HOSPITAL ABAKALIKI, Abakaliki, Nigeria

Background and aims: The age old childhood condition locally called ‘Nta’ in most South eastern parts of the country Nigeria is unclear and a challenge to health care professionals whose patients refuse orthodox medicine and choose herbal treatment. This study was to find the typical features of this condition as perceived by the populace

Methods: two hundred and twenty six questionnaires on symptoms and signs were satisfactorily filled by participants residing in parts of Ebonyi state. Data were analysed using SPSS version 15. Cross tabulations and comparison of means were done using chi square with level of significance set to p<0.05.

Results: Over 90% (217/231) of the respondents including Nurses and community health extension workers, believed in the existence of ‘Nta’ with significant variation across levels of education (p=0.019); A total of 82.3% (190/231) reported peak occurrence between the ages of one to three months. Features were; Weight loss (94.4%), Excessive cry (89.2%), Dry skin (87.9%), Restlessness (86.6%), sleeplessness (80.5%), appearance of whitish/dyspigmented hair on skin (77.6%), etc. Most respondents were unsure of cause, some assume infective and fewer assume dietary cause. A total 82.7% (191/231) reported that the traditional healers were the best managers of ‘nta’.

Conclusions: The level of belief in the existence of Nta is significant and deserves a research into the cause of the condition. The use of alternative medicine is indeed a challenge for us to use reason and wisdom to deal with culture, belief and illnesses.

Keywords: Alternative medicine, Failure to thrive, ‘Nta’, under five children
Child Health and Survival: Global health

NUTRITION AND HEALTH STATUS SURVEY OF LEFT-BEHIND CHILDREN AGED UNDER SIX IN RURAL CHINA

Shuaiming Zhang¹, Tao Li¹, Ni Jia¹, Yaohua Dai¹

¹Integrated Early Children Development, Capital Institute of Paediatrics, Beijing, China

Background and aims: A large proportion of children aged under six have been left behind due to parental migration in rural China. We conducted a preliminary cross-sectional survey to investigate the nutrition and health status of these left-behind children aged under six (LBC).

Methods: A total of 742 LBC, comprising 300 and 442 children left behind as a result of migration of either or both parents, respectively, and 764 controls were enrolled from two counties, one in Jiangxi province and the other in Guizhou province, China. Their caregivers completed questionnaires on demographics, feeding, two week prevalence. Height, weight and finger hemoglobin were measured for all children.

Results: The two week prevalence of acute respiratory infection was lower for LBC (19.5%) than for their control counterparts (27.6%). The two week prevalence of diarrheal was lower for LBC (8.7%) than for their control counterparts (11.0%). The prevalence of anemia of LBC (21.7%) was lower than that of their control counterparts (27.9%). The prevalence of underweight, stunting and wasted among our all surveyed children were 5.6%, 14.0% and 1.2% with no significant difference between LBC and their control counterparts.

Conclusions: The status of nutrition and health of left-behind children is not worse than that of non-left-behind children, but the overall nutritional status of children in rural areas are still not optimistic. In order to effectively improve nutrition and health status of children in rural areas, we should strengthen health education on scientific feeding and parenting.

Keywords: child, Health, Left behind, Nutritional Status, Rural China
**Background and aims:** The lack of adequate infrastructure, equipment, supplements and inadequate trained health personnel and limited advisors leads to high malnutrition, stunting and wasting in South Africa. This paper reports assessment of available nutritional services in Emfuleni sub district.

**Methods:** A cross-sectional study design in four facilities of various care levels, assessing nutritional services and performance on selected child health indicators. The Nutrition Assessment, Counselling and Support Checklist was used to assess services provided, equipment available and information management. Epi-info used for data analysis.

**Results:** 50% of the facilities had a copy of the others policies, materials and supplements required during a nutrition consultation. Nutrition service providers are adequately trained. However, inability to adequately detect and treat cases of malnutrition was evident when comparing available resources against clinical indicators performance. The misdiagnosis of underweight, severe acute malnutrition resulted in six fatalities at the district hospital's paediatric ward, during the study period.

**Conclusions:** Availability of nutrition policies, supplements, and skilled human resources does not translate to adequate diagnosis and management of babies with nutritional needs. Mentoring of health personnel leads to competence and improve the child health outcomes.

**Keywords:** nutritional services, health facility, health systems, Emfuleni sub-district South Africa
Child Health and Survival: Global health

NUTRITIONAL STATUS OF CHILDREN 6 TO 24 MONTHS IN SEDIBENG DISTRICT IN SOUTH AFRICA

Motshana Phohole¹, Yajna Lalbahadur¹, Busisiwe Nkosi²
¹Monitoring and Evaluation, ²Research, PATH, Johannesburg, South Africa

Background and aims: In South Africa, stunting is the most common form of undernutrition in children under two years, followed by underweight and wasting. Strengthening child health services focusing on the first 1 000 days of life is key to addressing these poor outcomes. The Window of Opportunity project conducted an assessment of the nutritional status of children 6-24 months in Sedibeng District to guide the development of community based nutritional interventions.

Methods: The assessment followed a cross-sectional study design during August and September 2015. Purposive sampling was used to select health facilities supported by PATH, and a control group. A convenience sampling was used to enrol participants. The anthropometric indices and caregiver questionnaires were used for data collection. Epi-info was used for data analysis.

Results: Of the 1133 babies aged 5 to 28 months enrolled, 28% were stunted and 2% were severely wasted. Furthermore, 1% and 3% had severe and moderate acute malnutrition respectively. The mean weight-for-age z-score was lower in non-supported facilities. No difference was observed in height-for-age z-scores.

Though 40% of 826 moms never initiated breastfeeding, 96% continued post 6 months of age but declined by 12 months. The duration was greater at PATH support sites. Baby feeding post six months was as expected for healthy feeding practices.

Conclusions: Nutritional support during pregnancy and early childhood need to be strengthened to reduce the impact of child malnutrition and ensure good health outcomes.

Keywords: Emfuleni sub-district South Africa, Health facility, Health systems, Nutritional services
Background and aims: Oral Rehydration Therapy (ORT) is a core component of the childhood survival strategies to reduce child mortality and morbidity due to diarrhoeal disease with its fatal dehydrating complication. This strategy is indispensable to the attainment of the International Society of Nephrology’s (ISN) aim to eliminate preventable deaths from acute kidney injury (AKI) by year 2025. Diarrheal disease is the second most common cause of morbidity and mortality in children at our center. This interventional study assessed the knowledge and the practice of ORT among caregivers, educated and trained them on the management of diarrhoeal diseases and practice of ORT. Oral rehydration salt (ORS) was also distributed.

Methods: An interviewer-administered questionnaire was used following informed consent. Consented caregivers of wards attendees of FMC Asaba were: assessed on their knowledge and their practice of ORT, educated on childhood diarrheal diseases, trained on practice of ORT and had ORS distributed to them. These assessments were done on the spot and 6 weeks after health.

Results: There were 266 respondents and 231 were mothers. The immediate impact of the health talk on the knowledge and the practice of ORT was laudable, p=<0.0001 and educational attainment of the respondent influenced the immediate post health talk knowledge of ORT, p= 0.009. The age of the respondent predicted the long term impact of health talk on practice of ORT, p=0.020.

Conclusions: Knowledge and practice of ORT are not optimal but can be improved by regular education.

Keywords: Child Survival, Diarrhoea, Knowledge, Oral rehydration therapy, Strategy
OUTCOMES OF A RURAL COMMUNITY-BASED HELPING BABIES BREATHE PILOT PROJECT

Chris Buresh 1, 2, Asha Leichtman 3, Jean Yves Alliance 4, Michelle Kompare 5, Catherine Valukas 6, Caitlin Foley 7, Ginny Ryan 8

1 Emergency Medicine, University of Iowa, Iowa City, 2 Community Health Initiative, Haiti, Coralville, 3 Dartmouth Geisel School of Medicine, Hanover, United States, 4 Community Health Initiative, Haiti, Arcahaie, Haiti, 5 Neonatology, St. Luke’s Health System, Kansas City, 6 Virginia Commonwealth University School of Medicine, Richmond, 7 East Virginia Medical School, Norfolk, 8 University of Iowa, Iowa City, United States

Background and aims: Community Health Initiative Haiti (CHI), an organization working in rural Haiti, has witnessed high rates of infant mortality. CHI adapted the Helping Babies Breathe (HBB) neonatal resuscitation curriculum to a community setting and added education on breastfeeding and birth spacing.

Methods: Community Health Workers (CHWs) are trained in HBB, identify pregnant women through home visits and rural clinics, and provide 3 trainings to the mother or person who will attend the delivery. The pregnant woman also receives a home ‘birthing kit’. Outcomes are gathered at a post-partum visit. We compared HBB outcomes with those of a group of women who did not participate.

Results: 81 women enrolled in HBB and completed at least 1 training; 72 of these women delivered 73 babies. 53/72 (74%) women delivered at home, 19/72 delivered at the hospital. Of enrollees, 25/66 (38%) had a birth attendant who participated in at least one HBB training. 40/64 mothers who delivered (62%) felt HBB was helpful. 2/73 HBB babies (2.7%) died and 4/73 (5%) were ‘sick,’ compared to 1/23 (5%) non-participant babies who died and 4/23 (20%) who were sick. All mothers were alive; 3/72 HBB mothers (4.2%) were ‘sick’ compared to 5/20 (25%) of non-participant mothers who were ‘sick.’

Conclusions: A simple, community-based neonatal resuscitation program with added post-partum education for attendants of home deliveries in rural Haiti may be effective in reducing maternal and neonatal morbidity and mortality.

Acknowledgments: This work was supported by a grant from the International Pediatric Association Foundation

Keywords: child survival, community based intervention, Maternal Child Health, Neonatal resuscitation, peer-to-peer training
POISONOUS INGESTIONS IN CHILDREN AT GPHC: CAN WE DECREASE THE INCIDENCE AND NUMBER OF ADMISSIONS?

Sherelyn Stanton¹, Narendra Singh², Andrea Hunter³, ⁴
¹Department of Paediatrics, Georgetown Public Hospital Corporation, Georgetown, Guyana, ²Humber River Hospital, ³Department of Pediatrics, McMaster’s Children’s Hospital, Ontario, ⁴St Joseph’s Healthcare, Hamilton, Canada

Background and aims: Poisonings in children account for a large number of ER visits and hospital admissions worldwide. This study was conducted to determine the previously unevaluated impact of childhood poisoning on society and the health care system at the national referral hospital, i.e. Georgetown Public Hospital Corporation (GPHC), Guyana.

Methods: A retrospective chart review was conducted of all patients (<13 years) admitted to the Paediatric ward, GPHC for poisonous ingestions from January to December 2011.

Results: Of 91 admissions for poisonous ingestions, 4 were intentional. Ages primarily affected were 1 and 2 years old (26) 28.6% each, whilst least affected were <1 year and 3 year old groups (9) 9.9% each. Kerosene was most often ingested (32) 35.2%. Induced vomiting occurred in (32) 35.2% of these children. Thirty one (31), 53 and 7 patients had no, mild or severe symptoms respectively. There were no fatalities. The mean length of stay post-ingestion was 2.42 days (SD+/-2.18) with no ICU admissions. Medications were administered to 85 patients and 66 patients had labs done with a maximum of 8 labs/patient. There were 25 patients admitted via referral.

Conclusions: Childhood accidental poisoning consumes significant amounts of health care resources which may be reduced by reviewing admission criteria and need for investigations, creation of management protocols and public education initiatives.

Keywords: Admission, Children, Ingestion, Poison
Background and aims: Background: Optimal allocation of scarce resources necessitates early identification of children at risk of adverse outcome.

Aim: In children with pneumonia, to identify clinical features at presentation, that can be used to predict adverse outcome (i.e death).

Methods: Children (1 month-12 years) with severe/very severe pneumonia (WHO IMCI definition) constituted the study cohort. Those with symptoms >7 days or prior antibiotics >24 hours, were excluded. Demographic data, presenting symptoms, examination findings, and laboratory investigations, were compared among those with and without adverse outcome.

Results: The cohort comprised 2191 children; 269 (12.3%) had adverse outcome. Figure 1 shows odds ratio [95% CI] of various clinical and laboratory characteristics in the two groups. History of feeding difficulty, altered sensorium, and convulsions at presentation, strongly correlated with adverse outcome. Respiratory rate >110% and >120% of age-specific cut-off, as well as severe malnutrition, hypoxia, and central cyanosis were additional predictors. Presence of wheeze (on history and/or examination) was associated with favourable outcome. None of the laboratory investigations (except Gram negative bacteremia) could predict adverse outcome.

Conclusions: The presenting features and examination findings associated with adverse outcome in this cohort can be used to triage children with pneumonia for urgent management, intensive monitoring and prioritization for assisted ventilation; thereby facilitating evidence-based allocation of scarce resources.
Figure 1: Presenting features and laboratory investigations predicting adverse outcome

<table>
<thead>
<tr>
<th></th>
<th>Children with adverse outcome (n=269)</th>
<th>Children with no adverse outcome (n=1922)</th>
<th>Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age &lt;12 mo</td>
<td>190 (70.6%)</td>
<td>1227 (63.8%)</td>
<td>1.36 [1.03, 1.80]</td>
</tr>
<tr>
<td>Female Gender (%)</td>
<td>89 (33.1%)</td>
<td>557 (29.0%)</td>
<td>1.21 [0.92, 1.59]</td>
</tr>
<tr>
<td><strong>Symptoms (noted by parents)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cough (%)</td>
<td>229 (85.1%)</td>
<td>1801 (93.7%)</td>
<td>0.38 [0.26, 0.56]</td>
</tr>
<tr>
<td>Breathing difficulty (%)</td>
<td>257 (95.5%)</td>
<td>1740 (90.5%)</td>
<td>2.24 [1.23, 4.08]</td>
</tr>
<tr>
<td>Fever (%)</td>
<td>220 (81.8%)</td>
<td>1600 (83.2%)</td>
<td>0.90 [0.65, 1.26]</td>
</tr>
<tr>
<td>Feeding difficulty</td>
<td>87 (32.3%)</td>
<td>254 (13.2%)</td>
<td>3.14 [2.35, 4.18]</td>
</tr>
<tr>
<td>Altered consciousness</td>
<td>94 (34.9%)</td>
<td>252 (13.1%)</td>
<td>3.56 [2.68, 4.73]</td>
</tr>
<tr>
<td>Convulsions</td>
<td>17 (6.3%)</td>
<td>58 (3.0%)</td>
<td>2.17 [1.24, 3.78]</td>
</tr>
<tr>
<td>Chest indrawing</td>
<td>185 (68.8%)</td>
<td>1229 (63.9%)</td>
<td>1.24 [0.94, 1.63]</td>
</tr>
<tr>
<td>Audible wheeze</td>
<td>74 (27.5%)</td>
<td>924 (48.1%)</td>
<td>0.41 [0.31, 0.54]</td>
</tr>
<tr>
<td><strong>Examination findings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RR &gt;110% of age-specific cut-off</td>
<td>232/269 (86.2%)</td>
<td>1331/1922 (69.3%)</td>
<td>2.78 [1.94, 3.99]</td>
</tr>
<tr>
<td>RR &gt;120% of age-specific cut-off</td>
<td>169/269 (62.8%)</td>
<td>969/1922 (50.4%)</td>
<td>1.66 [1.28, 2.16]</td>
</tr>
<tr>
<td>Severe malnutrition</td>
<td>178 (66.2%)</td>
<td>907 (47.2%)</td>
<td>2.19 [1.67, 2.86]</td>
</tr>
<tr>
<td>Oxygen saturation &lt;92%</td>
<td>113 (42.0%)</td>
<td>447 (23.3%)</td>
<td>2.39 [1.84, 3.11]</td>
</tr>
<tr>
<td>Oxygen saturation &lt;95%</td>
<td>165 (61.4%)</td>
<td>864 (45.0%)</td>
<td>1.94 [1.50, 2.52]</td>
</tr>
<tr>
<td>Central cyanosis</td>
<td>39 (14.5%)</td>
<td>108 (5.6%)</td>
<td>2.85 [1.93, 4.21]</td>
</tr>
<tr>
<td>Crackles</td>
<td>207 (77.0%)</td>
<td>1460 (76.0%)</td>
<td>1.06 [0.78, 1.43]</td>
</tr>
<tr>
<td>Bronchial breathing</td>
<td>5 (1.9%)</td>
<td>46 (2.4%)</td>
<td>0.77 [0.30, 1.96]</td>
</tr>
<tr>
<td>Wheeze</td>
<td>43 (16.0%)</td>
<td>540 (28.1%)</td>
<td>0.49 [0.35, 0.68]</td>
</tr>
<tr>
<td>Need for intensive care</td>
<td>230 (85.5%)</td>
<td>572 (29.8%)</td>
<td>13.92 [9.78, 19.82]</td>
</tr>
<tr>
<td>Need for ventilation</td>
<td>222 (82.5%)</td>
<td>164 (8.5%)</td>
<td>50.63 [35.57, 72.07]</td>
</tr>
<tr>
<td><strong>Laboratory investigations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemoglobin &lt;10 g/dl</td>
<td>127 (47.2%)</td>
<td>898 (46.7%)</td>
<td>1.02 [0.79, 1.32]</td>
</tr>
<tr>
<td>TLC &gt; 11000/mm³</td>
<td>127 (47.2%)</td>
<td>945 (49.2%)</td>
<td>0.92 [0.72, 1.19]</td>
</tr>
<tr>
<td>TLC &lt;4000/mm³</td>
<td>8 (3.0%)</td>
<td>46 (2.4%)</td>
<td>1.25 [0.58, 2.68]</td>
</tr>
<tr>
<td>WHO Class 1 chest xray</td>
<td>150 (55.8%)</td>
<td>1120 (58.3%)</td>
<td>0.90 [0.70, 1.17]</td>
</tr>
<tr>
<td>Bacteria in Nasopharyngeal aspirate</td>
<td>35 (13.0%)</td>
<td>222 (11.6%)</td>
<td>1.15 [0.78, 1.68]</td>
</tr>
<tr>
<td>Pneumococcus</td>
<td>29 (10.8%)</td>
<td>196 (10.2%)</td>
<td>1.06 [0.70, 1.61]</td>
</tr>
<tr>
<td>Staphylococcus species</td>
<td>4 (1.5%)</td>
<td>13 (0.7%)</td>
<td>2.22 [0.72, 6.85]</td>
</tr>
<tr>
<td>Gram negative bacteria</td>
<td>2 (0.7%)</td>
<td>13 (0.7%)</td>
<td>1.10 [0.25, 4.90]</td>
</tr>
</tbody>
</table>

**Keywords**: Childhood pneumonia, death, developing country, predictors
REACHING SICK CHILDREN IN HARD TO REACH AREAS OF NIGERIA

Andrew-Lingililani Mbewe¹, Joy Ufere¹, Lynda Ozor²
¹Child and Adolescent Health, ²Malaria Programme, World Health Organization, Abuja, Nigeria

Background and aims: The Under 5 Mortality rate in Nigeria has been reducing in the past 10 years but not adequately. Sick children in rural and hard to reach areas do not have adequate access to health care. The Federal Ministry of Health in collaboration and with support of development partners and NGOs initiated Integrated Community Case Management (iCCM) of childhood Illness in two geographically different states.

Methods: We describe the process of establishing iCCM in Nigeria which included sensitization, adoption, development of a national guide, selection of states, preliminary visits, selection of implementing partners, sensitization at state, mapping of hard to reach areas, selection of implementation sites, development of supervision and case management training materials, selection of community health workers, training, commodities, monitoring implementation.

Results: ICCM has been well established in two states. Children are being treated for Malaria, Pneumonia, Diarrhoea. In addition children with malnutrition and the sick neonates are being identified.

Conclusions: We describe the process for introducing a new intervention in a country and show benefits and lessons learnt. We hope others can learn the process and lessons.

Keywords: Hard to reach areas of Nigeria, Integrated Community Case Management
ROLE OF MASS VACCINATION IN CONTROLLING THE RE EMERGENCE OF MEASLES IN JORDAN

Najwa Khuri-Bulos\textsuperscript{1}, Ratib Srour\textsuperscript{2}, Mohammad Abdallat\textsuperscript{2}
\textsuperscript{1}Infectious Disease and Vaccine Center, University of Jordan, \textsuperscript{2}Communicable Disease, Jordan Ministry of Health, Amman, Jordan

Background and aims: Following the second dose of measles vaccine in 1995, measles cases decreased, and none were reported from 2009-2011. However, the influx of refugees from Syria, led to 3 cases in late 2012 increasing to 120 in 2013 (Nationality: 61 Syrian, 53 Jordanians, 6 Iraqi, 26 were 15-35 yrs old, only 16 were vaccinated). The challenge was to stop the outbreak and maintain control.

Methods: Jordan embarked on vaccination around the case, Measles/Polio/vitamin A campaign at Zaatari and Emirates camps (71,000 up to 30 yrs.), out of camp Measles/Vitamin A campaign in 2 Governorates bordering Syria and Iraq (622,000 children up to 15 yrs) in June 2013. A follow-up countrywide MR campaign was done in November 2013 for 6 mos-20 yrs old. Following this, the outbreak was interrupted, decreasing to 20 cases in 2014 and none in 2015. Routine 2 dose measles vaccination was continued.

Results: Measles control was achieved.

Conclusions: Despite mass migration into Jordan, (refugees make up >25% of the population) timely and widely implemented mass vaccination targeting all age groups at risk, and maintaining routine immunization services is effective in controlling measles re-emergence in a community.

Keywords: None
SHORT-TERM AUDITS TO MEASURE NEWBORN MORBIDITY IN SPECIAL NEWBORN CARE UNITS

Flavia Namiiro¹, Sarah Kiguli², Nalini Singhal³, Jamiir Mugalu¹, Yacov Rabi³, Ijab Khanafer³, Doug McMillan⁴
¹Pediatrics, Mulago Hospital, ²Pediatriacs, Makerere University, Kampala, Uganda, ³Pediatrics, University of Calgary, Calgary, ⁴Pediatrics, Dalhousie University, Halifax, Canada

Background and aims: Risk factors for neonatal morbidity can be challenging to identify and measure, especially within special care units with limited resources. Our aim was to describe the incidence of hypoglycemia, hypothermia and hypoxemia in a 70 bed Special Newborn Care Unit (SNCU) at Mulago Hospital using a limited-term audit.

Methods: In this prospective observational study over 3 weeks, we measured blood glucose (glucose oxidase stick), temperature (axillary) and oxygen saturation (SpO₂) using pulse oximetry the first morning after SNCU admission.

Results: In 130 babies (77 admitted <6 hours after birth), temperature was <36.5°C in 82 or >37.5°C in 4 of 103 babies (all but 2 clothed or covered-wet vs. dry not recorded)-common with all birth weights (Table). Blood glucose <2.2mmol/L occurred in 12/128 babies. SpO₂ <85% occurred in 21/175 measurements. Although 20 babies had respiratory distress, specific causes for SpO₂ <85% were not recorded.

Conclusions: Hypothermia is an important association with many newborn morbidities and warrants urgent attention (e.g. skin-to-skin care). Risk factors for hypoxemia need better identification and more frequent SpO₂ measurements. Blood glucose requires further assessment to guide use (limited supply availability). Short focused audits may identify serious morbidity (and anticipated improvement).
Keywords: Audits, Newborn Morbidity, Quality Improvement
STANDARDIZED APPROACH FOR REVISION OF A GLOBAL EDUCATIONAL PROGRAM: THE PATH TO HELPING BABIES BREATHE 2ND EDITION

B Kamath-Rayne¹, M Visick², W Keenan³, G Little⁴, E Schoen⁵, N Singhal⁶, S Niermeyer⁷
¹Perinatal Institute and Global Health Center, Cincinnati Children's Hospital Medical Center, Cincinnati, ²Latter Day Saints Charities, Salt Lake City, ³Neonatology, St. Louis University, St. Louis, ⁴Geisel School of Medicine at Dartmouth, Lebanon, ⁵American Academy of Pediatrics, Elk Grove Village, United States, ⁶Alberta Children's Hospital, Alberta, Canada, ⁷University of Colorado and Colorado School of Public Health, Aurora, United States

Background and aims: Helping Babies Breathe (HBB) is a skills-based curriculum in neonatal resuscitation (NR) shown to improve early neonatal mortality and stillbirth rates in low-resource settings. Still, performance gaps need to be addressed. We used a standardized approach to make revisions to HBB 2nd Edition (HBB-2) to improve gaps and instructional impact.

Methods: Inputs for HBB-2 revisions included the 2015 ILCOR guidelines; a summary of published literature and project evaluations by the HBB Global Development Alliance (GDA); and an Utstein-style implementation meeting of key stakeholders. Program officers/HBB providers were surveyed about HBB learning materials and ways to improve them. Selected program officers and frontline providers carried out 2 rounds of Delphi review of revised materials.

Results: Scientific changes were de-emphasis of oropharyngeal suctioning and increased emphasis on effective/timely bag-mask ventilation. The HBB GDA and Utstein inputs increased sensitization to QI, including ongoing identification of gaps in care and critical monitoring targets in facilities. Frontline providers (N=102) suggested emphasis on building competence in NR skills, systems for ongoing practice, and improving support for facilitators.

Conclusions: Revision of educational programs benefits from wide user input. HBB-2 will emphasize systems for low-dose/high-frequency practice, mentoring and development of facilitators, and ongoing QI. Next steps include: hands-on use of modified approaches by expert panels and then field testing of further modified materials in a resource-limited environment.

Keywords: educational program, neonatal mortality, neonatal resuscitation
SUCCESSFUL IMPLEMENTATION OF OFFICIAL DEVELOPMENT ASSISTANCE PROGRAM FOR PROMOTING HAND HYGIENE IN CAMBODIA

Woo Ryoung Lee¹, Byungwook Yoo², Suyeon Park⁴, Eunsun Park³, Young Hyun Kim³, Jinki Jung³, Angkeabos Nhep⁵

¹Pediatrics, ²Family Medicine, ³International healthcare and planning, ⁴Biostatistics, Soonchunhyang University Hospital, Seoul, Korea, South, ⁵Pediatrics, National Pediatric Hospital, Phnom Penh, Cambodia

Background and aims: Hand hygiene (HH) is the most efficient way to prevent the hospital-infection, but the health care workers (HCW) of developing country are unfamiliar with this practice. By sharing our recent Korea International Cooperation Agency-Official Development Assistance (KOICA-ODA) experience, we tried to raise the awareness necessity and contribute to sustained enhancement in adherence to HH activity for National Pediatric Hospital (NPH) in Cambodia.

Methods: Multidisciplinary strategy for promoting HH practice was designed and 25 staffs assigned to 5 teams (5 persons per team) were participated. The awareness survey and hand culture were performed to motivate them the importance of HH. Next, NPH-QI TFT was composed to monitor and we provided the workshop to inform techniques for WHO Guidelines.

Results: The percentage of participants' awareness of HH was high (72-97%), except for the sufficient resource supply from the hospital (47%). Nonetheless, the positive-cultures before/after HH were not low (before: 91-100% and after: 50-91%). Between September and November in 2015, the compliance was estimated in observation way. The rate difference of baseline and after intervention was statistically significant for the completeness (31% vs 60%, RR 3.06; 95% CI 1.42-6.62, p-value=0.004) but not for the yes/no only (42% vs 62%, RR 2.11; 95% CI 0.98-4.08, p-value=0.054).

Conclusions: This results showed our proposed strategy is well organized to increase HCW’ adherence with HH protocol. In further study, we need to identify the association HH practice and cross-infection

Keywords: Cambodia, Hand hygiene, Health Care Workers, KOICA-ODA
TACKLING MALNUTRITION THROUGH PRIMARY SCHOOL PEER GROUPS

Kathryn Wotton, Faida Adrama, Sharif Mutabazi

1Community Health, Mbarara University of Science & Technology, Mbarara, 2Dept of Medical Services, Ministry of Health, Bwezibera, 3HEADA-Uganda, Mbarara, Uganda

Background and aims: Child malnutrition is 40% in SW Uganda although the land supports good agricultural yield. Education of children has proven effective in changing behaviour of parents. The aim of this project was to implement a nutrition curriculum in primary schools using Peer Group training. The project was funded by a 3-year I-CATCH grant from American Academy of Paediatrics.

Methods: Four primary schools were selected. An interactive curriculum for nutrition, hygiene and gardening was developed along with tools including: Nutrition Snakes & Ladders game, Food Wheel, Tippy Taps and African Stone Soup flannel board. Four teachers and eight volunteers were trained as Peer Group Trainers (PGT). Monthly visits by PGT to train PGEs at schools were organized.

Results: 24 PGE were trained by the PGT and focal teachers. Hygiene, Nutrition and Garden Clubs were started at schools. Schools and churches donated land for school gardens. School gardens with orange sweet potatoes and high iron beans and fruit tree were established. Students made regular presentations in school assemblies and classrooms. Tippy Taps were built beside latrines. Seeds and vines sent home with the children were used to replant school garden.

Conclusions: Interactive nutritional training programs coupled with school gardens can revitalize nutritional education at primary schools and stimulate collaboration with other groups as well as parents and the church.

Keywords: Peer Groups, Primary School Nutrition, School Gardens
THE EXPRESSION CHILDREN WITH LEARNING DISABILITIES THROUGH DRAWING.

Anastasia Anastassiou-Katsiardani¹, Aggeliki Gerovassili², Konstantinos daktylas¹, Styliani Daktyla*³, Glykeria Mitsiou⁴, Stavroula Lilou⁵, Lampros Katsiardanis⁶, Konstantinos Xatzimarkou⁷, Drosoula Anastasiou⁸,⁹, Konstantinos Katsiardanis¹⁰

¹Pediatric Clinic, Achilopouleio General Hospital, Volos, ²EFYKE, GENETIC IST, ³Mitsiou Center, EFYKE, LARISA, ⁴Mitsiou Center, EFYKE, ⁵psychiatric Clinic, Achilopouleio General Hospital, ⁶EFYKE, Achilopouleio General hospital Volos, Pediatric clinic, ⁷Primary school of Argalasti, EFYKE, ⁸Hight school, Gymn;asio Polemidion, Volos, Greece, ⁹Hight school, Polemidia, Lemesos, Cyprus, ¹⁰psychiatric Clinic, Achilopouleio General hospital Volos, Pediatric clinic, Volos, Greece

Background and aims: Each child, becomes part of a social group, the family. His/her mental maturity depends on the existing harmony within the family. Through drawing projects of the child psycho-emotional balances and disorders can be revealed. The drawing expresses clearly the unconscious cause of psycho-emotional conflict, jealousy, isolation, rejection, criticism, frustrations at a young age, and difficult family situations. This research aims to investigate the manner expressed by children with learning disabilities (LD), through the drawing for their family

Methods: 30 pupils (7-15 yo) with LD, who attended a special rehabilitation program at a center of specific therapies, were asked to draw in a white A4 sized paper, their family, (using markers, crayons, watercolors, black-colored pencils). Data collection was through investigation of the drawings. For the organization, coding and interpretation of the underlying project content analysis was used

Results: Through the children's drawings, conclusions were reached on the quality of family environment, as well as the desire and need for a peaceful family environment.

Conclusions: The character sketching in some projects was bright with dynamic elements, elsewhere aggressive and hard, or tender and mild, while in others the painting in the middle indicates the importance, relationship, safety, warmth, pride and fear, stress, non-acceptance. Bright colors and diversity of colors gives us information about the family context and the feelings that each child has for the family.

Keywords: Drawing, learning disabilities, mental maturity
THE NIGERIAN BLENDED ESSENTIAL NEWBORN CARE CURRICULUM (ENCC): DEVELOPMENT, TRAINING AND FIELD TESTING

C Ezeaka1, F James2, G Little3, E Disu4, V Flanagan3, T Hartman3, J Johnson5, K McHugh6, O. Ezeanosike5, O Oluyinka5, M Visick7

1Lagos University Teaching Hospital, Lagos, 2FMOH, Abuja, Nigeria, 3Dartmouth-Hitchcock Medical Center, Lebanon, NH, United States, 4Lagos State University, Lagos, Nigeria, 5Maternal Child Health Survival Program, Washington, DC, 6American College of Nurse-Midwives, Silver Spring, MD, 7Church of Latter-day Saints, Salt Lake City, UT, United States

Background and aims: Nigeria’s neonatal outcomes remain a major issue with deaths > 35% of under 5 mortality. It is one of the most high-burden countries. The Nigerian Federal Ministry of Health (FMOH) is collaborating with USAID and others in the Survive & Thrive Global Development Alliance (GDA) to save 100,000 neonates. ENCC has roots in the 2006 WHO Essential Newborn Care (ENC) curriculum which was integrated into the 2008 Nigerian ENCC. Aims include understanding of why ENCC is termed “blended” and the rigorous development of content and training.

Methods: A FMOH led effort, including academic faculty and professional associations (PAN, NISONM, SOGON, NANNM) produced ENCC materials. A November 2015 rollout Master Training of Trainers (MTOT) at two sites, Abuja and Ebonyi, field tested a final draft ENCC. Pre and Post testing was done (Table 1). Faculty for the MTOT included GDA TAs who also produced a report on the curriculum.

Results: The FMOH group decided that content should be blended from the previous ENCC, including visits to facilities, and inclusion of the American Academy of Pediatrics (AAP) Helping Babies Survive (HBS) 3 modules. Pre and post scores in Table 1 show consistent improvement across sites/modules. Scores for the Blended ENCC test had the greatest improvement.

Conclusions: Efforts to develop a blended Nigerian ENCC provide a core evidence-based resource for successful training. Program implementation using the MTOT trainees should proceed.

Keywords: curriculum development, Neonatal morbidity and mortality
Background and aims: Many mothers can’t continue exclusive breastfeeding due to several reasons. This study was conducted to identify the personal and social barriers to continue exclusive breastfeeding.

Methods: One hundred and fifty mothers having breastfed babies ages 1-12 months were randomly selected from the outpatient department of a pediatric hospital in Dhaka city. A predesigned structured questionnaire was applied to find out socioeconomic status, mothers knowledge and perceptions, health and other factors influencing non-compliance to exclusive breastfeeding.

Results: The rate of exclusive breastfeeding was 27.2%. About 72.8% mothers had started other milk or liquids before six months. The perception of mothers having insufficient milk, poor positioning and attachment to the breast are major reasons. Other factors included influence of husband & family members, joining to service acted as barriers to exclusive breastfeeding.

Conclusions: Correct and specific intervention should focus on mothers who are at risk of early discontinuation of breastfeeding. Future breastfeeding program in Bangladesh should give special attention to these factors which affect the duration of breastfeeding.

Keywords: exclusive breast feeding, Barriers, milk insufficiency, urban mothers
TRACING OF LOW BIRTH WEIGHT BABIES TO MINIMIZE NEONATAL DEATH: EVALUATION OF THE EFFECTIVENESS OF AN INTERVENTION

Indrajit Chaudhuri ¹, Aritra Das¹, Malay Shah¹, Rahul Chatterjee¹, Sanchita Mahapatra²
¹Monitoring, learning and evaluation, CARE India, Patna, India, ²Epidemiology, University of California - Los Angeles, Los Angeles, United States

**Background and aims:** Globally, 60%-80% neonatal deaths are attributed to low-birth weight(LBW) and India accounts for 40% of the global burden of LBW babies. Prior research revealed that visits from community health workers(CHW) could be an effective way of improving home-based essential newborn care and reducing mortality among high-risk infants such as LBW neonates. However, low level of identification of LBW neonates in India remains an impediment. This study sought to evaluate effectiveness of ‘LBW neonate tracking’ intervention in improving the immediate postnatal care and reducing neonatal deaths through CHW-provided services in Bihar, India.

**Methods:** From all government-run health facilities in Bihar, 111 were randomly selected. Newborns weighing ≤2000 gm (very low-birth weight(vLBW)) were identified from the labor room registers and their addresses recorded. As per address, respective CHWs were informed and requested to pay at least three home-visits to these at-risk babies in the first week after delivery and to provide advices on home-based essential newborn care. Mothers of vLBW babies were interviewed during baseline and post-intervention periods for evaluation of intervention.

**Results:** The intervention was associated with 60% reduction in the odds of late (Adjusted Odds Ratio(AOR)=0.40; 95% confidence interval(CI)=0.18, 0.88) and 34% reduction in early neonatal death (AOR=0.66; 95% CI=0.34, 1.27). Skin-to-skin care was associated with significant reduction in early neonatal mortality (AOR=0.12; 95% CI=0.02, 0.89).

**Conclusions:** LBW tracking is a simple, scalable intervention for reducing neonatal mortality in India.

**Keywords:** health service, Low Birth Weight, public health
UMBILICAL CORD CARE: THE KNOWLEDGE, ATTITUDE AND PRACTICE AMONG MOTHERS IN ABAKALIKI, EBONYI STATE, SOUTH EAST NIGERIA

Uzoma Vivian Asiegbu1, Chinonyelum Thecla Ezeonu1, Obiora Godfrey Asiegbu2, Obum Ezeanosike1, Nwakaego Odoh3 and dr Raymond Odichi, dr Miracle Nwobi, dr kosolu okiche, dr Joe- Akunne

1paediatrics, 2Obstetrics & Gynaecology, Federal Teaching Hospital, Abakaliki, Ebonyi state Nigeria, Abakaliki, 3paediatrics, State House Hospital, Abuja, Nigeria

**Background and aims:** Mothers’ belief, practices and care of their babies’ umbilical cord are diverse. This study highlights mothers’ knowledge, attitude and practices of umbilical cord care in Abakaliki, Ebonyi State, South- East Nigeria.

**Methods:** A cross sectional questionnaire based study was conducted on pregnant and/or parous women at three hospitals in Abakaliki. An initial pilot study was done and modifications made. Data was analysed using Epi Info 7 of CDC.

**Results:** Analysed questionnaires were 273. Women aged 26-35 years (60.34%), and 45 years and above (0.43%) had knowledge of cord care. Majority (74.57%) are urban dwellers and had tertiary education (51.72%)(P=0.025). Teaching Hospital patruients (37.07%) had knowledge of proper cord care. Majority (83.52%) of urban dwellers and tertiary educated commenced cord care immediately after delivery, or after a day (12.45%) or two days (2.56%), 1.47% had no idea. Of (29. 67%) who believed that the cord should be covered with diapers, many (9.15%) had Teaching Hospital births. Majority (82.78%) mainly secondary and tertiary educated use methylated spirit to clean the cord or massage with hot water (29.30%)(P=0.001). Some (14.29%) apply chlohexidine, this was significant in those with tertiary level of education (P=0.012). About 14.41% cover the stump with Vaseline, (P=0.002), or toothpaste (5.13%) or dusting powder (1.47%). Few (1.10%) apply scent leaf local herb.

**Conclusions:** There are still gaps in knowledge, attitude and practice among mothers irrespective of place of delivery. Periodic and quality health education on cord care should be given at all levels of contact.

**Keywords:** Abakaliki, Attitude, knowledge, mothers, Practice, umbilical cord Care
UNDERSTANDING PAEDIATRIC PALLIATIVE CARE CHALLENGES IN RESOURCE LIMITED COMMUNITY.

Joshua N. Menang¹, Samuel Njimogu²

¹Pediatric Unit, Cameroon Laboratory and Medicine Foundation Health Practice, Tiko, ²St. Louis University of Medicine and Health Sciences, Bamenda, Cameroon

**Background and aims:** Improving quality of palliative and supportive care in communities with high HIV/AIDS, malaria, poverty and high illiteracy prevalence by addressing existing identified challenges in relation to paediatric oncology.

**Methods:** Preliminarily, a retrospective study conducted (January, 2010 – December, 2012); analysing practice data and survey questionnaires based on aspects of palliative care in relation to the cultural views and traditional beliefs of this community with special attention on paediatric oncology needs where this care and support is provided. The aim was to ascertain palliative care needs and design possible practical interventions.

**Results:** Huge lapses existing between the western palliative and supportive care approach with this community were identified. These lapses result from the masses’ super attachment to cultural practices and beliefs; some of which are incompatible with modern care and support approach; accounting for high deaths especially among the diagnosed terminal conditions with about 50% occurring within 01-06 weeks post diagnosis. About 80% of these community dwellers prioritise tradi-practitioner or sorcery consultations over modern medicine hence most conditions are diagnosed late although most health units are inadequately equipped.

**Conclusions:** Addressing challenges like poverty and primitive cultures would greatly enhance quality of palliative and supportive care for life-limiting health conditions especially in paediatric oncology. This study outcome guided our new care guidelines drafting and implementation which we are steadily improving on.

**Keywords:** None
VITAMIN-D INSUFFICIENCY OF CHILDREN AGED 7 TO 17 YEARS

Oya Yücel†, Bengu Altınordu†

†Pediatric Department, Baskent University, Istanbul Research and Education Hospital, Istanbul, Turkey

Background and aims:
This study aim to investigate the prevalence of vitamin-D insufficiency, effecting factors, changing trends with age and the relationship with obesity in children.

Methods:
Study consisted of 73 children aged 7 to 17 years old (35 girls, 38 boys). Antropometric measurements were taken. Blood samples were collected for glucose, insulin, TSH, lipid profile, 25-OH-cholecalciferol. Body composition analysis was applied. Blood pressure was measured. Lifestyle conditions were also questioned. Tanner stages were checked. We accepted 25-OH-cholecalciferol>20ng/ml as normal.

Results:
The prevalence of vitamin-D insufficiency was 30.1% (63.6% girls). The mean age of the children with low level of 25-OH-cholecalciferol was 13.61±2.6y and ones with normal level was 12.2±2.4y (p=0.29). There was statistically significant difference between mid-pubertal (Tanner 2-4) and post-pubertal group (Tanner 5) for Vitamin-D insufficiency (p=0.029). There was found statistically relationship between the levels of 25-OH-cholecalciferol and phosphorus, HOMA-IR, SBP and DBP levels (p=0.016; p=0.033; p=0.001; p=0.02, respectively). Fat mass, muscle mass and lean body ratio were not associated with Vitamin-D insufficiency. The rate of obesity between the children with low level of 25-OH-cholecalciferol was 42.8%.

Conclusions:
One third of children aged 7 to 17 years had low level of 25-OH-cholecalciferol. This ratio is higher in postpubertal group than mid-pubertal and prepubertal ones.

Keywords: Adolescents, Childhood obesity, vitamin D insufficiency
ASSOCIATION OF FRONTLINE WORKER-PROVIDED SERVICES WITH CHANGE IN BLOCK-LEVEL COMPLEMENTARY FEEDING INDICATORS: AN ECOLOGICAL ANALYSIS FROM BIHAR, INDIA

Aritra Das¹¹, Morchan Karthick¹, G Sai Mala¹, Tanmay Mahapatra², Indrajit Chaudhuri¹
¹Monitor, learning & evaluation, CARE India, Patna, India, ²Epidemiology, University of California - Los Angeles, Los Angeles, United States

Background and aims: Insufficiency in complementary feeding(CF) puts infants and young children at increased risk of undernutrition. This study aimed to evaluate the association of childhood feeding related services provided by community health workers(CHW) with change in community level indicators of CF practices in Bihar, India.

Methods: The study data was obtained from five rounds of 'Lot Quality Assurance Sampling' survey conducted under pilot phase of 'Integrated Family Health Initiative'. The main outcome indicators were - current breastfeeding, age-appropriate minimum frequency of semi-solid food, age-appropriate minimum quantity of semi-solid food, initiation of CF at the right age, and dietary diversity. Repeated measures analysis was performed to determine the predictors of changes in outcome indicators over time.

Results: Visit by CHW, advices on age-appropriate frequency and handwashing were significant predictors of receiving age-appropriate frequency of feeding. The determinants of receiving age-appropriate quantity were - advices on age appropriate frequency and advices on washing hands. Receiving food support from Anganwadi center and FLW visit were significantly associated with initiation of CF at the right age.

Conclusions: The present study identified the critical elements among a range of childhood feeding related services. The findings, from an economically and socially underdeveloped region of India, will inform the existing program about interventions that need to be emphasized upon for reducing the burden of childhood malnutrition.

Keywords: India, infant feeding, Malnutrition, public health
BARRIERS TO SEEKING TIMELY TREATMENT FOR CHILDHOOD PNEUMONIA IN RURAL BANGLADESH


Background and aims: Pneumonia is a leading cause of child mortality in Bangladesh. Majority of child deaths have been associated with delay in health care seeking. This research aimed to explore the barriers to seeking timely treatment for child pneumonia in rural Bangladesh.

Methods: We conducted a qualitative study, used data from key informant interviews with health service providers, in-depth interviews with mothers and focus group discussions with community leaders and mothers. We performed thematic analysis to analyze the data.

Results: Mothers were often confused about the severity of child pneumonia and its treatment. They are primarily seeking care from non-formal practitioners (NFP), however, treatments from NFPs may lead to added suffering and cost. Gender related barriers also existed in the communities as mothers struggled to get permission from their in-laws and husbands to visit health centre. Additionally, community based health centers were not trusted due to the irregular presence of service providers, and lack of medicines and supplies, which created dissatisfaction among mothers and limited timely care seeking.

Conclusions: The study identified a range of barriers to seeking timely care by mothers in rural areas. These barriers need to be addressed in future program priorities and planning to ensure timely treatment of childhood pneumonia in rural Bangladesh.

Keywords: Child Pneumonia, Care seeking, Treatment, Bangladesh
BURDEN OF HOSPITALISATION FOR CHILDREN BORN WITH CLEFT LIP OR PALATE: POPULATION RECORD LINKAGE STUDY

Jane Bell¹, Natasha Nassar¹, Robin Turner², Carol Bower³, ⁴, Camille Raynes-Greenow⁵
¹Menzies Centre for Health Policy, University of Sydney, ²School of Public Health and Community Medicine, University of New South Wales, Sydney, ³WA Register of Developmental Anomalies, King Edward Memorial Hospital, ⁴Telethon Kids Institute, Perth, ⁵Sydney School of Public Health, University of Sydney, Sydney, Australia

Background and aims: Children born with orofacial clefts (OFC) need lifetime multidisciplinary health care.

Methods: Using record-linked datasets, we compared admissions from infancy to adulthood for all children live born in Western Australia 1980-2010 with OFC, to randomly selected live born children without OFC. We calculated rate ratios (RR) of hospital admission, number of, and reason for admissions, cumulative length of stay for each cleft type and by age period.

Results: Compared to children without OFC (n=6566), children with OFC (n=1396) were up to 3 times more likely to be admitted to hospital, had more admissions and longer length of stay in all age periods. Children with OFC were also more likely to be admitted for ear and digestive system conditions (RR up to 30 and 6 times higher). Children with cleft lip and palate (CL+P) and cleft palate only (CPO) were more likely to be admitted for respiratory conditions and children with CPO were more likely to be admitted for care for other congenital anomalies.

Conclusions: Individuals born with OFC have a high burden of hospitalisation, being more likely to be admitted, and having more admissions than those without OFC. Children born with CL+P or CPO had a higher hospitalisation burden than children born with cleft lip only.

Keywords: cleft lip, cleft palate, hospitalisations, medical record linkage, Western Australia
BACKGROUND AND AIMS: Chronic health conditions contribute substantially to global child morbidity estimates, accounting for one-third of DALYs lost for children <15 years. We seek to identify and review strategies of care for children living with chronic health conditions in low- and middle-income countries (LMICs).

METHODS: We searched MEDLINE and Cochrane EPOC databases to identify papers describing strategies of care for children with chronic health conditions in LMICs. Data were systematically extracted and analysed according to Arksey and O’Malley’s ‘descriptive analytical method’ for scoping reviews.

RESULTS: We identified 64 papers addressing 8 different chronic conditions; two chronic communicable diseases (HIV, TB) accounted for the majority of papers (n=35, 55%). Nine (14%) papers reported use of a package of strategies. Most papers addressed a narrow aspect of care (n=55, 86%), such as patient education (n=19) or task-shifting (n=15). Few papers addressed strategies at the community (n=10, 16%) or policy (n=3, 5%) level. Low-income countries were under-represented (n=23, 36%), almost exclusively involving HIV interventions in sub-Saharan Africa (n=20). We describe strategies and propose potential components for improved models of care.

CONCLUSIONS: Strategies that have been effective in reducing child mortality globally are unlikely to adequately address the needs of children with chronic health conditions. Current evidence mostly relates to disease-specific, narrow strategies and more research is required to develop integrated models of care which may be effective in improving outcomes for these children.

KEYWORDS: chronic conditions, non communicable diseases, Quality of Care
CHAMPS: NARROWING THE RACIAL GAP IN MATERNITY PRACTICES IN THE SOUTHERN USA
Anne Merewood¹, Kimarie Bugg², Laura Burnham¹, Kirsten Krane*³, Lori Feldman-Winter⁴, Emily Taylor⁵
¹Division of General Pediatrics, Boston Medical School, Boston, ²Reaching Our Sisters Everywhere, Atlanta, ³Boston University, Boston, ⁴Division of Adolescent Medicine, Cooper University Hospital, Camden, ⁵WISE QI, Boston, United States

Background and aims: CHAMPS (Communities and Hospitals Advancing Maternity Practices) works with over hospitals and communities in Mississippi, Louisiana, Texas, and Tennessee to improve maternal child health practices, increase breastfeeding rates, and improve compliance with the WHO's Baby-Friendly Hospital Initiative. The focus is on decreasing racial inequities in MCH practices in areas with traditionally low breastfeeding rates and high inequity.

Methods: CHAMPS enrolled hospitals from the target regions, and trained community transformers in surrounding areas. Hospitals received intense training, technical assistance, and hands on support at data collection. Community transformers learned how to support breastfeeding mothers in their region. Data on breastfeeding initiation, exclusivity and Baby-Friendly practices were collected by race.

Results: CHAMPS enrolled 31 hospitals, and 20 hospitals were reporting data 1.5 years into this 3 year project. Breastfeeding rates across the cohort of reporting CHAMPS hospitals rose from 64% to 72% in 1 year. Breastfeeding initiation in Blacks rose from 50% to 61% and in Whites, from 68% to 76%. Exclusive breastfeeding rose from 32% to 36% (Blacks, 10% to 23%; Whites, 26%>55%). In Mississippi CHAMPS hospitals, breastfeeding initiation rose from 49% to 62%, and exclusivity, from 19% to 31%. Hospitals also recorded increases in skin to skin after delivery.

Conclusions: A program targeted at improving breastfeeding rates and reducing racial inequity is showing signs of success at the completion of 1 year of data collection and analysis.

Keywords: Baby-Friendly Hospital Initiative, breastfeeding, racial inequity
Child Public Health, Health Systems

CHILD MALTREATMENT IN GHANA: A CLASH OF CULTURE?

Ebenezer Badoe* 1

1Child Health, School of Medicine and Dentistry, University of Ghana, Accra, Ghana

**Background and aims:** there is evidence that child maltreatment is a growing threat to achieving sustainable development goals. An I-CATCH grant in 2008 helped in the creation of the first child protection unit in Ghana. The issues of domestic violence and culture were explored to assist research for UNICEF and the Ghana Health Service in designing and evaluating health services for abused children.

**Methods:** a prospective cross-sectional study was done over a two year period (2013-2015) at the Child Protection unit, Department of Child Health, Korle Bu Teaching Hospital, Ghana. Photographic documentation was obtained to highlight some practices.

**Results:** a total of 240 patients were evaluated. 235 females and 5 males. Age range was 1 month to 12 years. Mean age of patients was 4 years. Defilement was recorded in 100% of the female patients and sodomy in the 5 boys. Massage by grandmothers/mothers leading to fractures occurred in 5 children (2%). 5 (2%) children presented with scalds of the female genitalia from "normal" washing. 6 serious cases of abusive head trauma were recorded, all with links to domestic violence and 75% linked to rural urban migration. 180 cases (75%) were settled out of court because older male perpetrators were not to be disgraced openly leading to only 10 successful prosecutions during the period of study.

**Conclusions:** cultural beliefs and practices cause significant harm to Ghanaian children and this must be addressed by Health policy planners.

**Keywords:** culture, domestic violence, Ghana
COMPLETING THE CIRCLE: ESTIMATING LIFETIME COST OF CARE, BENEFIT COST RATIO AND RETURN ON INVESTMENT FOR ABUSIVE HEAD TRAUMA IN THE USA

Ryan Steinbeigle¹, Ronald Barr², Marilyn Barr¹, Ted Miller³
¹National Center on Shaken Baby Syndrome, Farmington, United States, ²Pediatrics, University of British Columbia, Vancouver, Canada, ³Pacific Institute for Research and Evaluation, Baltimore, United States

Background and aims: To make a more complete case for investment in abusive head trauma prevention from public systems, the lifetime cost of abusive head trauma in the United States needed to be assessed and a benefit cost ratio and return on investment estimated.

Methods: A mathematical model incorporated data from Vital Statistics, the Healthcare Cost and Utilization Project Kids’ Inpatient Database, and previous studies. Unit costs were derived from published sources.

Results: The discounted lifetime average cost of each AHT death and each surviving AHT victim were $7.2 million (95% CI: 4.1-11.5 million) and $3.2 million (95% CI: 1.7-5.6 million) respectively, including $224,500 for medical care and related direct costs (in 2010 USD). The estimated 4,824 AHT cases in the USA in 2009 were associated with an estimated lifetime cost of $16.8 billion (95% CI: 8.7-29.3 billion). Widespread implementation of existing prevention programs that cost $5 per child, and assuming effectiveness of 23.4% reduction in AHT cases, could avert $978 per newborn child in AHT related costs, including $80 in government spending. This represents an estimated benefit cost ratio of 16:1 for governments in the USA in 2009.

Conclusions: Given the substantial lifetime cost of AHT and low prevention cost, return on investment in AHT prevention could be highly favorable.

Keywords: abusive head trauma, child abuse, child maltreatment, cost analysis, public policy, Shaken Baby Syndrome
CREATING BEHAVIORAL CARE SYSTEMS IN A DEVELOPMENTAL DESERT

Susan Buttross, David Elkin

Pediatrics, University of Mississippi Medical Center, Jackson, United States

Background and aims: The Center for Advancement of Youth (CAY) serves as a triage and coordination center for developmental and behavioral care at The University of Mississippi Medical Center and serves over 3000 children each year. The creation of CAY was in response to the overwhelming need in our state for increasing numbers of children with mental, developmental and behavioral disorders. Mississippi has more than 30,000 children with developmental and behavioral disorders and has traditionally been a “desert” for behavioral healthcare, with limited services and qualified providers. An increasing number of children have been placed on medication for the behavioral difficulties without adequate monitoring or behavioral intervention services.

Methods: CAY combines telehealth technology, multidisciplinary expertise, traveling outreach and the support of statewide agencies to the advantage of young patients and their families. The focus of CAY is to equip Mississippi with a multidisciplinary behavioral healthcare system that offers quality treatment, thereby ensuring a decrease in the number of children on pharmacotherapy without first behavioral intervention being provided.

Results: CAY provides the state and the region with integrative child and adolescent behavioral health care through a centralized location where children receive a thorough evaluation from a team of multidisciplinary providers. A robust behavioral improvement has been achieved with a diminished number of medications given.

Conclusions: The CAY model serves as a template for improved behavioral healthcare delivery in areas with limited resources.

Keywords: Behavioral healthcare, Behavioral problems in children, Development, Rural
DEVELOPMENT AND IMPLEMENTATION OF CLINICAL DATA MANAGEMENT TECHNOLOGY FOR THE NOVEL APPROACH FOR CLINICAL RESEARCH

Shogo Kato¹, Yoshihiko Morikawa², Seiji Mitsui³, Takeshi Kuriyama⁴, Takahisa Ogasawara³, Kazuyuki Saito⁵, Naohisa Yahagi¹

¹Division of Data Science for Clinical Research, Department of Data Management, Center for Clinical Research and Development, National Center for Child Health and Development, ²Clinical Research Support Center, Tokyo Metropolitan Children’s Medical Center, ³Division for the Pediatric Clinical Trial Network, Department of Clinical Research, Center for Clinical Research and Development, ⁴Department of Pharmaceuticals, ⁵Department of Development Strategy, National Center for Child health and Development, Tokyo, Japan

Background and aims: Advances in information management technology create opportunities for clinical research to more easily share information. But collecting, integrating and reconstructing the data into a centralized system from many institutes is challenging. This study aims to evaluate the importance and effectiveness of code mapping to assemble data from different formats and multiple data sources into a centralized system.

Methods: National Center for Child Health and Development, Tokyo, Japan, implemented clinical data management system (CDMS), and collected data from 35 clinics and 11 hospitals. The CDMS used a metadata-driven model that contained built-in knowledgebase to control medical terminology. The data should have dealt in HL-7 standard, however the item code was actually various in each institute or vendor. The items in the central database were mapped into standard code by manual processing. The percentage of mapped items and actual registered data was evaluated by the means in each institute.

Results: Before operation, integrated items number of prescription, injection prescription, disease, and laboratory was 1796, 782, 3801, and 23580, respectively. And the percentage of mapped items was 12.0%, 1.7%, 2.8% and 93.4%. Then, the proportion raised up to 94.0%, 94.5%, 62.9%, and 93.6%, by manual processing. In the actual data, it was 92.2%, 93.9%, 65.8%, and 82.1%.

Conclusions: The initial mapping rate was extremely low and it was dramatically increased by mapping operation. The global standardized master code, which is independent from vendors or institute, should be developed to share information more easily.

Keywords: drug information, DWH, ICT, medical information, standardization
DEVELOPMENTAL HEALTH AND WELLBEING OF INDIGENOUS CHILDREN IN FOSTER CARE: ARE WE MAKING A DIFFERENCE?
Shanti Raman*¹, Stephanie Ruston², Phuong Tran², Sarah Irwin³, Paul Hotton¹
¹Community Paediatrics, ²Community and Allied Health, South Western Sydney Local Health District, ³KAMAC, Kari Aboriginal Resources Inc, Liverpool, Australia

Background and aims: Children in foster care (FC) have known health concerns. In Sydney, KARI, a community organisation provides multi-disciplinary assessment and intervention to indigenous children in FC. We wanted to determine the health/developmental needs of children in stable care with KARI. We wanted to identify child, family, intervention and system characteristics that contributed to children doing well and to identify enablers and barriers to care.

Methods: We identified 26 children who had been in stable care with KARI for >12 months. We compared clinical outcomes for these children with results from previous audits. We identified risk and resilience factors in home and school functioning for each child and enablers and barriers to culturally competent intervention by interviewing key stakeholders.

Results: Children in this cohort had similar rates of health and developmental concerns as previous audits; most were getting speech, occupational therapy and psychological intervention. The majority of children improved in their developmental health. Identified risk and resilience factors related to child, family and service system.

Conclusions: While there are challenges in service delivery in the urban setting, indigenous children in FC can be supported via a trauma-informed and culturally respectful service.

Keywords: early intervention, foster care
DOES COMPLIANCE WITH EARLY CHILDHOOD HOME VISITATION IMPACT KINDERGARTEN PERFORMANCE?
Jaclyn Dovico¹, Colleen Kraft², Craig Ramey³, Nancy Crowell⁴
¹Pediatrics, Virginia Tech Carilion School of Medicine, Roanoke, ²General and Community Pediatrics, Cincinnati Children’s Hospital Medical Center, Cincinnati, ³Pediatrics, Virginia Tech Carilion Research Institute, Roanoke, ⁴Psychology, Georgetown University, Washington DC, United States

Background and aims: Maternal-Child Home Visitation (HV) programs have demonstrated positive child and family health outcomes. Many families are enrolled in these programs; few families complete the number of home visits associated with the improved outcomes. The aim is to define characteristics of families that complete home visits. Kindergarten attendance, behavior, and testing for children will be examined.

Methods: Demographic data from children enrolled in HV and who entered kindergarten in the Roanoke City Public Schools from fall 2007 through spring 2015. Family composition was collected from the HV program. School data collected included test scores, behavior, and attendance. Data analysis included Pearson chi square and Mann Whitney U test.

Results: Analyses supported “high” retention in a two guardian household (p < 0.01); guardians who were older at child enrollment (z = 6.7, p < .001); children older at program enrollment (z = 3.38, p < .001) ; and lower guardian education. “High” retention children had fewer absences (z = 2.23, p = .03) and behavior problems (z = 1.49, p = .14) than grade-matched peers.

Conclusions: Families with two guardians, older parent and child age, and less formal education are more likely to complete all the home visits; children tend to have better attendance and fewer behavior problems than their peers.

Keywords: early childhood, Home visiting, school performance
DOES THE PUBLIC SUPPORT BREASTFEEDING? USING MEDIA TO EXPLORE PUBLIC ATTITUDES TOWARDS BREASTFEEDING ISSUES
Alexandra Smith¹, Ian Mitchell²,³
¹Cumming School of Medicine, Undergraduate Medical Education, ²Cumming School of Medicine, ³Maternal and Child Health Research Institute, Alberta Children's Hospital, Calgary, Canada

Background and aims: Health professionals are aware of the benefits of breastfeeding and strongly support it. However, breastfeeding rates vary and are not consistently high. New mothers’ perceptions of breastfeeding will be affected by media reports and public attitudes. Letters to the editor are a likely guide to public support or opposition. We aimed to study media portrayal of breastfeeding in letters to the editor in selected Canadian newspapers.

Methods: We reviewed letters to the editor pertaining to infant feeding submitted to newspapers in the Canadian Newsstand Database between 1995 and 2015. 175 relevant letters were categorized by opinion on public breastfeeding, year, province, and sex of the writer (if possible to determine by content or author’s name).

Results: Overall proportion of positive letters was 76.7%. Letters from the Prairies were most supportive (78.8%) followed by Ontario (78.1%) and British Columbia (72%). 78.4% of women were supportive compared to 72.4% of men. Overall, letters became more positive over time.

Conclusions: There is year-to-year and regional variation, possibly due to local events prompting media reports. Letters are not uniformly positive. It is possible that negative media could discourage new mothers. Therefore, we believe that paediatricians and paediatric organizations should monitor local media and provide clear, well-written contributions. We suspect exploration of social media would yield similar results.

Keywords: Breastfeeding, Health Promotion, Media
E-CIGARETTES: YOUTH AND TRENDS IN VAPING

Karen Duderstadt 1

1Department of Family Health Care Nursing, UCSF School of Nursing, San Francisco, California, United States

Background and aims: The rapid increase in marketing and availability of Electronic cigarettes (e-cigarettes) globally in the past few years has resulted in significant trends in youth vaping.

Methods: E-cigarettes are battery-powered devices that deliver a nicotine-containing aerosol or vapor by heating a solution of nicotine, a glycerin derivative-propylene glycol or glycerol, and flavoring agent. E-cigarette use rose among youth in the U. S. from 3.3% in 2011 to 6.8% in 2012 (Grana, Benowitz, & Glantz, 2014). The trial and use of e-cigarettes has been higher among youth in Europe and Asia.

Results: Recent evidence supports the adverse health consequences of early initiation of smoking among youth. Cognitive maturation is occurring throughout adolescence, and exogenous nicotine exposure and cigarette use in adolescence has been associated with both long-term structural and functional changes in the brain including lasting cognitive and behavioral impairments, including disrupted memory, attention, and executive function (England et al., 2015). The adolescent brain exhibits greater reward effects from nicotine exposure than adults, making youth more susceptible to a life-long battle with nicotine addiction.

Conclusions: This presentation will address the prevalence of e-cigarette use among youth, evidence on the effect of initiation of e-cigarette use and conventional cigarettes, current policies globally on e-cigarettes, and recommendations to protect the health of children and youth.

Keywords: child health, health behaviors, public policy, smoking
ENGAGING A DIVERSE COMMUNITY: DEVELOPMENT OF PEER SUPPORT FOR INDIGENOUS PARENTS AND YOUNG CHILDREN

Ailsa Munns* 1, Christine Toye1, Desley Hegney2, Marion Kickett3, Rhonda Marriott4, Roz Walker5

1School of Nursing, Midwifery & Paramedicine, Curtin University; 2School of Nursing and Midwifery, University of Southern Queensland & University of South Australia; 3Centre for Aboriginal Studies, Curtin University; 4School of Psychology and Exercise Sciences, Murdoch University; 5Telethon Kids & University of Western Australia

Background and aims: This study examined the development and impact of peer led, home visiting, parent support for Australian Aboriginal parents and young children. Research has identified needs for innovative Aboriginal parent and child health support strategies, including peer led home visiting. Aboriginal children’s health is poorer than that of non-Aboriginal families with political, historical, economic, cultural and social environments impacting on their parents’ ability to maintain positive health and parenting practices. Aboriginal peer led support is central to developing effective strategies as local support workers are cognizant of these impacts and the lived experiences of parenting.

Methods: Participatory Action Research facilitated a partnership, between Aboriginal Peer Support Workers and a non-Aboriginal researcher with relevant expertise, to implement a home visiting support service relevant and acceptable to parents and children in the community. The study then elicited and explored responses from clients, Peer Support Workers and community support agencies, using unstructured and semi-structured interviews. Thematic analysis was applied to the data.

Results: Social determinants of health, funding and management were identified as impacting upon program development. Peer Support Workers’ skills, attributes and strategies were integral to client engagement, needing to be supported by ongoing education.

Conclusions: Families were satisfied with peer led home visiting support which was recognised as being culturally appropriate.

Keywords: Home visiting, Indigenous, Parent support, Peer support
ENHANCING STRATEGIES FOR THE CARE FOR SMALL BABIES IN THE PHILIPPINES

Anthony Calibo* 1

1Family Health Office, Department of Health, Manila, Philippines

Background and aims: Prematurity and low birth weight complications comprise 30% of newborn deaths in low to middle income countries like the Philippines. Kangaroo mother care has been implemented in select hospitals and antedates the basic emergency obstetric and newborn care training. The essential intrapartum and newborn care (EINC) protocol was instituted in 2009 to implement hospital reforms. An accelerated decrease in newborn mortality rate in 2013 compared to past National Demographic and Health Surveys has been manifest. The Department of Health (DOH) devised an integrated approach for the capacity development of healthcare teams of referral facilities in the care for the small baby (CSB).

Methods: 22 government hospitals have undergone KMC training from 1990 to 2013 through NGO partnership. DOH strengthened its newborn program and focused interventions to address prematurity/LBW complications by expanding the number of hospitals that will implement CSB.

Results: EINC, postnatal care, resuscitation and KMC have been integrated in one course package for 133 teams from 15 national and 7 local government hospitals. This resulted in the 47% and 50% increase in the number of national and local hospitals, respectively, implementing CSB.

Conclusions: National government leadership plays a crucial role in scaling-up of interventions in the reduction of prematurity/low birth weight complications. Integrating components of existing strategies in one country is feasible to enhance outcomes of the small baby.

Keywords: Kangaroo mother care, low birth weight, newborn care, prematurity
Child Public Health, Health Systems

FIREWORKS: PAINFUL CELEBRATION. A CALL FOR ACTION.

Angela Ifeoma†, Maxy Odike‡, Gold Ikponmwosa§

1Paediatrics, 2Histopathology, 3Surgery, Irrua Specialist Teaching Hospital, Irrua, Nigeria

Background and aims: Children love celebrations and look forward to them. Over the years the use of fireworks has become part of celebrations in Nigeria. As gorgeous as they may be, fireworks are explosives. There are documented cases of fireworks accidents in developed countries but paucity of documentation from developing countries. This report aims to draw attention to this form of dangerous and potentially lethal form of celebration. This is a call for necessary action.

Methods: Case report of four children (excluding the older cases) with fireworks accident who presented in a tertiary Institution in Nigeria.

Results: Four children with fireworks accident presented on Christmas day and days after Christmas with fireworks accidents. Their ages ranged from 11 to 16 years. One was a female and 3 were males. They had different degrees of traumatic amputation of the fingers and hands. They also had burns injuries. One male died from complication of his injuries.

Conclusions: We believe that many more children could have been affected but due to poverty and the poor state of health facilities, many of them would present to traditional bone setters, usually with poor outcome. Paediatricians as child advocates must join hands with necessary authorities to put a stop to this preventable cause of disability and death amongst our children, especially in Nigeria, where child mortality rate is very high. Let's help the children celebrate joyfully and their parents sleep peacefully.

Keywords: amputation, fireworks, pain
HEALTH SYSTEMS AND THE IMPLEMENTATION OF THE IMCI APPROACH IN FOUR DISTRICTS, SOUTH AFRICA: MISSED OPPORTUNITIES

Busisiwe Nkosi1, Motshana Phohole1

1PATH, Johannesburg, South Africa

**Background and aims:** Care of children contribute substantially to the workload of the health system. The IMCI approach ensures that a comprehensive and accurate assessment is made of every sick child, using simple yet reliable clinical signs at the first contact level. This study reports on health systems constraints in the implementation of the IMCI guidelines in four districts, South Africa.

**Methods:** A cross sectional study was conducted from April to July 2015, using purposive sampling to recruit HCWs trained in IMCI and their counterparts. Qualitative questions focused on HCWs attitudes, knowledge and experiences of the IMCI approach. Children’s health records were reviewed to assess HCWs practices in the implementation of IMCI.

**Results:** A total of 303 HCWs from 62 health facilities were interviewed across the four districts. About 63% of the HCWs had been trained in IMCI. Discrepancies between HCWs knowledge and actual IMCI implementation were observed. Inadequate health system support and supervision including deficiencies in drug supply; logistic guidelines and tools; staff shortages; and staff rotation pose insurmountable challenges in the implementation of the IMCI strategy. Referrals between nurses and doctors working in hospitals often led to recriminations.

**Conclusions:** Health system limitations are overwhelming, preventing effective implementation of the IMCI strategy, consequently compromising the lives of children. Referral links between nurses and doctors need to be strengthened to help doctors understand the syndromic approach to diagnosis and management used in IMCI.

**Keywords:** None
HOW HAS PORTRAYAL OF FOSTER CARE IN CANADIAN NEWSPAPERS CHANGED OVER TIME?

Elizabeth Squirell*, Ian Mitchell2, 3
1Cumming School of Medicine, Undergraduate Medical Education, 2Cumming School of Medicine, 3Alberta Children's Hospital Maternal and Child Health Research Institute, Calgary, Canada

Background and aims: Children in foster care (FC) are vulnerable. Health care professionals (HCP) often perceive FC as problematic and undesirable, compared to children with natural parents. HCP also are aware that many children in FC have medical problems. The public view of FC will be affected by the media. We aimed to examine how newspapers describe FC, and changes over time.

Methods: We searched for the term ‘foster care” in national publications, The Globe and Mail (GM) and The National Post (NP), from their inception till the end of 2014. Each article was searched for value-laden terms and medical terms. The value-laden terms “death”, “abuse”, “protect” and “success” were labelled negative (-ve), positive (+ve), or unrelated, based on context. Medical terms found were “fetal alcohol (FASD)”, “attention deficit (ADHD)”, “sudden infant death syndrome (SIDS)” and “behavioural disorder (BD)”. Key terms were counted in 5-year periods for total occurrences and number of articles in which they appeared.

Results: Value-laden terms were more often + than -; the highest ratio of + to – being 3.8 (1985-1989), and lowest of 1.46 (1980-1984).Medical terms first used in GM: 1988, BD; 1993, FASD; 1996, SIDS; and 1997, ADHD. In any 5-year period in either paper, the highest proportion of articles they appeared in were: 0.8%, SIDS; 2.5%, ADHD; 4%, BD; and 5.7%, FASD.

Conclusions: We found positive portrayal of FC in Canadian papers, and medical concerns rarely mentioned. This discrepancy between media reports and HCP impressions of FC will be explored in future studies.

Keywords: foster care, public policy
I-CATCH PROJECT BEND: BALANCED EARLY NUTRITION FOR DEVELOPMENT AMONG ORPHANED CHILDREN IN ENUGU STATE NIGERIA.

Henrietta okafor¹, Echezona Ezeanolue², Dorothy Ihekuna³, Vina Okafor⁴ and Research group Institute of Childhealth, University of Nigeria Teaching Hospital
¹Paediatrics, Institute of Childhealth University of Nigeria Teaching Hospital, Enugu, ²School of community health sciences, University of Nevada, Las Vegas, ³Nutrition, Institute of child health University of Nigeria Teaching Hospital, ⁴Public Health Nursing, Institute of Childhealth University of Nigeria Teaching Hospital, Enugu, Nigeria

Background and aims: A significant proportion of children in Nigeria who survived their mother’s death during child birth are not breastfed. Because infant formulas are expensive, these infants are weaned and fed predominantly adult food at an early age. Understanding the nutritional value of various local foods will help caregivers provide a balanced diet for optimal growth and development. We sought to improve knowledge of food groups and preparation of balanced diets from locally available food products by community health workers and caregivers of orphaned children in Enugu, Nigeria and evaluate the impact on the nutritional status of this subgroup of children.

Methods: This was proposed to be a phased longitudinal descriptive study but ended up as a cross-sectional descriptive study.

Results: 50 health workers selected from 24 health facilities were trained. The training was cascaded to a total of 400 caregivers. Majority of health facilities were under-utilized. Eight hundred and forty-nine infants and children were screened and only 24 were recruited for follow-up. Few orphans were encountered but were well nourished.

Conclusions: Conclusion: Facility based health services are not very effective in rural communities in Enugu state. Orphaned children are relatively few and malnutrition is not common in the studied communities. Recommendation: There is a need to better understand barriers to effective utilization of health facilities even when they are available in rural communities.

Keywords: Balanced Early Nutrition; Rural Health Facilities; Community-based interventions
Child Public Health, Health Systems

IMCI – KNOWLEDGE ATTITUDES AND PRACTICES (KAP) OF HEALTH CARE WORKERS IN FOUR SOUTH AFRICAN DISTRICTS

Rorisang Lesenyeho¹, Yajna Lalbahadur², Busisiwe Nkosi³, Mochana Phohole²
¹Technical Project Management, ²Monitoring and Evaluation, ³Research, PATH, Johannesburg, South Africa

Background and aims: The United Nations estimated the under 5 mortality in South Africa to be 41/1000 in 2015. The WHO and UNICEF presented the IMCI strategy in 1996 as the principal strategy to improve child health. This study aimed to assess the knowledge, attitudes and practices (KAP) of the health care worker (HCW) in the implementation of IMCI in 4 South African Districts. The objectives were: To determine the proportion of health providers trained in IMCI; to review the quality of IMCI implementation by HCWs through child health records; and to assess the views of HCWs regarding the benefits of IMCI.

Methods: A cross-sectional survey was conducted between April and July 2015. 69 facilities and 600 health care records of children aged between 2 months to 5 years children were targeted. Qualitative and quantitative data analysis was conducted and Pearson’s Product Correlation (r) was used to evaluate relationships.

Results: 556 HCWs were assessed in 69 facilities, showing that 63.1% were IMCI trained. HCWs were knowledgeable about IMCI and accepted IMCI as the programme with which to manage children. Few HCWs believed that Primary Health Care (PHC) training was more effective than IMCI. 50% of the children were not assessed for danger signs, and classification of illnesses was inconsistent.

Conclusions: Irrespective of whether IMCI training was received, there are gaps between the knowledge and practices of the HCWs as their theoretical understanding of the IMCI strategy was not evident in the clinical records assessed. Dysfunctional health systems hinder the practice of IMCI.

Keywords: Attitudes, IMCI, Knowledge, Practices, South Africa
IMPACT DIAGNOSTIC TOOLS FOR INFECTIOUS DISEASES OF CHILDREN IN BOSNIA

Sasa Mandic¹, Adnan Bajraktarevic¹, Alisa Abduzaimovic², Djana Granov Rokolj³, Ismet Suljevic³, Zijo Begic⁴, Jasminka Abduzaimovic Maglajlic⁵, Alija Drnda⁶

¹Public Health Institution of Health Center Sarajevo, Pediatrics Department, Sarajevo, Bosnia and Herzegovina., Sarajevo, ²Biochemistry and Microbiology Laboratory Jelah , Tesanj, ³Biochemistry and Microbiology Laboratory , Clinical Medical Center Sarajevo, ⁴Pediatrics Department, Pediatrics Clinic Jezero, ⁵Microbiology Department, Clinic for Pulmonology Podhrastovi , ⁶Pediatrics Department, Infectious Clinic Kosevo, Sarajevo, Bosnia and Herzegovina

**Background and aims:** Diagnostics have had a big impact on the management of children patients with infectious diseases and are essential for outbreak detection and response.

**Methods:** The search for published guidelines for diagnostic research yielded about 100 lists. This search included the Medline-Pub med, Medscape, Embase, Hinari, EBSCO, Scirus, APA, Google Scholar and the methodological database from the Cochrane Collaboration up to January 2016.

**Results:** The article summarizes best practices, challenges, and lessons learned from implementation experiences across all Bosnia nad Herzegovina for first; building laboratory programs within the context of a healthcare system; second utilizing experience of clinicians and healthcare partners in planning and implementing the right diagnostic; and third; evaluating the effects of new diagnostics on the healthcare system and on children patient health outcomes.

**Conclusions:** New tests are needed that can identify a specific pathogen or at a minimum, distinguish between bacterial and viral infections.

**Keywords:** Children, Diagnostic, Infections, Tool
IMPROVEMENT OF PEDIATRIC CARE QUALITY IN PRIMARY HOSPITALS IN RUSSIA
Tatiana Kulichenko1, Svetlana Mukhortova1, Svetlana Piskunova2, Elena Besedina2, Leila Namazova-Baranova3, Alexander Baranova4 and Prometnoy D., Kozmina G., Prikhodko N., Kiseleva N., Yunak L., Asten A., Lazareva M., Ligostayeva E.
1emergency, Scientific center of children’s health, Moscow, 2pediatric, Rostov Regional hospital, Rostov-on-Don, 3pediatric, Scientific center of children’s health, Moscow, Russia

Background and aims: We aimed to develop an audit program of Quality of Care (QoC) in municipal pediatric hospitals in Russia to improve their work.

Methods: For improving hospital QoC for children, we tested a standard 18-hour training in conjunction with supportive supervision (SS) in 10 regional pediatric hospitals in the Southern Federal District of Russia. Summary scores of QoC were evaluated using the WHO Pediatric Quality Assessment Tool. Ten key indicators of inappropriate case management according to the WHO guidelines were prospectively assessed every 3 month. The primary outcome was defined as prevalence of children with unnecessary hospitalization, iatrogenic risk, and unnecessary painful procedures.

Results: An average summary score of QoC for all hospitals was 1.8 (range, 1.6 – 2.3). During SS visits in the first 6 months of the project, a total of 1097 hospitalized patient were reviewed. The prevalence of the primary outcome significantly decreased in the intervention group from 44% to 10%. All other indicators of case management, except for polypharmacy, significantly improved (p<0.01).

Conclusions: In many hospitals in Russia, pediatric care is characterized by a high rate of unnecessary hospitalizations and overtreatment. Standard trainings plus SS by local pediatricians produced a substantial QoC improvement over a 6-month period.

Keywords: child health, child maltreatment, Education, medical, Quality of Care, supportive supervision
IMPROVING THE CLINICAL ASSESSMENT OF ACUTE PRESENTATIONS OF CHILD MALTREATMENT USING A QUALITY AND CHILD RIGHTS FRAMEWORK

Paul Hotton¹, Shanti Raman¹

¹Community Paediatrics, Liverpool Hospital, Sydney, Australia

Background and aims: Evidence supports medical examination in the assessment of child maltreatment (CM). South Western Sydney (SWS) has a large urban population with vulnerable sub-groups. Little is known about the health or social outcomes following acute CM assessments. We aimed to describe acute presentations of CM in SWS over two years, identify health and social outcomes for children following medical assessment and determine if the assessments fulfilled established minimum standards for clinical assessment of CM.

Methods: We gathered data from the child protection database and hospital records on children <16 years referred for assessment between 2013 - 2014. We performed simple descriptive analysis on the data. We measured the assessment, report writing and follow-up against the established standards and a child rights framework.

Results: In the time period, 187 were seen for acute assessment. Most (75%) were female, 148 (79%) were for sexual abuse, 39 (21%) were for physical abuse. Mean age was 9 years for sexual abuse and 4.7 years for physical abuse. 37 (20%) cases were found not to be CM, the rest had medical findings; almost a third were placed in care. Most assessments were multi-disciplinary, used protocols; half were not followed up, a-third performed after-hours.

Conclusions: We identified strengths and weaknesses in current CM assessment processes, more can be done to promote children’s rights through these clinical assessments.

Keywords: child abuse, child maltreatment, child protection, child rights, clinical assessments
INDICATORS OF GENERAL COMMENTS: A RIGHTS-BASED APPROACH TO PROMOTE HEALTH AND DEVELOPMENTAL OUTCOMES FOR CHILDREN

Ziba Vaghri* 1

1Public Health and Social Policy, University of Victoria, Victoria, Canada

Background and aims: There is a great deal of evidence to suggest that investment in Early Child Development (ECD) is an effective entry point to enhance population health and health equity. Promoting ECD requires both sound policy and effective implementation involving pediatricians and a large number of other players. Investment in ECD is a legal obligation as Canada and 194 other governments have ratified the United Nations Convention on the Rights of the Child (CRC). These governments are accountable to their children. A critical component of any solid accountability system, which is also critical to successful evidence-based decision-making, is monitoring.

Methods: Since 2007, we, working under the auspices of the UN Committee on the Rights of the Child, have created the Early Childhood Rights Indicators, (ECRI). ECRI is a CRC monitoring tool, comprised of 3 sets of structural, process-oriented and outcome indicators, and facilitates a rights-based approach to enhancing ECD.

Results: Piloting ECRI in Tanzania, Chile and Canada (ongoing) has shown that such tools can keep track of policies, programs and initiatives in support of ECD, and over time, reveal their impact on ECD as well. We have demonstrated the usefulness of the concept and created international interest in both the ECRI and the possibility of a more comprehensive tool, GlobalChild (GC), which will be a monitoring tool for all children of 0-18 years old children.

Conclusions: This presentation will provide a brief exhibit of ECRI, its role in improving the accountability of professionals working with/for children and close by introducing the concept of GC.

Keywords: child rights, early child development, monitoring, rights-based approach
INNER-CITY FATHERS OF CHILDREN AFFECTED BY CHRONIC ILLNESS: A SYSTEMATIC SCOPING REVIEW OF THEIR EXPERIENCES

Anna Kobylianski*1, 2, Thivia Jegathesan1, Elizabeth Young1, 3, Kimmy Fung1, Joelene Huber1, 3, Ripudaman Minhas1, 4

1Pediatrics, St. Michael's Hospital, 2Faculty of Medicine, 3Department of Pediatrics, Division of Developmental Pediatrics, 4Pediatrics, University of Toronto, Toronto, Canada

Background and aims: Parents from inner-city backgrounds face challenges when caring for a child with a chronic illness or disability. Despite the rise in fathers role in childcare, the experiences of inner-city fathers remain unknown. Using the Double ABCX model, this study aims to explore the experiences of fathers of children with disabilities or chronic health conditions from inner city families.

Methods: A systematic scoping review was conducted between November 2014 and January 2015 using the Arksey and O'Malley framework. Included articles were critically appraised and the Double ABCX model was used to qualitatively evaluate the articles by stressors, resources, perception, coping, and adaptation.

Results: 14 /5114 articles were included in the study. Studies discussed fathers from low income/SES backgrounds, ethnic minority, immigrant/refugee, and unemployed fathers. Stressors included financial strain and barriers to accessing healthcare. Resources, ranged from immediate to extended family members, depending on ethnicity. Inner-city fathers had more desire for information about their children’s health, but some were uncomfortable with asking physicians. They were at a higher risk for difficulties with coping and maladaptation, including depression, PTSD and less acceptance of the child.

Conclusions: A comprehensive approach to providing and communicating care to children and fathers from inner city backgrounds is vital to care. Findings from this review can be used to guide pediatricians in advocating for resources to reduce stressors, enhance coping, and promote positive adaptation for inner-city fathers.

Keywords: Children’s Health, chronic illness, Double ABCX Model, fathers, inner-city, scoping review
Background and aims: Easy availability at home, the resemblance of the red tablets to candy and lack of awareness among parents predisposes to accidental ingestion of iron in children. The aim was to study the impact of a low cost intervention on reduction of mortality and morbidity in children due to iron poisoning.

Methods: Data on children aged less than 12 years with iron intoxication during the period 2007-2008 after 2008 were analysed separately. In 2008 after observing the apparent increase in iron poisoning the concerned authorities implemented an intervention program with changing the packaging of iron tablets to child proof strips and increasing awareness among parents.

Results: There were 41 cases and 4 deaths due to iron poisoning between 2007 and 2015. Before the intervention in 2008 there were 26 (63%) cases of iron poisoning and 4 deaths. After the intervention there were 15(37%) cases of iron poisoning and no mortality during the 7 year period.

Conclusions: Targeted public health interventions will help to reduce morbidity and mortality due to accidental poisoning in children

Keywords: iron poisoning , targeted intervention
Background and aims: Immunization against the childhood killer diseases is the cardinal strategy for the prevention of these diseases globally. Therefore failure to achieve total immunization coverage puts several children at risk. The aim of the study was to ascertain the prevalence, investigate the reasons for failure to appropriately immunize children in the county and the consequences.

Methods: The study was a community-based cross-sectional study, involving the mothers/guardians of the sampled children aged 0-59 months. To be eligible for the study, the parent/guardian was required to give an informed consent and reside within the County. We calculated our sample size using the Leslie-Kish formula and a multi-staged sampling method. Data collection was by interviewer administered structured questionnaire which was analyzed using SPSS-20.

Results: The number of children sampled was 159, of which 150 were fully immunized and 9 were not. The prevalence of missed opportunity was 32%. The reasons for missed opportunities were varied. Some of the consequences of these missed opportunities were increased susceptibility to and resurgence of vaccine preventable diseases.

Conclusions: Ignorance of parents/guardians and health care staff together with infrastructural inadequacies were responsible for most missed opportunities. The details of these and suggestions for improvement and the way forward are discussed.

Keywords: Immunization, Missed Opportunity, Under Five
**Background and aims:** Abrupt removal of newborn from intrauterine exposure to certain drugs has resulted in signs and symptoms described as neonatal withdrawal syndrome. **Aim:** To study the clinical spectrum, the natural course and usefulness of Finnegan test in the diagnostic-therapeutic approach.

**Methods:** We studied retrospectively five cases of neonates hospitalized in the preterm unit during 2013. The symptoms, the diagnostic approach in the rating by Finnegan, of treatment and follow-up were described.

**Results:** Newborns (2 males and 3 females) were full-term with good birth weight (>2750gr). The mothers were following the detoxification program, with buprenorphine. When admitted, the newborns showed rigidity and tremors. In 2 cases medication with phenobarbital was supplied (3rd day of life), in 1 case at day 6, 1 case refused medication, while the mother of fifth infant, who was a carrier of Hepatitis C, refused hospitalization and was discharged on her own will. The criterion to start medical management was the score >8 in 3 consecutive Finnegan tests. Newborns were discharged after 9 days of hospitalization on average, with a gradual cessation of phenobarbital and guidelines for performing brain ultrasound in three of those who had more severe symptoms and took treatment.

**Conclusions:** The neonatal abstinence syndrome is a current issue, resulting from the "epidemic" social scourge of drugs and complicates the interaction and the mother-infant bond that could lead to long-term consequences and negative effects on society and individual child’s psycho-emotional level.

**Keywords:** NEONATAL ABSTINENCE SYNDROME
BACKGROUND AND AIMS: In adult populations the relationship between socioeconomic disadvantage (SD) and multimorbidity is well established but this relationship is less well understood in early childhood. We investigated the relationship between multimorbidity and SD in young children.

METHODS: The study sample included 5737 mother-child dyads with complete data from within a large birth cohort study. Multimorbidity was defined as the presence of 2 or more mother reported chronic conditions (CC) at age 2 years. A socioeconomic disadvantage index (SDI) was constructed using mother reported data ranking women into 5 categories from least to most disadvantaged. Multivariate ordinal logistic regression modelling was used to test for potential confounding factors, with associations described using adjusted odds ratios (OR) and 95% confidence intervals (CI).

RESULTS: Multimorbidity was present in 422 (7.36%) children. We found a graded association between the SDI and the presence of CCs. In comparison to the least disadvantaged group, the odds of at least 1 CC being present were increased in the third most (OR 1.31 [CI 1.12-1.53]), second most (OR 1.70 [CI 1.39-2.08]) and most (OR 1.83 [CI 1.43-2.34]) disadvantaged groups. This association was not eliminated by controlling for confounders.

CONCLUSIONS: Multimorbidity is common even in very young children and the odds of the presence of chronic conditions at an early age are socially graded.

KEYWORDS: birth cohort, child health, chronic conditions, multimorbidity, Socioeconomic status
NURSING CONSULTATION IN CHILD CARE: HOW DO WE DO IN BRAZIL
Aline Belela-Anacleto1, Paula Andrade2, Flavia Balbino1, Dulce Oliveira1, Maria Carolina Santana1
1Paulista Nursing School - Federal University of São Paulo, 2Cruz de Malta Center Care, São Paulo, Brazil

Background and aims: In Brazil, the nursing consultation (NC) represents the nurse’s clinical practice, a regulated and mandatory task and a methodology of the care process.

Methods: Descriptive exploratory study that aimed to describe the NC in child care carried out in the outpatient clinic of the Cruz de Malta Care Center (CACM), a philanthropic institution in São Paulo, Brazil.

Results: The NC in CACM intends to serve children and families in vulnerable situations. Approximately 25% of mothers are adolescents and 45% of families have monthly income lower than one thousand dollars. Children aged from zero to 1 year of age are evaluated monthly, and then every 2 months until they reach 2 years. On average, 400 NC are performed and 120 children are attended every year. The NC are classified into 'routine', 'evaluation' and 'urgency', last for approximately 40 minutes and are recorded in printed form. They are organized in 4 interrelated, interdependent and recurring steps (nursing history, nursing diagnosis, planning and evaluation).

Conclusions: NC is a strategy of care directed toward monitoring the growth and development of the infant, with a view toward promotion, protection and health recuperation of the child. This care practice provides conditions to individualize and administer nursing care, enabling greater integration of the nurse with the user, the family and community.

Keywords: Health Promotion, Pediatric Nursing
**PAIN AND LEARNING IN PRIMARY SCHOOL: A POPULATION-BASED STUDY**

Silja Kosola¹, ², Lisa Mundy², Susan Sawyer³, Louise Canterford², Danielle van der Windt⁴, Kate Dunn⁵, George Patton²

¹School and student healthcare, City of Helsinki, Helsinki, Finland, ²Centre for Adolescent Health, Murdoch Children’s Research Institute, ³Centre for Adolescent Health, Royal Children’s Hospital, Melbourne, Australia, ⁴Arthritis Research UK Primary Care Centre, ⁵Arthritis Research UK Primary Care Centre, Research Institute for Primary Care & Health Sciences, Staffordshire, United Kingdom

**Background and aims:** Despite the frequency of pain among children, little is known about its effects on learning and school outcomes. The objective of this study was to quantify the association of pain and academic achievement while taking into account the presence of emotional symptoms.

**Methods:** A population-based random sample of 1239 third graders from primary schools in Melbourne, Australia was recruited for the Childhood to Adolescence Transition Study. Children indicated the site of any pain that had lasted for at least a day using a pain manikin. Emotional symptoms were assessed using validated questionnaire items. National assessment results for reading and numeracy were used to measure academic achievement.

**Results:** In cross-sectional analyses, 65% of children reported pain in at least one body site. Each additional pain site was associated with poorer reading scores in a dose-response fashion (95% CI -4.4 to -1.6; p<0.001). The effect remained significant even after adjustment for gender and socio-economic status and was increased by concurrent emotional symptoms. Children suffering from both chronic pain (>3 months) and emotional symptoms were a year behind their peers in both reading and numeracy (p<0.001). Children who reported headaches or abdominal pain together with emotional symptoms also reached significantly lower academic test scores than symptom-free children (p<0.01).

**Conclusions:** Among primary school students, the number of pain sites and emotional symptoms were associated with decreasing academic achievement. Our findings have important implications for parents, schools and healthcare professionals.

**Keywords:** academic performance, Pain, School children
**PEDIATRIC EXPOSURE TO E-CIGARETTES, NICOTINE, AND TOBACCO PRODUCTS IN THE US**

Alisha Kamboj¹, ², Henry Spiller¹, ², Marcel Casavant¹, ², Thiphalak Chounthirath¹, Gary Smith¹, ²

¹Nationwide Children's Hospital, ²The Ohio State University College of Medicine, Columbus, United States

**Background and aims:** Investigate epidemiologic characteristics of exposures to electronic cigarettes (e-cigarettes), nicotine, and tobacco products among young children in the US.

**Methods:** Exposures associated with nicotine and tobacco products among children <6 years were analyzed using National Poison Data System (NPDS) data.

**Results:** From January 2012 through April 2015, the NPDS received 29,141 calls for nicotine and tobacco product exposures among children <6 years, averaging 729 child exposures per month. Cigarettes accounted for 60.1% of exposures, followed by other tobacco products (16.4%) and e-cigarettes (14.2%). The monthly number of e-cigarette exposures increased by 1,492.9% during the study period. Children exposed to e-cigarettes had 5.2 times higher odds of a health care facility admission and 2.6 times higher odds of a severe outcome than children exposed to cigarettes. One death occurred in association with nicotine liquid exposure.

**Conclusions:** The number of exposures to e-cigarettes and nicotine liquid among young children is increasing rapidly nationwide and severe outcomes are being reported. Prevention strategies include: swift government action; public education; appropriate product use and storage; warning labels; and modifications of containers and packaging to make them less appealing and accessible to children.

[Note: Only able to present Aug. 20-22]

**Keywords:** Electronic cigarette, National Poison Data System, Nicotine, Tobacco
PEDIATRIC VEHICULAR HYPERTHERMIA DEATHS: THE CANADIAN EXPERIENCE

Karen Ho¹,², Thivia Jegathesan², Kimmy Fung², Joelene Huber²,³
¹Faculty of Medicine, University of Toronto, ²Pediatrics, St. Michael's Hospital, ³Department of Paediatrics, Division of Developmental Paediatrics, University of Toronto, Toronto, Canada

Background and aims: Forgotten baby syndrome (FBS) refers to when a parent or caregiver unintentionally leaves a child in a vehicle. An average of 37 children die from hyperthermia inside parked cars each year in the US. Over 50% of these cases are attributed to FBS. To date, there are no published Canadian data available. The purpose of this scoping review is to 1) uncover and characterize the incidence of pediatric vehicular hyperthermia (PVH)-related deaths in Canada; and 2) describe the neuropsychological theories that may contribute to FBS.

Methods: A scoping review using the Arksey and O'Malley framework was conducted to determine the incidence of PVH deaths.

Results: In Canada, there have been 4 confirmed cases of PVH deaths in the last 13 years. At least half are attributed to FBS. FBS is thought to be multifactorial. Automatic processing predisposes humans to act in rigid, habitual ways, and makes people more vulnerable to forget, particularly when there is a change in routine.

Conclusions: Compared to the US, PVH occurs fairly infrequently in Canada. FBS is a major cause in most cases of PVH deaths. Memory or attention lapses can occur under stress, fatigue, or with changes in routine. Educating parents about the dangers of leaving children in parked vehicles and providing parents with preventative strategies can reduce the risk of these lapses from becoming tragedies.

Keywords: children, forgotten baby syndrome, heat stroke, Hyperthermia, infants, motor vehicles
PILOTING OF A MOTHER-BABY REGISTER IN SEDIBENG AND UTHUNGULU DISTRICTS, SOUTH AFRICA

Yajna Lalbahadur¹, Busisiwe Nkosi ², Mochana Phohole¹, Rorisang Lesenyelho³
¹Monitoring and Evaluation, ²Research, ³Technical Project Management, PATH, Johannesburg, South Africa

Background and aims: Good facility data is a major component in the provision of quality health care. Without recent, accessible and reliable patient records, healthcare workers are not able to offer a patient optimal care. Patient records are also a key source of data for research and quality improvement. The Window of Opportunity Project (WinOp) developed the mother-baby register (MBR) to ensure that facilities track important information about the care of the mother-baby pair from delivery to two years. This paper describes the piloting of the MBR in 2 districts in South Africa.

Methods: The MBR register was created in 2014 by a multidisciplinary panel from the district clinical specialist team and WinOp, and piloted in champion clinics in Sedibeng and uThungulu districts in South Africa. Nurses from these facilities used the MBR to trace treatments given to the mother-baby pair each time they visited the clinic.

Results: The MBR was piloted in 5 clinics in Sedibeng and 10 in uThungulu. It eliminated unnecessary data elements that lead to wasteful data collection by retaining only relevant and important elements of patient information. The register was well received by health personnel in both districts and has been duplicated for further use in some facilities.

Conclusions: The piloting of the MBR has shown improved retention, recording and use of data for appropriate administration of patient assessments and treatments in piloted sites.

Keywords: Champion clinics, mother-baby register, Window of Opportunity project
PROMOTING HEALTHY EATING AND ACTIVE PLAY, A COMMUNITY BASED EDUCATIONAL PROGRAM FOR EARLY CHILDHOOD HEALTH BEHAVIORS

E Owchar1, E Martinez1, T Logan1, R Satchi1, A Christison1, Y Wang2

1Pediatrics, 2Univ of Illinois College of Medicine, Peoria, United States

Background and aims: Obesity prevalence has tripled in the past three decades in children <5 years old. Promoting Healthy Eating Active Play (PHEAP) is a family-focused educational program for families of young children in lower socioeconomic areas, with sharing nutrition and activity information, and facilitating feasible and accessible behavior changes.

Methods: PHEAP piloted 5 family workshops at community centers. Curricula integrated AAP guidelines on nutrition and physical activity. Workshops ended with brief action planning (BAP), to facilitate participant health behavior changes. The main outcome was evaluating the impact of curricula on parent knowledge of childhood health behaviors. Other outcomes include program acceptability, impact of BAP on behavior changes.

Results: PHEAP offered 25 workshops to 40 families. Knowledge improved with learners, mean pretest 6.97 (sd = 3.7), post-test 8.10 (sd = 4.19), with a mean difference of 1.13, p<0.05. Most families (65%) attended >50% of 5 sessions and participant satisfaction (3.92/4-point Likert scale). Post workshop confidence levels for goals, 7.90/10 Likert scale with 76.9% reporting part or full success.

Conclusions: PHEAP improved participant knowledge about healthy family behaviors, with high participant acceptability. BAP may be a promising approach for health behavior changes in a community program.

Keywords: Advocacy, Obesity
QUALITY OF INTERHOSPITAL TRANSPORT OF THE CRITICALLY ILL CHILDREN REFERRED TO A TERTIARY HOSPITAL IN COLOMBIA

Linda Andrea Betancur1, 2, Javier Mauricio Sierra 1, 3, Natalia Andrea Rios1, Luz Amelia Perez1, Ivan Dario Florez Gomez*4, 5

1Department of Pediatrics, Universidad de Antioquia, 2Department of Pediatrics-Division of Pediatric Critical Care, Hospital San Vicente Fundacion, 3Department of Pediatrics, Hospital General de Medellin, Medellin, Colombia, 4Department of Pediatrics, Universidad de Antioquia, Medellin, 5Department of Clinical Epidemiology and Biostatistics, McMaster University, Hamilton, Canada

Background and aims: Interhospital transport adds additional risks for critically ill children, especially if it is done by untrained staff. Our aim was to describe the characteristics of interhospital transport for critically ill children referred to a Latin-American Tertiary hospital.

Methods: Prospective descriptive study. All patients <14 years referred from rural and urban hospitals to Paediatric Intensive Care between January-August 2013, were included. We described their referral characteristics, transport staff training, progress and monitoring during transport, and clinical characteristics and progress at admission.

Results: We included 111 children. 82 (73%) patients were not previously commented to the PICU staff. Median transport time was 60 minutes (Range: 4–580). 52% were admitted from rural hospitals with longer transport times. One-third of patients had no monitoring during transport. Fifty patients were intubated and 17 (27.8%) of the non-intubated children needed immediate intubation at admission. Adverse events were reported by the transport team in 50 patients (45%), while 84 (75.7%) had adverse events detected at admission by the emergency staff. Two children died due to transport-related events. None of transport staff had training in critically ill children.

Conclusions: Transport of critically ill children resulted in a significant number of adverse events. Absence of oral and written communication between hospitals is common. Difficulties with airway management and respiratory failure were highly prevalent. Lack of training and policies in paediatric transport is an urgent issue to address in Colombia.

Keywords: Adverse events, Critically ill children, Interhospital transport, Respiratory failure, Transport staff training
READINESS OF UNION LEVEL HEALTH FACILITIES FOR IMPLEMENTATION OF DAY CARE APPROACH FOR CHILDHOOD PNEUMONIA

Ishrat Jabeen¹, Kamal Chowdhury¹, Shahnawaz Ahmed¹, A. S. G. Faruque¹, N. H. Alam¹, Tahmeed Ahmed¹, Haribondhu Sarma¹
¹Nutrition and Clinical Services Division, icddr,b, Dhaka, Bangladesh

Background and aims: icddr,b developed a Day Care Approach (DCA) for the treatment of severe pneumonia, which is a safer and less expensive alternative to hospital treatment. Before conducting an effectiveness trial, we assessed the readiness of union level Health and Family Welfare Centers (HFWC) for implementing DCA.

Methods: We conducted a qualitative study, used data from key informant interviews with health care providers, in-depth interviews with mothers and focus group discussions with community leaders and mothers.

Results: The HFWCs were struggling to ensure continuous electric and water supply, adequate supply of medicines and other logistics, availability of pediatric beds, and nebulizer machines with oxygen supply. The service providers were found unskilled and unmotivated to implement this approach due to inadequate training and incentives. The communities also need to be aware and motivated to ensure treatment comply at the caregiver level. Another concern arose over the referral system of the DCA, as they are planning to promote comprehensive facilities which would be parallel to district level hospitals.

Conclusions: The findings revealed that the HFWCs were not ready yet as they were suffering from number of essential requirements. Significant investment is required to make the centre ready to implement DCA for the treatment of childhood pneumonia in rural Bangladesh.

Keywords: Bangladesh, Child pneumonia, Day care approach
REALIST SYNTHESIS ADDRESSING EARLY CHILDHOOD INITIATIVES COMBINING A PUBLIC HEALTH, SOCIAL DETERMINANTS, AND COMMUNITY-BASED APPROACH WITH CLINICAL CARE

Ingrid Tyler¹, Christine Loock² and Christine Loock, Judith Lynam, Heather Manson, Patricia O’Campo, Meghan Lynch, Nicole Turner, Behnoosh Dashti, Tanveer Singh,
¹Dalla Lana School of Public Health, University of Toronto, Toronto, ²UBC Pediatrics, Vancouver, Canada

Background and aims: Social pediatrics is a holistic and multidisciplinary approach to addressing the needs of the whole child, integrating the physical, mental, and social dimensions of health. Social pediatrics is a highly relational philosophy, focussing on partnerships, network and socially supportive relationships to mitigate the risk of health inequities for vulnerable children.

Methods: Realist synthesis is a theory-driven approach to evidence synthesis. Contextual aspects (C) of an intervention which “trigger” mechanisms (M) that underpin specific outcomes (O) form CMO configurations central to realist review. This review follows the established realist methodology of (1) identifying the review question, (2) formulating our initial theory, (3) searching for primary studies, (4) selecting and appraising study quality, (5) extracting, analyzing and synthesizing relevant data, and (6) refining theory.

Results: Six social pediatric initiatives represented in 12 studies were included in this review. The underlying mechanisms linking context to outcome were found to be: 1) provider willingness to share status and power, 2) family-provider trust, 3) provider confidence and comfort and 4) family self-reliance and responsibility through empowerment activities. These mechanisms supported early identification, referral and appropriate service utilization in the context of high levels of social vulnerability.

Conclusions: The findings of this research improve our understanding of how to achieve improved health outcomes for vulnerable children and their families.

Keywords: None
REPRESENTING PEDIATRICIANS IN ONTARIO: DECADE OF PROGRESS AND HOPE FOR THE FUTURE

Hirotaka Yamashiro*1

1Pediatricians Alliance of Ontario, Toronto, Canada

Background and aims: In Ontario, there are 1300 pediatricians but no one voice that speak for what is 36% of the Canadian total. After much work to create and validate a new representative structure, Ontario pediatricians are now poised to influence and advocate for pediatricians and children like never before.

Methods: The evolution of the small Pediatrics Section, OMA (PSOMA) in 2003 to the incorporation of the Pediatricians Alliance of Ontario (PAO) was collated with key highlights and accomplishments and lessons learned presented.

Results: Evidence will be presented that show how the PAO, acting as the Ontario Chapter of the American Academy of Pediatrics (AAP) has changed the landscape of how pediatricians can advocate for children and pediatricians themselves. External recognition and ongoing projects such as office based child research, yearly accredited CME, education of pediatricians in the diagnosis and care of autistic children and publication in a major journal around recommendations for public vaccine funding, that show this change will illustrate this new reality.

Conclusions: In 2015, Ontario pediatricians, thanks to the emergence of the PAO now have a vehicle to strongly advocate on behalf of Ontario children and all pediatric health care groups in partnership moving forward. This new structure has unlimited potential to finally allow pediatricians to engage and influence child health policy and bring that to the national level with other provincial organizations and the CPS.

Keywords: advocacy, American Academy of Pediatrics, Canadian Paediatric Society, pediatricians, public policy
SCHOOL-BASED RAPID DIAGNOSTIC TESTING AND TREATMENT FOR MALARIA BY TEACHERS IN RURAL UGANDA: IMPACT ON ABSENCE FROM SCHOOL AS A SURROGATE FOR MORBIDITY.

Ronald Mukisa¹, Sharif Mutabazi¹, Atukwatse Eliab¹, Hassan Kigozi¹, Rachel Steed², Andrew Macnab³
¹Health and Development Agency, Mbarara, Uganda, ²Hillman Fund, ³University of BC, Vancouver, Canada

Background and aims: Malaria is the principal preventable reason a child misses school in Africa; traditionally teachers send home any child sick in class. Rapid diagnostic testing (RDT) and treatment with artemesin combination therapy (ACT) is WHO endorsed but not previously offered in schools

Methods: Year 1 (pre-intervention) baseline evaluation and teacher training. Year 2 teachers added RDT/ADT. Evaluation: malaria knowledge; parental practices with sick children sent home; days absent from school. Training: how to identify infectious illness; conduct RDT; give ACT; keep records

Results: School-based RDT/ACT was readily implemented/sustained in 4 rural primary schools. Year 1 teachers sent 953 of 1764 pupils home sick, parental management approached WHO standards for malaria in 26%; mean absence from school 6.5 (SD 3.2) days. Year 2 (teacher-administered RDT/ACT) 1066/1774 pupils identified as sick, 765/1066 (67.5%) positive by RDT for malaria and received ACT, their duration of absence fell to 0.59 (SD 0.6) (p<0.001). Overall absence (in 1066) 2.55 days. Cost of RDT/ACT $3/child (single dose) $1.50 (3 day ACT)

Conclusions: RDT/ACT use by teachers is novel feasible significantly reduces absence/morbidity and applicable to low-resource settings with high malaria morbidity

Keywords: None
SCREENING MEASURES INFLUENCE WAIT TIMES FOR AUTISM SPECTRUM DISORDER DIAGNOSES
Whitney Weikum1,2, Jane Shen1,3, Nancy Lanphear1,2
1Sunny Hill Health Centre, 2Pediatrics, University of British Columbia, 3Child & Family Research Institute, Vancouver, Canada

Background and aims: Earlier diagnosis of Autism Spectrum Disorders (ASD) facilitates timely access to beneficial intervention services. However, rising ASD diagnosis rates have resulted in increased wait times. Many centers have implemented screening procedures to assist in the diagnostic process. We investigated how screening measures influence ASD diagnosis wait times.

Methods: We surveyed 178 centers internationally about their ASD diagnostic practices. Sufficient data and standardized diagnostic procedures were reported by 136 centers. Of those centers, 38 mentioned using a screening measure such as triage, file review for applicability or a screening test/questionnaire as part of the standard procedure at their centre.

Results: Centers that mentioned using screening measures showed less time spent in appointments [6 (SD=2.5) vs. 7 (SD=3.5) hours; p=0.1], but were associated with a significant increase (p<.05) in time between the first and final appointments [10 (SD=11) vs. 6 (SD=6) weeks]. Although there was no significant time difference between the groups from referral to first appointment [20 (SD=17) vs. 17 (SD=19) weeks], centers with screening measures showed significantly longer total wait times [referral to final appointment; 31 (SD=20) vs. 23 (SD=19) weeks; p<.05].

Conclusions: Screening measures may help reduce the amount of time a child spends in appointments, but could increase the length of time for diagnosing each child. This might then result in a significant increase in overall wait times compared to centers that do not implement screening procedures as part of their standard diagnostic practice.

Keywords: autism spectrum disorder, Diagnosis, Screening
SEXTING: PREVALENCE, PREDICTORS AND ASSOCIATED SEXUAL RISK BEHAVIOURS AMONG POST-SECONDARY SCHOOL YOUNG PERSONS IN IBADAN, NIGERIA

Oluwatoyin Olatunde¹, Folusho Balogun¹

¹Institute of Child Health, University of Ibadan, Ibadan, Nigeria

Background and aims: Sexting may be associated with psychological problems, sexual activity and risky sexual behaviours. Literatures showed no information regarding sexting in Nigeria. This study looked at the prevalence, predictors and associated sexual risk behaviours of sexting among post-secondary school young persons in Ibadan, Nigeria.

Methods: Mixed study design was used consisting of a cross-sectional survey, focus group discussions and in-depth interviews. Chi square test and logistic regression were used for quantitative data analysis with p=0.05. Qualitative data were analysed thematically.

Results: 575 participants were recruited, age range 14-24 years and 46% were males. 20.1% had sent sexts, while 33.2% had received sexts. Males were more likely than females to have sent sexts. Participants with high extraversion score (OR=1.83, 95% CI:1.04-3.20) and those who had moderate-severe problematic phone use (OR=2.62, 95% CI:1.51-4.54) were more likely to report sexting. Sexting was significantly associated with ever having sexual intercourse, early sexual debut and having multiple sexual partners. Blackmail, depression and suicidal attempts were some consequences of sexting.

Conclusions: Sexting was prevalent among post-secondary school young persons in Ibadan. There is need to educate young persons in Ibadan on responsible mobile phone use, associated risks of sexting and to design interventions to prevent them.

Keywords: Post-secondary schools, Sexting, Sexual risk behaviours, Young persons
SOCIAL PEDIATRICS AND INTER–PROFESSIONAL BEST PRACTICES: PROMOTING HEALTHY CHILD DEVELOPMENT AND YOUTH HEALTH RIGHTS FOR DISENFRANCHISED POPULATIONS THROUGH A 'RICHER' MODEL OF CARE

Christine Loock¹, Judith Lynam², Ingrid Tyler³, Shazeen Suleman⁴, Dzung Vo⁵, Eva Moore⁵, Curren Warf⁵, Lorine Scott⁶, Maureen O'Donnell⁷ and University of British Columbia, BC Children's Hospital, VCHA and OUR PLACE: Social Pediatrics RICHER Partnership

¹Developmental Pediatrics, ²School of Nursing, University of British Columbia, Vancouver, ³Dalla Lana School of Public Health, ⁴Pediatrics, University of Toronto, Toronto, ⁵Pediatrics, Adolescent Medicine, University of British Columbia, ⁶Primary Care FNP, BC Children's Hospital, ⁷Child Health BC, University of British Columbia, Vancouver, Canada

Background and aims: British Columbia has the highest child poverty rate in Canada, with Vancouver’s inner city being among the most at-risk. The aims of the RICHER program (Responsive, Interdisciplinary Child Health Education and Research) are to provide timely access to early intervention and prevention services and work collaboratively to improve health outcomes, school completion and transition services for vulnerable children and youth.

Methods: RICHER serves ~4000 children and youth including new immigrant and Indigenous families. Primary care and pediatric services are distributed in neighbourhood spaces. Community input is prioritized; research is vetted with community. Over 2/3 of children were developmentally vulnerable at school entry (UBC HELP data, 2008). Using mixed methods approaches, data was analyzed to identify outcomes and develop logic models.

Results: Key features of engagement, trust and parental empowerment (e.g. improved knowledge, capacity to activate systems, and manage child and youth health conditions) were identified. The model fosters access to quality primary and specialist pediatric health care. There was a ‘critical difference’ in vulnerability at school entry, with a decrease of 20% (HELP, 2014).

Conclusions: The “RICHER” approach was effective in dismantling barriers by providing access to timely health services. It has helped bridge trust and empower communities to collaborate. Other Canadian communities are adopting the “RICHER” research approach. By investing earlier in children and youth in our communities, we have the opportunity to improve the health of our entire population.

Image:
Relative contributions to Health

The key values of the RICHER model [Tyler, Lynam, Loock in press]

1. Committing to health equity, through relationship centered care and intersectoral service integration
2. Promoting horizontal leadership, sharing power and status
3. Engaging and brokering trust with community citizens
4. Creating inter-professional practice and training opportunities
5. Empowering families and community members through advocacy and alliance and a commitment to activating systems to be responsive

Keywords: child development, Interdisciplinary, Pediatrics, public health, Public Health Nursing, rights-based approach, school performance, social determinants of health
TEACHERS TRAINING ON HIV/AIDS CURRICULUM HAS POSITIVE IMPACT ON STUDENTS’ KNOWLEDGE ABOUT HIV TRANSMISSION AND PREVENTION IN A LOW HIV EPIDEMIC SETTING

Haribondhu Sarma¹, Mohammed Ashraful Islam¹

¹Nutrition Evaluation Unit, Nutrition and Clinical Services Division, icddr,b, Dhaka, Bangladesh

Background and aims: The Government of Bangladesh incorporated an HIV/AIDS chapter into the national curriculum for secondary-school students. For the efficient dissemination of knowledge, an intervention was designed to train the teachers and equip them in to teach on the topic of HIV/AIDS. We aimed to assess the impact of this intervention on students’ knowledge about HIV transmission and prevention.

Methods: We conducted a cross-sectional survey with the students at randomly selected schools from two adjacent districts. Considering the exposure of intervention, one district we assigned for intervention and the other for control. We performed univariate and bivariate analyses to analyze data.

Results: A significantly higher proportion (p<0.001) of students in intervention area demonstrated better knowledge and fewer misconceptions regarding the transmission and prevention of HIV. Multinomial logistic regression analysis showed that students in intervention area were more likely to have good knowledge on HIV transmission (OR 2.38, 95% CI 1.76-3.21) and prevention (OR 1.94, 95% CI 1.42-2.64) compared to the students in control area.

Conclusions: The intervention was likely to have an impact on students’ knowledge about HIV transmission and prevention. We recommend to scale-up the training programme in other secondary schools with similar settings.

Keywords: HIV/AIDS education, Secondary school students, Bangladesh
THE ANALYSIS OF THE PATIENT RISK MANAGEMENT ON THE BASIS OF REMOTE HEALTH MONITORING TECHNOLOGIES
Leyla Namazova-Baranova¹, ², Elena Vishneva¹, Elena Antonova¹, Vladimir Smirnov¹, Roman Suvorov³, Ivan Smirnov³, Aleksey Molodchenkov³
¹Scientific Center of Children’s Health, ²The Russian National Research Medical University named after N.I. Pirogov, ³The Institute for system analysis of Russian Academy of Sciences, Moscow, Russia

Background and aims: The introduction of information technologies in the process of interaction between doctor and patient is important. Aim: to analyze the prospects of the development of remote monitoring systems, to identify their shortcomings and to propose solutions.

Methods: The review had included 36 publications, 1 meta-analysis concerning telemedicine from 2001 to 2015y.

In the evaluated studies the following questions were explored:
· research of social and economic aspects of telemedicine (evaluation of usefulness)
· the view of information systems or architectures.
The following characteristics were taken:
· purpose of the system;
· interaction of patients and physicians;
· training and impact on lifestyle - the formation of health-preserving behaviors (with the exception of smoking, adequate physical activity, etc.);
· self-management.

Results: The following problems of implementation of telemedicine systems were identified:
· high cost, the need to purchase special equipment and devices;
· the need for training and motivation of both staff and patients;
· lack of a unified architecture, protocol stack and hardware-software platform for the integration of systems at all stages of the process - from data collection to its processing, decision-making and patient feedback.
Despite the fair amount of existing telemonitoring systems almost all of its provide only data collection, while the entire analytical part falls on the doctor. Almost all of studies were focused on the elderly and adults.

Conclusions: A promising direction is the development of a prototype system for remote health monitoring in pediatric patients.
Keywords: analysis, patient risk management, remote health monitoring
THE PROSPECTS OF TELEMEDICINE TECHNOLOGIES IN PEDIATRICS

Leyla Namazova-Baranova\textsuperscript{1, 2}, Elena Vishneva\textsuperscript{1}, Elena Antonova\textsuperscript{1}, Vladimir Smirnov\textsuperscript{1}, Ivan Smirnov\textsuperscript{3}, Aleksey Molodchenkov\textsuperscript{3}

\textsuperscript{1}Scientific Center of Children’s Health, \textsuperscript{2}The Russian National Research Medical University named after N.I. Pirogov, \textsuperscript{3}The Institute for system analysis of Russian Academy of Sciences, Moscow, Russia

**Background and aims:** The integration of IT capabilities of e-Health in clinical practice is not so fast. The aim of the study was to create an integrated model of health information system for pediatrics.

**Methods:** During the study 40 publications, 2 meta-analyses from 2005 to 2015 y. regarding the use of remote monitoring in healthcare were reviewed on the following topics:

- establishment of the remote collection of patient data;
- automatic analysis of clinical data.

**Results:** The studied systems were divided into 3 groups in terms of the integration of data mining in order to diagnose or predict exacerbations:

- organizing the collection and analyzing of data with the module;
- no organizing the collection, but implementing data analysis for a narrow range of diseases;
- organizing the collection and analyzing of the data for realizing a narrow range of diseases.

The evaluation of the proposed options for the transfer of data to their storage and analyses was conducted. Medical data system with integrated part of telemedicine is able to generate a huge stream of data, in which a simple analysis of the data on the local device aggregates (smartphone) can be used.

For data storage organization is natural to use a relational database management system, and for the exchange of information – a standardized platform-independent protocols.

**Conclusions:** The architecture of pediatric remote health monitoring and analytic system, in which in addition to the function of collecting patients data, has to have a subsystem of patient monitoring, designed for an automatic assessment of the health indices and patient state.

**Keywords:** telemedicine technologies
THE RULE OF PLAYROOM IN THE RECOVERY OF HOSPITALIZED CHILDREN
Bárbara Pinto Nasr1,1, Cely Morcelf1
1Universidade do Grande Rio, Rio de Janeiro, Brazil

Background and aims: Playroom has become important in the recovery of hospitalized children as therapy to improve the health treatment. Thus, the concept of the playroom expands from psychological improvement of playing as fun, going so far as a learning process, since the patient will be away from the school environment during treatment. The existence of a space dedicated to children within a hospital environment reflects the concern with the welfare psychosocial of the child, providing greater confidence in patients and families.

Methods: It is a literature review, which was used articles available in SCIELO and PubMed databases, in Portuguese and English during 1995-2015. We did the initial evaluation of the materials by reading the abstracts and selected only those who attended the objective of the study, which is the importance of the playroom in the hospital.

Results: The results demonstrated the benefits of playroom for hospitalized children and that this feature can be used in hospitals as a non-pharmacological and non-invasive intervention, encouraging a development process that aimed the children health and their recovery.

Conclusions: The conclusion of this study indicates that the action of the hospital playroom brings both physiological and psychological benefits for children at any age and it can be integrated into an effective method to qualify the care and recovery of hospitalized children.

Keywords: Children recovery, Playroom
THE USE AND MISUSE OF TOBACCO AMONG INDIGENOUS CHILDREN AND YOUTH IN CANADA
Radha Jetty

Sexual Medicine, Children’s Hospital of Eastern Ontario, Ottawa, Canada

Background and aims: While tobacco is sacred in many Indigenous cultures, the recreational use of commercial tobacco is highly addictive and harmful. Smoking rates for Canadian Indigenous youth have reached alarming levels. Pediatric health care providers need to be aware of this crisis and collaborate with Indigenous communities to prevent and treat tobacco misuse in a culturally appropriate manner. The aim was to conduct a comprehensive review of the traditional and grey literature to identify prevalence, risk factors and consequences of tobacco misuse and to determine best practices for smoking prevention and cessation in Canadian Indigenous children.

Methods: Using keywords, a basic search strategy was conducted using Scopus, Ebscohost and ProQuest. Following this, Canadian Indigenous organization websites were surveyed. This literature review generated 41 reference articles that were utilized to develop best practices.

Results: Best practices include accessing culturally relevant community and school-based prevention and cessation programs, early individual counseling, pharmacotherapy, enforcement of legislation regarding access, use, sale, taxation and promoting community based participatory research to identify and evaluate best practices for culturally appropriate prevention and cessation strategies in Indigenous communities.

Conclusions: The prevalence of tobacco misuse and resultant health consequences among Indigenous people is high. Preventing and reducing tobacco misuse requires a culturally appropriate, multi-faceted approach that is rooted in strong community leadership and supported by governments.

Keywords: Canadian Paediatric Society, Indigenous youth, tobacco use
BACKGROUND AND AIMs: The study reports the experience of use the the *Whatsapp Messenger* as an interaction tool with 15 adolescent's mothers aged from 14 to 19 years old accompanying their children in child care nursing consultation (NC).

**METHODS:** Report experience study that aimed to describe the use of the *whatsapp Messenger* to monitor health demands of children attending in NC at the outpatient clinic of the Cruz de Malta, a philanthropic institution in São Paulo, Brazil. The mothers were asked about the possibility of using the *whatsapp Messenger* application and were encouraged to share the child's health-related information. All of them agreed to participate by signing informed consent form.

**RESULTS:** Breastfeeding, hygiene, complementary feeding, accidents and prevalent childhood diseases were the main topics approached. The application was also used to communicate in case of non-informed absence, to cancel and reschedule consultation, to inform about possible delays and request emergency consultation.

**CONCLUSIONS:** The use of *Whatsapp Messenger* was effective for health education in childcare and contributed to the systematic monitoring of children in order to promote their healthy growth and development. Besides, it favored for controlling the systematic adhesion to NC and for strengthening the bonds between the adolescents and nurses.

**KEYWORDS:** Pediatric Nursing, Child Care, Health Promotion
THINKING INSIDE THE BOX: DEVELOPING AN ESSENTIAL PACKAGE OF HEALTH CARE FOR CHILDREN IN SOUTH AFRICA

Anthony Westwood*, Neil McKerrow, Lesley Bamford, Anne Robertson

1Paediatrics, University of Cape Town, Cape Town, 2Health, KwaZulu Natal Department of Health, Pietermaritzburg, 3Child Health Directorate, Department of Health, Pretoria, 4Paediatrics, University of Limpopo, Polokwane, South Africa

Background and aims: Packages of care are established means of improving health outcomes. They are particularly suited to children's health because major gains in outcomes can be achieved with relatively simple interventions. Constant at about 41 deaths per 1000 live births, South Africa's under-5 mortality rate remains high. Major inequities in outcomes and health care access contribute to this. To address these issues as part of moves towards universal health care coverage, an Essential Package of health Care for Children (EPaCC) has been recommended.

Methods: The framework for the EPaCC sets out a range of content areas such as Priority Diseases and Neonatal Care. Core requirements for comprehensive care pathways within the content areas are defined and stratified according to levels of health care. Using this framework, costing of content areas and specific packages becomes feasible.

Results: A prioritization process has begun based on ‘no choice’, ‘maximum impact’ and equity considerations. This includes plans for a consultation process within and beyond the government sector. Priority packages such as Neonatal Care, Diarrhoea and Pneumonia Care, and an adaptation of the WHO Pocket Book for District Hospitals are being developed.

Conclusions: This EPaCC should contribute significantly to improved child health outcomes in South Africa.

Keywords: child health, Child Survival, Equity, essential package, South Africa
Usage of (AAT, AAI) Trained Dogs in Alleviating Stress and Perceived Pain Among Preschoolers, During the Routine Medical Exam with Vaccination.

Renata Fridrih¹, Anica Persoglia Petrac², Gordana Buljan Flander³

¹Occupation Therapy, ²Paediatrics, Society Our Children Sisak, Sisak, ³Psychology, Child Protection Center of Zagreb, Zagreb, Croatia

Background and aims: Each year, around 40,000 Croatian 6-7 year-olds (preschoolers), as a part of the mandatory primary school enrolment procedure, undergo regular medical exam which includes vaccination. Medical procedures per se are known to induce significant amount of stress, especially in children, with vaccination being one of the most disliked ones. Therefore, medical staff and healthcare providers are constantly trying to find means of making these kind of procedures less stressful, especially to children. The goal of this study was to evaluate the usage of ‘friendly distraction’ to alleviate stress and lower the perceived pain level among preschoolers being vaccinated.

Methods: The sample consisted of 500 healthy 6 and 7 years old preschoolers, divided into experimental and control group. Two bichon havanez therapeutic dogs, trained at the "Society Our Children – Sisak", were employed as the ‘friendly distraction’ – independent variable (present - experimental/not present - control).

Results: Initial (before) and post (after) the vaccination perceived stress level was measured using the The Self-Assessment Manikin (SAM – 5 point) (Bradley & Lang 1994) and the perceived level of pain was measured after the vaccination, using the Wong-Baker FACES Pain Rating Scale (Wong et al., 2001).

Conclusions: The results show equal initial levels of stress in both experimental and control group, while experimental group reports lower level post vaccination stress and perceived pain, indicating the potential positive moderator effect of exposure to trained therapeutic animals.

Image:
Keywords: Alleviation of stress, Animal assisted therapy, Children’s Health
ASSOCIATION ATOPIC DERMATITIS AND PSORIASIS IN MOROCCAN CHILDREN
Fatima Zahra Elfatoiki, Fouzia hali, Khadija khadir, Soumia chiheb
1dermatology, UH Ibn Rochd, casablanca, Morocco

**Background and aims:** Atopic dermatitis (AD) and psoriasis are the two most common immune-mediated inflammatory disorders affecting the skin. The association or overlaps of AD with psoriasis may pose diagnostic and management difficulties. The aim of our study is to determine clinical features in children who have psoriasis-dermatitis overlap.

**Methods:** We collected all cases of Children with features of both psoriasis and AD, diagnosed between January 2004 and December 2014. The diagnosis of the psoriasis-dermatitis overlap was established by the coexistence of psoriasis and AD clinical criteria.

**Results:** We collected 20 cases of psoriasis-dermatitis overlap, 12 boys and 8 girls, the mean age was 8 years. A history of personal or familial atopy was found in 6 patients and familial history of psoriasis in 8.

The clinical features were erythematousquamaus lesions in 16 patients, flexural eczema in 7, scaly scalp in 5 and nappy rash in 3 patients. 14 Children presented typical paediatric psoriasis with flexural eczema.

For a treatment, we used a topical corticosteroids in 17 cases, topical calcipotriol- bétraméthasone in 3 cases, topical tacrolimus in 1 case and antistreptococcal antibiotics in 7 cases.

**Conclusions:** We found that children with psoriasis-dermatitis overlap had clinical features that characterise childhood Psoriasis.

AD and psorias may co-exist in the same undividual. In Beer et al. study, 16.7% of atopic dermatitis patients had Psoriasis and 9.5% of Psoriasis patients had AD. AD and psoriasis have distinct genetic mechanisms with opposing effects in shared pathways influencing epidermal differentiation and immune response.

**Keywords:** Atopic dermatitis, overlap, Psoriasis
Dermatology

CHILDHOOD TYPE 1 DIABETES MAY INCREASE THE RISK OF ATOPIC DERMATITIS
Chien-Heng Lin1, Cheng-Li Lin2, Wei-Ching Lin3 on behalf of College of Medicine, School of Medicine, China Medical University, Taichung, Taiwan, Chia-Hung Kao4
1Pulmonary Medicine, Children's Hospital of CMU, 2Management Office for Health Data, 3Radiology, 4Nuclear Medicine and PET Center, China Medical University Hospital, Taichung, Taiwan, China

Background and aims: We designed a retrospective cohort study to investigate the hypothesis that childhood T1DM is a risk factor for subsequent AD.

Methods: We identified 3,386 T1DM patients newly diagnosed from 1998-2011 and 12,725 randomly selected controls without T1DM, and both cohorts were followed up until the end of 2011 to evaluate the AD risk. We used Cox proportional hazard regression models to analyze the risk of AD.

Results: The overall AD incidence rate was 1.40-fold significantly higher in the T1DM cohort than in the non-T1DM cohort (3.31 vs 2.35 per 1000 person\-y). After adjustment for potential risk factors, the overall risk of AD remained higher in the T1DM cohort (adjusted hazard ratio = 1.76, 95% CI = 1.29-2.39) compared with those without T1DM. Compared with the non-T1DM cohort, the T1DM patients with more ER visits (adjusted HR: 30.1, 95% CI = 18.7–48.5) or hospitalizations (adjusted HR:70.3, 95% CI = 45.6–114.5) had higher risk of subsequent AD.

Conclusions: This nationwide, retrospective cohort study demonstrated that childhood T1DM may increase the risk of AD.

Keywords: None
Dermatology

DERMATOSCOPIC PATTERNS OF ACRAL NEVI IN PEDIATRIC POPULATION OF SANTA CATARINA, NUEVO LEON
Alejandra Zelaya Castrejón¹, Karla Guerrero Gómez², Laura Ramos Gómez², Gabriela Guzmán Navarro*, Julieta Rodríguez de Ita²
¹Physician and Surgeon Student, ²Pediatrics Department, Escuela de Medicina, Tecnológico de Monterrey, Monterrey, Mexico

Background and aims: Acral melanoma is the leading cause of death from skin cancer associated to congenital melanocytic lesions in Mexico. Although rare in children, the prevalence of acral nevi is unknown. We sought to describe the prevalence of acral melanocytic nevi in pediatric patients between 3 and 12 years old in Santa Catarina, Nuevo Leon, as well as to inspect their primary dermatoscopic patterns and location.

Methods: We examined acral sites in patients who consulted between July and September 2014. Lesions were visualized with a dermatoscope in addition to measure quantity, location and longest diameter.

Results: Out of 145 patients enrolled, 17 had nevi, reporting a total of 20 melanocytic lesions (11.7%). Nevi were present in 6 out of 78 girls and 11 out of 67 boys, representing total prevalence of 7.7% and 16.4%, respectively. Phototype IV had significant predominance (19%) over phototype III (4%), which translates into an Odds ratio of 4.5. Nevi analysis documented the longest diameter between 0.5mm and 8mm, with an average of 2.8mm. Parallel-furrow pattern was the most common dermatoscopic feature (45%), followed by lattice-like and homogeneous pattern (20% and 15%, respectively); fibrillar, dotted ridges, globular and mixed ridges and globular pattern represented 5% each.

Conclusions: We found an 11.7% prevalence of acral nevi differing from the previously published 41.9% in Mexican adults but matching previous studies that state nevi could grow with aging. Furthermore, we found a higher prevalence in boys than girls, in contrast to previously published studies.

Keywords: acral nevi, dermatoscopic, melanocytic
DIFFERENT DOSES OF PROPRANOLOL IN THE TREATMENT OF INFANTILE HEMANGIOMA: A COHORT STUDY

Lin Ma

Department of Dermatology, Beijing Children’s Hospital, Beijing, China

Background and aims: To compare the efficacy, adverse reactions and recurrence rate of different doses of propranolol in the treatment of potentially disfiguring or functionally threatening infantile hemangioma (IH).

Methods: 100 patients with IHs were divided into 2 groups, A and B (n = 50 in each), receiving oral propranolol, 2 mg/kg/day and 1.5 mg/kg/day, twice daily. Follow up was done for at least 9 months. Visual Analogue Scale (VAS) were recorded. No regrowth up to 1 month of stopping treatment was considered as success with no recurrence.

Results: (1) A minimum 50% improvement was considered as excellent response are as follows: (a) 3-month-follow up: 16 patients in A and 14 in B (P= 0.663). (b) 6-month-follow up: 39 patients in A and 28 in B (P=0.019). (c) 9-month-follow up: 46 patients in A and 37 in B (P=0.017). (2) VAS results are as follows: (a) color fading—p>0.05 in A compared to B in 3 months; p<0.05 in A compared to B in 6 months; p<0.05 in A compared to B in 9 months. (b) flattening—p<0.05 in A and B in 3, 6 and 9 months; (3) adverse reactions are as follows: (a) 3-month-follow up: 4 patients in A and 1 in B (P=0.169). (b) 6-month-follow up: 6 patients in A and 4 in B (P=0.505). (c) 9-month-follow up: 6 patients in A and 5 in B (P=0.749). (3) recurrence rate: 14 patients in A and 16 in B (P=0.663).

Conclusions: Propranolol is an effective drug in the treatment of IH, there was a better efficacy of taking it with 2mg/kg/d than 1.5mg/kg/d, adverse reaction and recurrent rate after stopping the drugs did not increase with the dose increasing.

Keywords: Infantile hemangioma, propranolol
Efficacy and Safety of Crisaborole, a Novel, Nonsteroidal, Anti-Inflammatory, Phosphodiesterase Inhibitor in Phase 3 Studies in Children and Adults with Mild-to-Moderate Atopic Dermatitis

A. Paller1, W. Tom2, 3, M. Lebwohl4, R. Blumenthal5, M. Boguniewicz6, 7, R. Call8, L. Eichenfield2, 3, D. Forsha9, W. Rees10, E. Simpson11, L Stein Gold12, A. Zaenglein13, M. Hughes5, M. Spellman5, L. Zane5, A. Hebert14
1Northwestern University Feinberg School of Medicine, Chicago, 2Rady Children’s Hospital-San Diego, San Diego, 3University of California, San Diego, La Jolla, 4Icahn School of Medicine at Mount Sinai, New York, 5Anacor Pharmaceuticals, Inc., Palo Alto, 6National Jewish Health, 7University of Colorado School of Medicine, Denver, 8Clinical Research Partners, Richmond, 9Jordan Valley Dermatology & Research Center, West Jordan, 10PI-Coor Clinical Research, Burke, 11Oregon Health & Science University, Portland, 12Henry Ford Health System, Detroit, 13Pennsylvania State Hershey College of Medicine, Hershey, 14University of Texas Health Science Center at Houston, Houston, United States

Background and aims: Atopic dermatitis (AD) is a chronic inflammatory skin disease that develops in ~ 85% of patients by age 5. Crisaborole Topical Ointment, 2% is a novel, nonsteroidal, anti-inflammatory phosphodiesterase 4 inhibitor being investigated for the treatment of AD. Here, we present safety and efficacy results of crisaborole in patients with mild-to-moderate AD from 2 identically designed, double-blind, vehicle-controlled, multicenter phase 3 studies (301, 302).

Methods: Patients ≥2 years old (mean age: ~12 years) with mild-to-moderate AD were randomized 2:1 to receive crisaborole or vehicle twice daily with weekly evaluations from Day 8 (D8) through D29. AD disease severity was analyzed with the Investigator’s Static Global Assessment (ISGA). Supportive efficacy endpoints examined all clinical signs of AD, including pruritus.

Results: At D29, a greater proportion of crisaborole-treated patients achieved ISGA success than vehicle-treated patients (301: 32.8 vs 25.4, P=0.038; 302: 31.4 vs 18.0, P<0.001) and a greater proportion achieved ISGA scores of “almost clear/1” or “clear/0” (301: 51.7 vs 40.6, P=0.005; 302: 48.5 vs 29.7, P<0.001). Crisaborole-treated patients achieved success in ISGA and improvement in pruritus earlier than vehicle (P<0.001). By D29, more crisaborole-treated patients achieved success for all clinical signs of AD. Treatment-related adverse events were infrequent, mild/moderate in severity, and transient.

Conclusions: Crisaborole represents a novel, efficacious, and safe treatment for children and adults with mild-to-moderate AD.
Keywords: atopic dermatitis, phosphodiesterase 4, pruritus
HOSPITAL ACQUIRED SKIN LESIONS IN PEDIATRIC PATIENTS - A PROSPECTIVE CROSS-SECTIONAL STUDY

Srikanta Basu¹, Nidhi Dhariwal², Ram Chander³
¹Paediatrics, Lady Hardinge Medical College and KSCH, ²Paediatrics, ³Dermatology, Lady Hardinge Medical college, New Delhi, India

Background and aims: Hospital acquired skin lesions can arise from any aspect of healthcare management including any procedure or medication leading to the loss of skin integrity. There is paucity of data regarding these lesions in general ward settings where this problem goes unattended. This study was conducted to determine the proportion of various types of skin lesions acquired during hospital stay in paediatric patients.

Methods: This was a Hospital-based Crosssectional Observational study done over a period of 9 months. Out of 3 019 patients admitted in the unit and unit admissions shifted to PICU, 400 consecutive patients in the age group of 0-18 years with hospital acquired skin lesions (Traumatic lesions, Cutaneous adverse drug reactions and Healthcare associated skin infections) were enrolled and followed up till discharge.

Results: Amongst general pediatric wards, majority were in the age group of 1 month- 1 year (50.4%, 191 out of 379) followed by 24.54% patients in age group of upto 1 month of age. Of these, 86.27% were traumatic lesions (327/379), 10.03% were CADRs (38/379) and 3.7% were infective lesions (14/379). Extravasation (calcium and Potassium) and adhesive lesions were the two most common lesions.

Conclusions: Hospital acquired skin lesions are prevalent in pediatric general wards and some are preventable, but some are unintended, undesired and perhaps, unpreventable complications to the standard protocol of treatment. There is an urgent need to recognize these lesions, which are currently underreported and formulate some form of guidelines to treat and prevent these lesions to bring about objectivity.
Keywords: children, hospital acquired, skin lesions
Dermatology

HYPER IGE >2000 IN CHILDHOOD ECZEMA, THE PROGNOSTIC VALUE

Chantel Ng¹, Kam Lun Hon¹, Ting Fan Leung¹
¹Paediatrics, The Chinese university of Hong Kong, Hong kong, Hong Kong, China

Background and aims: Atopic eczema is a common childhood disease associated with high IgE and eosinophilia. We characterized the clinical features associated with hyper-IgE (defined as IgE >2000) in eczema.

Methods: Nottingham Eczema Severity Score (NESS), family and personal history of atopy, skin prick test for common food and aeroallergens, highest serum IgE ever and eosinophil counts were evaluated. Patients with paired NESS available [childhood-NESS is NESS performed at <10 years of age; adolescence-NESS is NESS performed at aged >10 years] were further analyzed.

Results: Hyper IgE was associated with male gender, paternal atopy, personal history of atopic rhinitis, asthma, dietary avoidance, use of wet wrap, traditional Chinese medicine (TCM use), immunomodulant (azathioprine or cyclosporine), skin prick sensitization by food, dust mites, cat, dog ?food, eosinophilia, more severe disease during childhood and during adolescence (p=0.0001-0.035). Logistic regression showed that hyper IgE was associated with personal history of asthma, use of wet wrap, immunomodulant use ever, dust mite sensitization, eosinophilia and severe disease during adolescence (p<0.0001).

Conclusions: Hyper IgE is associated with asthma, dust mite sensitization, eosinophilia and more severe eczema beyond early childhood.

IgE >2000 IU/L may act as a tool to aid prognostication of this disease.

Keywords: Atopic dermatitis, Eczema, Ige, PAEDIATRICS
LONG-TERM SAFETY OF CRISABOROLE, A NOVEL, NONSTEROIDAL, TOPICAL, ANTI-INFLAMMATORY PHOSPHODIESTERASE 4 INHIBITOR, IN CHILDREN AND ADULTS WITH MILD-TO-MODERATE ATOPIC DERMATITIS

Lawrence Eichenfield¹, ², Robert Call³, Douglass Forsha⁴, Joseph Fowler⁵, Adelaide Hebert⁶, Mary Spellman⁷, Linda Stein Gold⁸, Merrie Van Syoc⁷, Lee Zane⁷, Eduardo Tschen⁹

¹Rady Children’s Hospital-San Diego, San Diego, ²University of California, San Diego, La Jolla, ³Clinical Research Partners, LLC, Henrico, ⁴Jordan Valley Dermatology & Research Center, West Jordan, ⁵Dermatology Specialists Research LLC, Louisville, ⁶University of Texas Health Science Center Houston, Houston, ⁷Anacor Pharmaceuticals, Inc., Palo Alto, ⁸Henry Ford Health System, Detroit, ⁹Academic Dermatology Associates, Albuquerque, United States

Background and aims: Atopic dermatitis (AD) is a chronic inflammatory skin disease that develops in ~85% of patients by age 5 and often requires long-term treatment. Here, we present the long-term safety results of Crisaborole Topical Ointment, 2% on patients ≥2 years of age with mild-to-moderate AD.

Methods: An open-label, long-term (48-week), multicenter safety study (303) was conducted in patients who opted to continue treatment after completing a 28-day Phase 3 pivotal study (301, 302). Patients (mean age: 11.7 years) were assessed for AD severity every 4 weeks and treated with crisaborole if severity was ≥ mild. Safety measures assessed included adverse events (AEs), vital signs, clinical laboratory results, and physical examinations.

Results: During studies 301, 302, and 303, 65% of patients reported ≥1 treatment-emergent AE (TEAE); most were mild (51.2%) or moderate (44.6%) in severity and considered unrelated to treatment (93.1%). Analysis of the frequency and severity of TEAEs indicated a favorable safety profile amongst pediatric, adolescents, and adult patients. Overall, treatment-related AEs occurred in 10.2% of patients, and none of the 7 treatment-emergent serious AEs reported in 303 were considered treatment-related. Only 9 patients (1.7%) discontinued the long-term study because of TEAEs. There were no cutaneous adverse reactions reported or safety signals identified.

Conclusions: Crisaborole demonstrated a favorable safety profile for the long-term treatment of patients with mild-to-moderate AD aged 2 years or older.

Keywords: Atopic dermatitis, long-term safety, phosphodiesterase 4
Background and aims: To assess efficacy of oral propranolol treatment for infantile haemangiomas in the Asian population and review factors affecting its' efficacy.

Methods: Retrospective review of medical records of patients treated with propranolol for infantile haemangiomas at KK Women's and Children's Hospital from Jan 2010-Feb 2015.

Results: Total of 60 female and 19 male patients were analysed. 41% were born preterm. 59.5% were Chinese, 7.6% were Indian, 11.4% were Malay and 21.5% from other races. The commonest site was head/neck with 55 patients (70%), followed by trunk with 10 patients (13%) and upper limb with 8 patients (10%). Majority were mixed haemangiomas (49.2%), 34.2% were deep and 16.5% were superficial haemangiomas. Mean age at onset of haemangioma was 2.3 weeks, median age of starting treatment was 5 months, and median time of response to treatment was 2 weeks.

44% of patients experienced more than 75% improvement, while 29% experienced 50-75% improvement. Efficacy was uninfluenced by gestational age, sex, age at onset, haemangioma location, depth or size. Patients who started oral propranolol before 12 months old had better improvement (p=0.002).

Conclusions: Propranolol remains an effective treatment for infantile haemangiomas in the Asian population. It exhibits better efficacy when started before 12 months old.

Keywords: hemangioma
Background and aims: Psoriasis is a common, chronic inflammatory disorder that affects an estimated 2.0 to 3.5% of the population (1, 2). Extensive research has focused on the co-morbidities associated with psoriasis as well as its effects on the quality of life of the child, and the adult caretaker. Children suffering from psoriasis have been found to have a higher prevalence of: obesity, diabetes mellitus, hypertension, juvenile arthritis, Chron’s disease, and psychiatric disorders (1, 3, 5, 6).

Methods: A literature search was conducted using the PubMed databases. Only the English literatures within the last 5 years were selected. Relevant older references were also assessed for comprehensiveness.

Results: Clinical manifestations of pediatric psoriasis differ between the ages. The quality of life of those diagnosed at a younger age are more likely to be adversely affected through depression, discrimination in a social setting and other significant co-morbidities. Currently there are no guidelines on the treatment for pediatric psoriasis. Commonly used regimens like topical steroids and phototherapy still warrant larger studies to investigate the safety on the pediatric population.

Conclusions: Pediatric psoriasis has numerous challenges: it presents with different clinical characteristics from the adult counterpart, and the presentation changes with age. Many treatment options approved for adults, have not been studied in children; adherence is difficult especially in the toddler and adolescent age group. Larger studies are needed to further investigate the safety and efficacy of all current treatment modalities.

Keywords: epidemiology, pediatric, Psoriasis, systemic treatment, topical treatment
THE CLINICAL OBSERVATION ON THE TOPICAL TREATMENT OF INFANTILE HEMANGIOMAS WITH CARTEOLOL SOLUTION

Li Li¹, Lin Ma²
¹Department of Dermatology, Beijing Children’s Hospital, ²Department of Dermatology, Beijing Children’s Hospital, Capital Medical University, Beijing, China

Background and aims: To evaluate the efficacy and safety of carteolol solution for infantile hemangioma (IH).

Methods: Fifty five cases of IH were studied. Every patient was either superficial hemangioma or combined hemangioma. 2% carteolol hydrochloride eye drops was topical applied using wet dressing therapy twice daily. Follow up was done for at least 6 months. Thickness, tumor volume of hemisphere and CDFI blood flow grade were recorded. Safety evaluation adopted the adverse effect rate.

Results: There was still increasing trend in 8 cases until the end of follow-up. The others ceased to grow, the tumor became soft and decreased. Doppler ultrasound examination showed the thickness ranged from 0.07cm to 1.4cm. Tumor volume of hemisphere ranged from 0.02cm³ to 16.99cm³. The CDFI blood flow grade ranged from grade 0 to grade III. The result was that the age difference (under than 6 month), thickness, volume of hemisphere and the blood flow grade were not significantly associated with the response of 6 months treatment.

Conclusions: 2% carteolol solution is safe and effective in the treatment of IH. The effect was more remarkable with treatment prolonged. Gender of the patients, age (under 6 months), location of lesion, thickness, volume of hemisphere, and CDFI blood flow grade had no significant effect on the efficacy. During the application of carteolol, there was neither obvious local irritation nor systemic adverse drug reactions. Carteolol could be used as a choice of the treatment of superficial IH.

Keywords: Carteolol, Infantile hemangioma, Topical Application
**Development, Neuro-developmental Disability**

**A LONGITUDINAL STUDY OF INDIVIDUAL VARIABILITY IN INFANT AND TODDLER SLEEP PATTERNS**

**BY A MOBILE APPLICATION**

Jodi A. Mindell\(^1,2\), Erin S. Leichman\(^2\), Christina Lee\(^3\), Bula Bhullar\(^4\), Russel M. Walters\(^3\)

\(^1\)The Children’s Hospital of Philadelphia, \(^2\)Saint Joseph’s University, Philadelphia, \(^3\)Johnson & Johnson Consumer Inc, Skillman, \(^4\)Giant Sky, Philadelphia, United States

**Background and aims:** Over the first years, sleep patterns change dramatically from highly fragmented to consolidated sleep, and total sleep time decreases. The aim of this longitudinal study was to investigate individual variability in infant and toddler sleep patterns.

**Methods:** Data were collected via a free publicly available iPhone application (app) over 19 months. App users recorded date, start time, and duration of sleep sessions. 87 children were each tracked for over 500 sessions.

**Results:** Sleep patterns change with age and similar patterns of sleep development emerge; however, there is wide variability in the transition from fragmented to consolidated sleep. Overall, 28 infants and toddlers sustained fragmented sleep (from 1-12 months), 24 transitioned from fragmented to consolidated sleep (1-24 months), and 35 had consolidated sleep (3-24 months). Some transitioned to consolidated sleep rapidly while many children transitioned over months. The changing pattern of daytime sleep from 2 naps to 1 longer nap also had wide individual variability.

**Conclusions:** There is significant individual variability in the sleep of infants and toddlers, especially from fragmented to consolidated sleep, both during the nighttime and for naps.

**Keywords:** variability, consolidation, infants, iPhone, sleep, toddlers
ATYPICAL CEREBRAL PALSY: EDMONTON EXPERIENCE

Basma Aljabri¹,², Helly Goez¹
²Pediatrics, King Abdul Aziz University, Jeddah, Saudi Arabia

¹Pediatrics, University of Alberta, Edmonton, Canada,

Background and aims: Cerebral Palsy (CP) is a chronic condition affecting body, limb movement, muscle tone and coordination. It is caused by damage to one or more specific areas of the developing brain. The brain damage is non-progressive. A crucial point in the history is that there is no developmental regression. The aim of this study is to identify the etiology of cases with atypical presentation of CP.

Methods: A 6-year cohort data (2008-2015) was collected through chart-review of patients previously diagnosed with CP. The validity of CP diagnosis was questioned in the presence of atypical features in history, physical exam and neuroimaging.

Results: Fifty-nine patients were included (29 females-30 males). Age range 2-17 years. Etiology identified in 13.5% of the cases. Most common metabolic abnormalities were: Amino acids 27%, Lactate 11.8%, Hexosaminidase A-B ratio 6.7%, Liver function test 8.4%. Most common neuroimaging findings: Syringomyelia 11.8%, Global and/or cerebellar Atrophy 10%, Abnormal signal in basal ganglia 8.4%, White matter paucity 6.7 %

Conclusions: 1. Dyskinesia, abnormal signal in basal-ganglia, syrinx-malformation, cerebellar-hypoplasia, and white matter paucity may warrant further investigation for a disorder other than CP.

2. Abnormal amino acids and other reported non-specific lysosomal enzyme profile might warrant further metabolic and genetic investigation.

3. Normal CGH is not a stop sign to look further for into etiology.

Keywords: Developmental Disability, Neurodevelopmental disorders
CASE REPORT

INFANTILE NEURONAL CEROID LIPOFUSCINOSES: A NOVEL MUTATION IN CLN1/PPT1

Basma Aljabri¹, ², Shaily Jain¹, Helly Goez¹
¹Pediatrics, University of Alberta, Edmonton, Canada, ²Pediatrics, King Abdul Aziz University, Jeddah, Saudi Arabia

Background and aims: Neuronal Ceroid Lipofuscinoses (NCL) is the most common group of neurodegenerative disorders in childhood. The clinical presentation of these disorders includes: visual impairment, seizures, motor and cognitive regression. Up to 20% of NCL cases may present atypically. We had a 19 months old boy presented with rapid developmental regression starting at age 17 month. The regression initially observed as decrease eye contact and losing social skills. This was followed by regression in gross motor skills and acquired words. The family history is remarkable for an undiagnosed neurodegenerative condition. The identification is important for further genetic counseling to families as well as planning for palliative care.

Methods: Skin biopsy followed by enzymatic assay and genetic sequence analysis.

Results: The skin biopsy revealed granular osmiophilic deposits that are characteristically seen in INCL. PPT enzyme activity was abnormal. The gene sequence analysis was supportive of defect in CLN1 gene as a cause for INCL. It showed a novel variation in PPT1 gene, namely p.P238L:c713C>T.

Conclusions: To the best of our knowledge social regression in infancy has not been described as an initial clinical presentation of Infantile Neuronal Ceroid Lipofuscinosis. We highlight the need to include neurodegenerative disorders, other than Autism and Epileptic Encephalopathies in the differential diagnosis of social regression in infancy.

Keywords: Neurodevelopmental disorders
CHILD DEVELOPMENTAL OUTCOMES OF BOYS UNDERGOING SURGERY FOR GENITAL ANOMALIES

Francisco Schneuer¹, Andrew Holland², Sarra Jamieson³, Carol Bower³, Jason Bentley¹, Samantha Lain¹, Natasha Nassar¹
¹Menzies Centre for Health Policy, School of Public Health, ²Discipline of Paediatrics and Child Health, The Children’s Hospital at Westmead, The University of Sydney, Sydney, ³Telethon Kids Institute, The University of Western Australia, Perth, Australia

Background and aims: Male genital anomalies (GA) may have significant impact on functional and cosmetic outcomes. However, there has been little assessment on childhood development. We investigated early childhood developmental outcomes among boys with GA.

Methods: Boys with GA requiring surgical repair were compared to controls undergoing elective circumcision. Information on GA, surgical repairs and developmental outcomes was obtained via record linkage of hospital and Australian Early Developmental Census data. GEE models were used to evaluate the association between GA and development in five domains (physical health, emotional maturity, communication and general knowledge, cognitive skills and social competence).

Results: A total of 1,356 boys with GA and 836 controls were included. The mean (SD) age at assessment was 5.6 (0.3) years. There was no difference in the proportion of boys developmentally vulnerable (≥2 domains with scores <10th centile) between those with GA (13.8%) and controls (12.7%; P=0.49). There was no association between boys with and without GA and developmental vulnerability (OR: 0.99; 95%CI: 0.75-1.31) nor differences on any individual domain. Coexistent congenital anomalies, age or number of repairs did not affect the outcomes.

Conclusions: There appear to be no increased risk of poor child developmental outcomes among boys with genital anomalies.

Keywords: Developmental outcomes, male genital congenital anomalies.
CHILDHOOD VISION SCREENING IN TONGA

Lisa Hamm¹, Fiona Langridge², Cameron Grant³, Steven Dakin¹, Janice Yeoman¹, Nicola Anstice¹, Joanna Black¹, Toakase Fakakovikaetau⁴

¹Optometry and Vision Science, ²Pacific Health, ³Paediatrics: Child and Youth Health, University of Auckland, Auckland, New Zealand, ⁴Paediatrics, Vaiola Hospital, Nuku'alofa, Tonga

Background and aims: Delayed detection and treatment of childhood vision loss can interfere with neurodevelopment. Our aim was to develop and assess an electronic vision screening kit to facilitate detection of childhood vision loss. This assessment was part of a larger initiative to develop and implement new child health screening tools in Tonga, which could be used throughout the Pacific.

Methods: The study protocol consisted of standardised tasks for visual acuity, stereopsis and alignment, as well as two electronic screening tools; an autorefractor and a custom tablet based visual acuity test. We tested 249 children in Tongan primary schools (5 to 15 years, 58% female).

Results: The autorefractor and tablet tests were engaging, easy to use and consistent with the results from the standardised tests. The mean difference between the tablet and chart based acuity tests was 0.01±0.21LogMAR. Of the children tested, 10 required referral to an eye care specialists, most due to suspected astigmatism.

Conclusions: The tablet based acuity tests and autorefractor are promising options for large scale vision screening. Use of these tools in more comprehensive projects may help to understand and improve Pacific eye health - a step towards promoting healthy development and achieving educational potential.

Keywords: Neurodevelopmental disorders, Pacific Islands, Vision Screening, VISION2020
COGNITIVE DEVELOPMENT OF TODDLERS LIVING IN ECONOMICALLY DISADVANTAGED HOMES: LINKS TO HOME LEARNING ENVIRONMENT

Prahbjot Malhi¹, Jagadeesh Menon¹, Bhavneet Bharti¹, Manjit Sidhu²

¹Department of Pediatrics, Post Graduate Institute of Medical Education and Research, ²Department of Psychology, MCM DAV College for Women, Chandigarh, India

Background and aims: To examine the relationship between home learning environment and cognitive development of toddlers living in economically disadvantaged homes.

Methods: Home learning environment of 85 toddlers was assessed using the StimQ questionnaire and a home visit. The StimQ assesses cognitive stimulation at home including availability of learning materials (ALM); reading (READ), parent involvement in developmental activities (PIDA), and parent verbal responsivity (PVR). Child cognitive development was assessed with the Mental Development Index (MDI) of the Developmental Assessment Scale for Indian Infants (DASII). MDI scores < 80 were considered as cognitive delay.

Results: Nearly one-fourth (22%) of the children had MDI scores less than 80. Child-oriented resources such as toys and books were limited in the homes of poor children. There were no books in 57% of the homes. Toddlers with delayed MDI scores as compared to toddlers with normal MDI scores had significantly lower scores on total StimQ score (6.4 vs. 11.4, t=4.3, P=.001) and also on the subscales. Step wise multivariate regression analysis revealed that 25% of the variance in the MDI score was accounted by mothers’ education and PIDA score (F= 14.9, P=.001).

Conclusions: There is need to improve learning environments and reduce school readiness disparities of children growing up in poor homes.

Keywords: cognitive development, economic disadvantage, home learning environment
Development, Neuro-developmental Disability

DIAGNOSING DEVELOPMENTAL COORDINATION DISORDER: A NOVEL MODEL FOR A RESEARCH-INTEGRATED CLINIC

Jill Zwicker* 1,2, Elizabeth Mickelson2,3, Jane Shen2

1 Occupational Science & Occupational Therapy, 2 Pediatrics, University of British Columbia, 3 Sunny Hill Health Centre for Children, Vancouver, Canada

Background and aims: Developmental coordination disorder (DCD) is often under-recognized and under-diagnosed (Blank et al., DMCN, 2012). To meet this gap, we established the first research-integrated DCD diagnostic clinic in Canada in January 2014. Primary aims of the clinic are to provide: (1) assessment by a developmental pediatrician and an occupational therapist; and (2) educational materials and recommendations to families. Secondary aim is to establish a research database and collect additional data (e.g., psychosocial well-being, quality of life) from families who consent/assent.

Methods: Family physicians/pediatric specialists refer 4-12 year old children with suspected DCD. Our novel interdisciplinary clinic uses DSM-5 criteria and EACD guidelines for diagnosis and incorporates medical trainee clinical education.

Results: Over 250 referrals have been received, mostly from community pediatricians. We have seen 83 children and families, with 76 (92%) consenting to participate in the research database. Of these children, 53 (70%) received a DCD diagnosis and 6 (8%) received a provisional diagnosis; 96% had co-morbid conditions.

Conclusions: Our research-integrated clinic model fills a clinical need while building a database to inform clinical practice and recruit for future studies.

Funding: CIHR, MSFHR, CCHCSP, Sunny Hill Foundation

Keywords: Diagnosis, Interdisciplinary, Neurodevelopmental disorders
**Development, Neuro-developmental Disability**

**EARLY CHILD DEVELOPMENT AND STUNTING: FINDINGS FROM A COMMUNITY-BASED STUDY IN BANGLADESH**  
B Nahar¹, M Hosasain¹, M Mahfuz¹, T Ahmed¹  
¹NCSD, icddr,b, Dhaka, Bangladesh

**Background and aims:** Negative association between stunting and child development is well established. Data is limited from low-income countries like Bangladesh. The study aimed to explore differences in early child development (ECD) levels between stunted and non-stunted children, living in urban slum in Bangladesh.

**Methods:** Children (n=265) previously participated in a community-based study (MAL-ED study) were assessed at 6 and 24 months for developmental level using Bayley Scales of Infant and Toddler Development, third version; Home Observation for Measurement of the Environment Inventory (HOME) and anthropometric indices. Data was collected on socioeconomic status, and Water and sanitation, Assets, Maternal education, Income (WAMI) index was calculated. ECD scores were compared between stunted and non-stunted children, controlling for maternal age and body mass index, WAMI index and HOME scores.

**Results:** At 6 months, stunted children had significantly lower cognitive ($P=0.012$) and motor (fine motor: $P=0.028$; gross motor: $P=0.003$ and total motor: $P=0.003$) scores compared to non-stunted children. At 24 months, ECD scores of the stunted children were significantly poor on cognitive ($P=0.004$), motor (gross motor: $P=0.007$ and total motor: $P=0.037$) and language (expressive communication: $P=0.006$ and total language: $P=0.008$) scales than the non-stunted counterpart.

**Conclusions:** Early childhood stunting in Bangladesh is linked to poor developmental outcome.

**Keywords:** None
**Development, Neuro-developmental Disability**

**FETAL ALCOHOL SPECTRUM DISORDER (FASD) ACROSS THE LIFE SPAN: UPDATED EVIDENCE BASED CANADIAN GUIDELINES FOR GLOBAL HEALTH, DIAGNOSIS AND PREVENTION**

Christine Loock\(^1\), Jocelynn Cook\(^2\), Courtney Green\(^3\), Christine Lilley\(^4\), Nicole LeBlanc\(^5\), Albert Chudley\(^6\), Sally Anderson\(^7\), Julianne Conry\(^8\) and Canada FASD Research Network Diagnostic Guidelines Steering Committee funded by Public Health Agency of Canada

\(^1\)Pediatrics, University of British Columbia, Vancouver, \(^2\)Society for Obstetricians and Gynaecologists of Canada, Ottawa, \(^3\)Biomedical and Molecular Sciences, Queen’s University, Kingston, \(^4\)CDBC Psychology, Sunny Hill Health Centre, Vancouver, \(^5\)Pediatrics, Universite de Moncton & Universite de Sherbrooke, Moncton, \(^6\)Medical Genetics, University of Manitoba, Winnipeg, Canada, \(^7\)NIAAA, National Institutes of Health, Bethesda, United States, \(^8\)Professor Emerita, University of British Columbia, Vancouver, Canada

**Background and aims:** A pattern of anomalies with lifetime consequences resulting from prenatal alcohol exposure was described over 40 years ago as fetal alcohol syndrome. Changing gender roles and economic development have led to concerning increases in women’s binge and per capita drinking worldwide. Prevalence of fetal alcohol spectrum disorder (FASD), 1 per 100 people and higher in regions, is a leading cause of preventable, non-genetic developmental disorders and perinatal complications. Responding to global evidence for effective interventions and impact, updated guidelines were requested.

**Methods:** A 14-member expert committee was selected from neuropsychology, pediatrics, social work, genetics, researchers, parents and community. Literature review plus national/international expert consultations were collated. The guidelines were developed using Appraisal of Guidelines, Research and Evaluation framework.

**Results:** Literature reveals measurable impairments in regulation, neurocognition and adaptive functions, after binge drinking and throughout pregnancy, underscoring the need for preconception counseling. Diagnosing FASD requires a multidisciplinary approach, accessing standardized physical/neurodevelopmental measures. Earlier diagnosis improves outcomes for affected individuals and informs sensitive routine pre-pregnancy counseling for prevention.

**Conclusions:** Healthcare systems are re-evaluating existing programs to develop cost-efficient/effective models. These updated, best-practice, evidence-based guidelines for diagnosis of FASD should lead to more effective global prevention and care across the lifespan.

**Image:**
Diagnostic Algorithm for FASD

Abbreviations
PAE: Prenatal Alcohol Exposure; dx: diagnosis; CNS: Central Nervous System (Yes/No impairment in ≥ 3 brain domains); FASD w/o sff: Fetal Alcohol Spectrum Disorder with sentinel facial features diagnosis; FASD w/o sff: Fetal Alcohol Spectrum Disorder without sentinel facial features diagnosis; At risk: At risk for Neurodevelopmental Disorder and FASD, Associated with Prenatal Alcohol Exposure Designation; <6y: less than 6 years of age

*At risk* designation includes situations where a full neurodevelopmental assessment is not conclusive due to age or situational factors, therefore FASD may not be the diagnosis. Clinical judgment is recommended.

Keywords: birth defects, Developmental Disability, diagnostic accuracy, early detection/early intervention, fetal outcome, Guidelines, Mental health, Multidisciplinary, Prevention
FETAL ALCOHOL SPECTRUM DISORDERS IN AUSTRALIA: PROVISIONAL FINDINGS OF PROSPECTIVE NATIONAL CASE SURVEILLANCE

Marcel Zimmet 1, 2, Amy Phu 1, 2, Yvonne Zurynski 1, 2, Rochelle Watkins 3, Carol Bower 3, Elizabeth Elliott 1, 2 and APSU Project Reference Group

1 Australian Paediatric Surveillance Unit, The Children's Hospital at Westmead, 2 Discipline of Paediatrics and Child Health, University of Sydney, Sydney, 3 Telethon Kids Institute, Perth, Australia

Background and aims: The incidence of Fetal Alcohol Spectrum Disorders (FASD) in Australia is unknown.

Methods: Prospective active national case-finding of children with FASD under 15 began in December 2014, using Australian diagnostic criteria 1.

Results: Until October 2015, paediatricians reported 13 new cases of Fetal Alcohol Syndrome (FAS), 7 partial FAS (PFAS) and 7 Neurodevelopmental Disorder-Alcohol Exposed (ND-AE), and three cases outside diagnostic guidelines. 75% were male. Nearly as many children were first suspected of having a FASD by their parent or caregiver as their paediatrician. Compared to FAS/PFAS surveillance in 2001-04 2, newly reported FASD cases are diagnosed later (mean age 6 vs 3 years), more often in foster/adoptive care (63% vs 38%) and predominantly Caucasian (58%) rather than Indigenous (37%).

Conclusions: Provisional findings of national FASD case surveillance suggest different demographics patterns to past FAS/PFAS surveillance. The predominance of FAS and PFAS versus ND-AE so far may reflect limited awareness of Australian diagnostic guidelines rather true incidence difference. Ongoing case surveillance over the next two years will elucidate national FASD incidence and diagnostic patterns.


Keywords: birth defects, Developmental Disability, epidemiology, maternal and child health
Background and aims: Maternal depression is associated with chaotic home environments, while both are independently associated with lower executive function in children. This study examines the relationship between household chaos and self regulation in children of depressed mothers and whether this relationship differs in children exposed to a selective serotonin reuptake inhibitor (SSRI) in utero.

Methods: Parent report of maternal mood (3rd trimester and at 6 years), child behavioral self regulation (Behaviour Rating Inventory of Executive Function [BRIEF]) and household chaos (Confusion, Hubbub, and Order Scale [CHAOS]) at age 6 years was obtained for N=112 (44 prenatally SSRI exposed, 68 non-exposed; mean age 6.3 years) followed from the 3rd trimester.

Results: Generalized estimate equation modeling showed a significant 2-way interaction between prenatal SSRI exposure and CHAOS scores. Increased household chaos was associated with poorer self regulation in non-exposed children. In exposed children, household chaos was not associated with behavioral self regulation, regardless of maternal mood.

Conclusions: As expected, household chaos predicted self regulation at 6 years, but only in non SSRI exposed 6 year olds. Prenatal SSRI exposure appears to buffer the relationship between household chaos and self regulation, suggesting a protective effect.

Keywords: CHAOS, child development, maternal depression, prenatal exposure, selective serotonin reuptake inhibitor
Development, Neuro-developmental Disability

IMPACT OF EARLY PLANNED BIRTH ON CHILD DEVELOPMENT: A POPULATION-BASED STUDY

Jason Bentley¹, Christine Roberts¹, Jenny Bowen², Andrew Martin³, Jonathan Morris¹, Natasha Nassar⁴
¹Clinical and Population Perinatal Health Research, The University of Sydney, ²Department of Neonatology, Royal North Shore Hospital, ³School of Education, University of New South Wales, ⁴Menzies Centre for Health Policy, School of Public Health, The University of Sydney, Sydney, Australia

Background and aims: Significant changes in clinical practice have seen planned birth (labour induction, prelabour caesarean section) <40 weeks gestation increase; and impact on child development is unknown. We investigated the association of gestational age and mode of birth with child development.

Methods: Population-based record-linkage cohort study of 153,730 live born infants of at least 32 weeks gestation with an Australian early development assessment in their first year of school. Poisson models were used to obtain individual and combined adjusted relative risks (aRR) for gestational age and mode of birth with being developmentally high risk (DHR).

Results: Overall, 9.6% of children were DHR. The aRR (95% confidence interval) for DHR decreased with increasing gestational age (referent: 40 weeks); 32-33 weeks 1.25 (1.08-1.44), 34-36 weeks 1.26 (1.18-1.34), 37 weeks 1.17 (1.10-1.25), 38 weeks 1.06 (1.01-1.10), 39 weeks 0.98 (0.94-1.02); and for planned birth (referent: spontaneous labour) was 1.07 (1.04-1.11). The combined aRR for planned birth at 37-38 weeks was 1.17 (1.12-1.22).

Conclusions: Planned birth before 39 weeks gestation increases the risk of poor child development by school age. Weighing the risks and benefits for early planned birth is required to ensure optimal development.

Keywords: child development, early term, gestational age, labour induction, planned birth
INCIDENCE OF DEVELOPMENTAL DYSPLASIA OF THE HIP IN THE PEDIATRIC REHABILITATION CENTER IN MEXICO USING X-RAY AS A SCREENING TOOL

José G. Santiago V.1, Jorge Arroyo O.2, Fernanda Monge U.3
1Pediatric Orthopedics, Centro de Rehabilitación Infantil SEDENA, 2Universidad Panamericana, 3Universidad Anáhuac Norte, Mexico City, Mexico

Background and aims: Developmental dysplasia of the hip (DDH) englobes a wide spectrum of pathology, in which the femoral head has an abnormal relationship to the acetabulum. Left uncorrected DDH is associated with long-term morbidity, therefore early detection correlates with a better outcome. The aim of this study was to examine the incidence of DDH since there are no statistics in Mexico.

Methods: A prospective study of all children admitted to the pediatric rehabilitation center (PRC) in Mexico City from August 2013-2015. Inclusion criteria: all patients aged 1 to 24 months. We used an AP x-ray of the hip as a screening tool. DDH was defined by an acetabular index >30° in newborns and >27° in 3 month olds with a decrease of 0.5-1° per month.

Results: 196 patients were eligible for the study, 117 were female and 79 male. DDH was present in 47 patients (24%) with a higher incidence in female patients (34% vs 9%). Bilateral dysplasia was found in 30% of the patients with DDH. Patients were stratified by age groups showing a higher incidence in the 7-12 month group (29.6%).

Conclusions: The incidence of DDH in our study was 24%, with a higher incidence in female patients. Owing to the frequency of DDH in our hospital, we recommend routine screening with x-ray to all admitted patients.

Image:
## INCIDENCE OF DDH BY AGE GROUPS (MONTHS)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total Numbers</th>
<th>Percentage</th>
<th>Positive for DDH</th>
<th>Negative for DDH</th>
<th>Bilateral</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-6</td>
<td>196</td>
<td>100</td>
<td>24</td>
<td>76</td>
<td>7.14</td>
</tr>
<tr>
<td>Male</td>
<td>79</td>
<td>40</td>
<td>9</td>
<td>91</td>
<td>1.2</td>
</tr>
<tr>
<td>Female</td>
<td>117</td>
<td>60</td>
<td>34</td>
<td>66</td>
<td>11.1</td>
</tr>
<tr>
<td>1-12</td>
<td>120</td>
<td>100</td>
<td>21.6</td>
<td>78.3</td>
<td>5</td>
</tr>
<tr>
<td>Male</td>
<td>50</td>
<td>41.6</td>
<td>6</td>
<td>94</td>
<td>2</td>
</tr>
<tr>
<td>Female</td>
<td>70</td>
<td>58.3</td>
<td>32.8</td>
<td>67.2</td>
<td>7.14</td>
</tr>
<tr>
<td>13-18</td>
<td>55</td>
<td>100</td>
<td>29</td>
<td>71</td>
<td>7.3</td>
</tr>
<tr>
<td>Male</td>
<td>21</td>
<td>38.2</td>
<td>9.5</td>
<td>90.4</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>34</td>
<td>61.8</td>
<td>41.2</td>
<td>58.8</td>
<td>11.7</td>
</tr>
<tr>
<td>&gt;18</td>
<td>17</td>
<td>100</td>
<td>23.5</td>
<td>76.4</td>
<td>5.9</td>
</tr>
<tr>
<td>Male</td>
<td>8</td>
<td>47</td>
<td>25</td>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>9</td>
<td>53</td>
<td>22.2</td>
<td>77.7</td>
<td>11.1</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>100</td>
<td>25</td>
<td>75</td>
<td>25</td>
</tr>
<tr>
<td>Male</td>
<td>3</td>
<td>75</td>
<td>0</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>25</td>
<td>100</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

**Keywords:** DDH, Screening, X-ray
Development, Neuro-developmental Disability

KNOWLEDGE AND CONCERNS OF PARENTS ABOUT CHILD DEVELOPMENT IN TURKEY; PRELIMINARY RESULTS

Tuba Çelen Yoldaş¹, Elif Özmert¹, Yıldırım Beyazit², Banu Çakır³
¹pediatrics, hacettepe univercity of medicine, ²family physician, primary health center, ³public health, hacettepe univercity of medicine, ankara, Turkey

**Background and aims:** Developmental delays and disabilities play a significant role in childhood morbidity and community health problems in all nations. Health system is the only way that has the potential for attainment of all young children in both low and high income countries. The aim of this study is to determine the unmet developmental needs of children in Turkey.

**Methods:** The study was conducted by Hacettepe University Faculty of Medicine Departments of Developmental Behavioral Pediatrics and Public Health. Following ethical approval 450 parents(150 from University Hospital-UH, 150 secondary level hospital and 150 from primary health care centere-PHCC) who have a child 1-6 years of age are given a questionnaire which also included the Pediatric Evaluation Developmental Status. Statistical analysis was performed using SPSS software.

**Results:** In this report the preliminary results of 225 cases(150 from UH, 75 from PHCC) are presented. Among UH parents 41,6% and 28% among PHCC parents thought they didn’t have enough knowledge about development. The percentage of parents with a concern of at least one developmental domain was 20,2% and 17,5% in UH and PHCC parents respectively. The most common concern in UH was language delay and school learning for PHCC parents. Parents who had developmental concerns didn’t have enough knowledge about their children’s development and they were not spending enough time playing with their children in their daily lives(p<0.05).

**Conclusions:** Knowledge of the parents are low and concerns are high. Both medical education and health care system should be revised to meet these new morbidity needs.

**Keywords:** Developmental Disability, Developmental outcomes
LEARNING PROBLEMS IN CHILDREN OF REFUGEE BACKGROUND

Hamish Graham¹,², Ripudaman Minhas³, Georgia Paxton¹,⁴
¹General Medicine, Royal Children’s Hospital, ²Centre for International Child Health, University of Melbourne, Melbourne, Australia, ³Pediatrics, St Michael’s Hospital, Toronto, Canada, ⁴Murdoch Childrens Research Institute, Melbourne, Australia

Background and aims: Learning problems affect around 10% of children and while refugee children may have additional risk there is limited information in this population. This study sought to review the evidence on educational outcomes and learning problems in refugee children, and describe major risk and resource factors.

Methods: We searched MEDLINE, EMBASE, PubMed, CINAHL, PsycInfo, and ERIC for articles addressing the prevalence/determinants of learning problems in refugee children. Data were extracted and analysed using Arksey and O’Malley’s descriptive analytical method for scoping studies.

Results: Thirty-four studies were included. Refugee youth had similar secondary school outcomes compared to their native-born peers; there were no data on preschool or primary school outcomes. There were limited prevalence data on learning problems; single studies informed most estimates and no studies examining specific language disorders or autism spectrum disorders. Major risk factors: parental misunderstandings about educational expectations; teacher stereotyping and low expectations; bullying and racial abuse; trauma. Major resource factors: high ambition; ‘gift-sacrifice’ motivational narratives; parental involvement in education; supportive home environment; appropriate grade placement; teacher understanding of linguistic and cultural heritage; culturally appropriate school transition; supportive peer relationships; successful ‘acculturation’.

Conclusions: This review summarises published prevalence estimates for learning problems in refugee children, highlights key ‘risk’ and ‘resource’ factors and identifies research gaps.

Keywords: learning, Refugee Health
LEISURE ACTIVITIES AND DEVELOPMENT OUTCOMES IN YOUNG CHILDREN BORN LATE PRETERM

Hsin-Yu Wang¹, Hsuan-Wen Wang¹, Hui-Ning Shih¹, Wen-Hui Tsai², Yea-Shwu Hwang¹

¹Department of Occupational Therapy, College of Medicine, National Cheng Kung University, ²Department of Pediatrics, Chi Mei Medical Center, Tainan, Taiwan, China

Background and aims: A combined influence of preterm birth and social environment has shown on the development of late-term children. Studies have indicated a significant influence of leisure activities on children's development, however, little is known on late-preterm children. Therefore, we aimed to investigate the association of leisure activities and the development outcomes of young late-preterm children.

Methods: A total of 47 late-preterm children (340/7 - 366/7 weeks gestation) at two years of corrected age were included. Their cognitive and motor developmental outcomes were assessed by a trained occupational therapist using the Bayley Scales of Infant and Toddler Development--Third Edition (Bayley-III). Mothers were asked to complete a demographic questionnaire and Mandarin-Chinese Communicative Development Inventory (MCDI-T).

Results: The results of regression analyses revealed that the length of screening time was a strong predictor (p=0.008) for language development, explaining 17.6% of the variation in the scores of language comprehension and production of the MCDI-T. After adjusted for family socioeconomic status (SES), the length of time spent on storybook reading (p=0.013) was the best predictor of motor scores, explaining 21.3% of the variance of this outcome.

Conclusions: Our findings demonstrate the importance of leisure activities on the developmental outcomes of late-preterm children. A decrease in the screening time and an increasing time in storybook reading may benefit to the development of this population.

Keywords: late preterm, leisure activity, development
MEASURES OF THEORY OF MIND: A SYSTEMATIC REVIEW

I-Ning Fu¹, Kuan-Lin Chen¹

¹Department of Occupational Therapy, College of Medicine, National Cheng Kung University, Tainan, Taiwan, China

Background and aims: Theory of Mind (ToM) is the ability to infer the thoughts and emotions of self and others. Traditionally, ToM was deemed a unitary construct, however, in recent decades, neuroimaging studies have shown ToM to be multidimensional, involving cognitive and affective as well as interpersonal and intrapersonal aspects. Understanding the construct of ToM measures is critical to subsequent evaluation and intervention. Therefore, this systematic review aimed to identify and evaluate the measures of ToM for children through the identified multidimensional framework.

Methods: An electronic search was conducted using PsycINFO to include studies of ToM measures in children from birth to 12 yrs. Extracted data was synthesized using a narrative format.

Results: Of the 631 articles retrieved, 336 articles were selected for review, including 322 studies on applying ToM measures and 14 studies on constructing ToM measures. Among the 336 studies, most only employed cognitive interpersonal ToM tasks (e.g., first- and second-order false beliefs). Among the 14 studies on constructing ToM measures, 11 measures evaluated both cognitive and affective interpersonal ToM, but not comprehensively.

Conclusions: Cognitive interpersonal ToM was most often evaluated in the ToM measures, and only a few studies evaluated intrapersonal ToM. Further research should develop measure that simultaneously evaluate children’s cognitive and affective as well as interpersonal and intrapersonal ToM for clinical application.

Keywords: measurement, multidimensional, Theory of Mind
Background and aims: There are only a few studies on autism from Africa. The characteristics of autism and prevalence are not known in Ghana. This study aimed to determine the basic epidemiology in Ghana.

Methods: A retrospective study was done covering a ten year period (2005-2015) on 480 children with a confirmed diagnosis of autistic spectrum disorder (ASD) using DSMIV classification. Medical history and complications of each was abstracted from the medical records.

Results: 480 children were identified. 438 males and 41 females. Age range was 2.5 to 11 years. Occupation of parents was noted to be significant particularly for the accountancy profession where 65% of such children came from that occupational background. Another 30% belonged to the IT, banking or mathematical sciences. 95% of the children showed the regressive type of autism. 90% of the children had normal birth records. 19% had epilepsy. Coexisting medical conditions identified included Down syndrome (2 cases) Moebius syndrome (2) congenital rubella (5) Rett syndrome (3) hypomelanosis of Ito (1), phenylketonuria (1) albinism (1) and Cornelia de Lange syndrome (1).

Conclusions: 90% of children with ASD at a tertiary hospital in Accra, Ghana came from parental occupations associated with the precise sciences like accountancy, IT, banking and Engineering. The regressive type of autism predominates.

Keywords: autism spectrum disorder, Ghana, occupation
THE PEDIATRIC DEVELOPMENTAL PASSPORT: A MULTI-SITE RANDOMIZED CONTROLLED TRIAL
Elizabeth Young*1, 2, Thivia Jegathesan3, Ramanan Aiyadurai3, Ripudaman Minhas3, 4, Joelene Huber3, 5
1Pediatrics, St.Michael's Hospital, Toronto, 2Department of Pediatrics, Division of Developmental Pediatrics, University of Toronto, Canada, 3Pediatrics, St.Michael's Hospital, 4Department of Pediatrics, University of Toronto, 5Department of Pediatrics, Division of Developmental Pediatrics, St.Michael's Hospital, Toronto, Canada

Background and aims: The Pediatric Developmental Passport (passport) is an innovative tracking tool for families of children with autism spectrum disorder (ASD). A qualitative study with parents and health professionals in development lead to the design and iterative review of the passport. The objective of this study was to determine the generalizability and effectiveness of the passport compared to placebo in a multi-site pragmatic randomized control trial (RCT).

Methods: A pragmatic multi-site RCT was conducted with families of children between 0-6 years of age diagnosed with ASD. Families from two different models of developmental care were enrolled into the study. All families were randomized to receive the passport or placebo (blank card). Agencies providing Autism specific behaviour therapy (ABA) within each site were contacted directly to obtain accurate contact and access status of recommended developmental services. To determine passport effectiveness a fisher’s exact test was conducted using a significant p value of <0.05.

Results: Forty children with ASD were included and followed in this study. The passport (90.5% contacted ABA) proved to be significantly more effective in aiding families to contact developmental services than the placebo (61.9% contacted ABA P<0.05) (blank card). More families with the passport tended to contact ABA in less than 2 months (48%) than the placebo group (35%).

Conclusions: The pediatric developmental passport enables families of children newly diagnosed with Autism to contact necessary behavioural services more often than those who did not receive the passport after diagnosis

Keywords: access to care, autism spectrum disorder, Developmental Disability, tracking tool
THE RELATIONSHIP OF THEORY OF MIND PERFORMANCE WITH SOCIALIZATION IN CHILDREN WITH AUTISM SPECTRUM DISORDER

Dai-Rong Jiang¹, Szu-Shen Lai¹, Kuan-Lin Chen¹
¹Department of Occupational Therapy, National Cheng Kung University, Tainan, Taiwan, China

Background and aims: Impaired socialization, one of the core symptoms of children with autism spectrum disorder (ASD), may be related to a deficit in theory of mind (ToM). Although previous studies have explored whether socialization is correlated with ToM in children with ASD, all have focused on the capacity instead of daily performance. Therefore, this study aimed to examine the relationship of ToM performance to socialization in children with ASD.

Methods: Pearson’s correlation coefficients were applied to examine the relationships between the scores of the Vineland Adaptive Behavior Scale (VABS) and Theory of Mind Inventory (ToMI), used for measuring socialization and ToM performance, respectively.

Results: A total of 75 caregivers of children with ASD aged 3 to 12 years were recruited. The socialization scores of the VABS had significant moderate correlations with the 3 stages of the ToMI (r=0.315-0.579). The 3 VABS subscale scores had significant moderate correlations with ToMI total score: Interpersonal Relationships (r=0.594), Play and Leisure time (r=0.511), and Coping Skills (r=0.586). The VABS subscales and TOMI stages all had significant mild to moderate correlations (r=0.326-0.604).

Conclusions: These results show that socialization is associated with ToM performance in children with ASD. This finding may inform clinicians in planning interventions to improve the ToM of children with ASD to improve their social skills.

Keywords: autism spectrum disorder, socialization, theory of mind
TO FIND AN INTENTIONAL MINUTE REACTION IN A 10-YEARS OLD CHILD WITH A SEVERE BRAIN INJURY CAUSED BY CEREBRAL HYPOXIA AFTER CARDIOPULMONARY ARREST

Naoko Kameda¹, Machiko Suzuki²
¹Nursing, Setsunan University, Hirakata, ²Nursing, Kyoto University, kyoto, Japan

Background and aims: “Seventeen (39%) of 41 patients presumed to be in VS [vegetative state]/UWS [unresponsive wakefulness syndrome] were found to be at least minimally conscious” (Van Erp, 2015). We will describe our focus on finding intentional reactions of a child with a severe brain injury (Case AK).

Methods: Interpretative phenomenological analysis (IPA) was used to develop “thick descriptions”(Geertz, 1973) of the life experiences by the side of Case AK through (1) a diary kept by the primary investigator (PI) with observations of Case AK, the PI, and caregivers (e.g. family, nurses and teachers; n=71) communication sessions (21 sessions, 3hr each, across 4 months), and, (2) group interviews (5 sessions, 15-30min each) with caregivers. This study was approved by the Medical Ethics Committee of Kyoto University (No. 1055-1).

Results: Case AK (Table 1) was living in dynamic environment, therefore it was difficult to describe that. He seemed to sleep most of the time. It is difficult for Case AK to intentionally react and to follow the caregiver’s motions. His gaze would remain where it was. However, there were occurrences when his intentional reactions were documented.

Conclusions: We revealed possibilities to capture the intentional reactions of Case AK by using IPA. Poor reproducibility and his gaze being unable to remain on the caregiver’s motion, are factors for why we missed his intentional reactions.
### Table 1
**Case Features**

<table>
<thead>
<tr>
<th>Case Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>age</strong></td>
<td>Ten years old</td>
</tr>
<tr>
<td><strong>sex</strong></td>
<td>Male</td>
</tr>
<tr>
<td>State when born</td>
<td>Abnormality is not found.</td>
</tr>
<tr>
<td>Time when brain injury was received</td>
<td>0 years old four months</td>
</tr>
<tr>
<td>Cause of brain damage</td>
<td>Cardiopulmonary arrest of tens of minutes that happened after heart surgery</td>
</tr>
<tr>
<td>Assessments</td>
<td>It is difficult to report as the eyeballs are fixed in the upper right. Although it has not been scientifically proven, the abilities to hear and see are still postulated based on phenomena.</td>
</tr>
</tbody>
</table>

**Keywords:** severe brain injury, cerebral hypoxia, children, communication, intentional minute reaction
TOWARDS A SYSTEMS THEORY UNDERSTANDING OF AUTISM SPECTRUM DISORDERS

Amalia Megremi* 1
1Product and Systems Design Engineering, University of Aegean, Syros, Greece

Background and aims: Complex systems theory could contribute to understand ASDs.

Methods: Complex systems theory & ASDs clinical characteristics are reviewed.

Results: At systemic approach, human being is an open system, where individual components interact between them & with the environment in a nonlinear way.

Heterogeneity is major feature of autism, so autism is a complex disease.

Autistics have *impairment in connectivity* (impaired communication in macroscopic scale & abnormalities in brain connectivity, altered neurotransmitters in microscopic scale). Therefore they don't exchange information with the environment & they are no more open systems.

Autistics show early *brain overgrowth*, which is followed by arrest of brain growth later. Is autism an anabolic state where early overdevelopment results in exhaustion of feedback loop & subsequently reduced system performance later?

Stereotype & resistance to change are main characteristics in ASDs. In ASDs the organism as a whole system functions with linearity & high level of predictability, has lost its variety & complexity.

Autistic children have fewer *fevers* & some of them improve with fever. Given that fever is an energy-consuming mechanism, autistics who don't develop fever are probably trying to save energy in order to adapt in an environment hostile to them.

Conclusions: ASDs consideration via complex systems approach may help for predictive factors to be recognized & preventive programs may take place (avoidance improper fever suppression, enriched behavioral programs etc).

Keywords: AUTISM, SYSTEMS THEORY
Background and aims: case is 26 weeks pregnant G1P1 extreme low birth weight 905 gm women premature, cases of mother past history arterial malformation pulmonary embolism and brain abscess surgery, the estimated data of childbirth: 104 years on December 21, in 104 years on September 14 vaginal bleeding and lower abdominal pain admitted to emergency, continued progress in labor after NSD breech delivery, Apar score 6 → 7 .

Methods: Birth height 34cm, weight 904 grams, head circumference: 24cm, begin feeding and total parenteral nutrition used , on September 30 presented abdomen colic suspected intestinal perforation, 10/1 surgery (loop ileostomy drainage abdomen absccae), 10/15 Decoration pleural Repair bronchial perforation, nutritional support and the use of total parenteral nutrition in preterm milk, 12/11 Closure ileostomy resection and anastomosis. feeding formula: 20kcal preterm milk fed to 24 kcal , change after ostomy closed 30kcal preterm milk feeding.


Conclusions: very low birth weight premature , although after multiple complications , for the purposes of low birth weight children, the medical team takes a greater effort is a great challenge, for the parents of premature as well.

Keywords: VLBW
WHITE MATTER DIFFERENCES IN CHILDREN WITH DEVELOPMENTAL COORDINATION DISORDER
Meisan Brown-Lum¹, Kevin Fitzpatrick², Tim Oberlander², Alexander Rauscher², Bruce Bjornson², Jill Zwicker¹.²
¹Occupational Science & Occupational Therapy, ²Pediatrics, University of British Columbia, Vancouver, Canada

Background and aims: Developmental coordination disorder (DCD) significantly interferes with a child’s ability to learn motor skills and perform everyday activities. Compared to typically-developing (TD) children, children with DCD show altered development of motor and sensory pathways (Zwicker et al., 2012). Our aim is to further characterize differences in white matter pathways in children with/without DCD. We hypothesize that children with DCD will show differences in sensorimotor pathways (corticospinal tract, cerebello-frontal pathways, corpus callosum).

Methods: Whole-brain differences in white matter pathways in 8-12 year old children with/without DCD will be examined. Diffusion parameters (fractional anisotropy; mean, axial, & radial diffusivity) will be calculated using tract-based spatial statistics from 32-direction diffusion tensor imaging, with age and attention scores as covariates. Pearson correlation coefficients between diffusion parameters and standardized motor scores will be calculated.

Results: To date, 19 TD children and 13 children with DCD have been enrolled. Recruitment is ongoing.

Conclusions: Findings will provide novel information about the neurological foundations of DCD and form the basis to examine brain changes associated with rehabilitation intervention to improve motor outcomes of children with DCD.

Funding: CIHR, MSFHR, CCHCSP, CFRI

Keywords: Diffusion-tensor imaging, Neurodevelopmental disorders
Background and aims: In general, children with hydrocephalus have a higher incidence of disabilities than the general population. HOQ is a disease-specific questionnaire that assesses a child health status. However, the test is completed by proxy. The Electronic Integrated Text, Visual and Audio Questionnaire (EITVAQ) will be designed to be disease-specific and measure child health status from the child’s perspective. EITVAQ’s outcome is anticipated to be valid and positive, introducing a new, child friendly health measurement tool.

Methods: This is a randomized, multicentre, single-blinded, prospective study that measures the feasibility, reliability and validity of EITVAQ to measure the health status in paediatric hydrocephalus patients.

Results: EITVAQ is designed to be disease-specific accommodating the needs of children with hydrocephalus. It could be a suitable tool to measure health status. If the results are favourable, it can be used in the future to evaluate the long-term impact of surgical intervention on all hydrocephalus patients. Potential refining and development of EITVAQ from PowerPoint format into an encrypted smart-phone application will be the ultimate goal. This could potentially create widespread usage among registered practitioner and paediatrician to assess the health status of the child.

Conclusions: The introduction of EITVAQ is hoped to be interactive and is used widespread across hydrocephalus patients in order to identify issues of health status, enabling them to access appropriate early intervention and improve their quality of life.

Keywords: None
**Education and Training**

10 STEPS TO QI: A SIMULATION-BASED QUALITY IMPROVEMENT (QI) COURSE
FOR ALL HEALTH CARE PROVIDERS AND SETTINGS

Khalid Aziz* 1 on behalf of Ethiopia-Canada Maternal-Newborn-Child Health Project and CIHR Maternal-Infant Care (EPIQ) Team, Abrahm Getachew2, Nebiyou Wondwosen2, Samuel Muluye2, Amy Fowler3
1Department of Pediatrics, University of Alberta, Edmonton, Canada, 2Ethiopia-Canada MNCH Project, St. Paul's Hospital Millenium Medical College, Addis Ababa, Ethiopia, 3Ethiopia-Canada MNCH Project, University of Alberta, Edmonton, Canada

**Background and aims:** For greatest effect, educational programs should meet 3 conditions: evidence-based content, educational efficiency, and effective implementation. Adding simulation-based learning (SBL) brings context and engagement to health care workers (HCW). We describe a SBL program for use by all HCWs in all environments and health systems.

**Methods:** Since 2002 the CIHR MICare Team has provided QI training to Canadian NICUs with significant SBL components. This course was deconstructed into 3 core theoretical models and reformatted as a SBL workshop for all HCWs for use in all settings. Validated QI tools were added in logical sequence.

**Results:** Three frameworks were created:
1. QI is based on 3 essential components, each with 2 facets: information gathering (local data + best-available evidence), collaboration (teamwork + validated tools), and implementation (engagement + action).
2. QI has 10 steps that are supported by validated tools (e.g. plan-do-study-act cycles).
3. QI team documentation reinforces aims, interventions and measures.

A 10-step QI workshop was designed using SBL. Each step included a validated QI tool.
In 2015, the Ethiopia-Canada MNCH Project initiated training the 10 steps for QI teams in urban and rural hospitals and health centres in Ethiopia with the goals of improving maternal and newborn outcomes. Results are pending.

**Conclusions:** Complex QI concepts can be deconstructed into practical frameworks that inform SBL in frontline HCWs regardless of setting. A QI workshop has been developed that is applicable to all HCWs in all health care environments. This workshop requires evaluation.
Keywords: Education, Global health, Health Care Workers, Quality Improvement, Simulation-based learning
A MIXED-METHODS EVALUATION OF A SOCIAL PEDIATRICS BLOCK ROTATION FOR PEDIATRIC RESIDENTS
Andrea Hunter*, Stephanie Kay, Kristy Parker, Alannah Delahunty-Pike, Gita Wahi

1Pediatrics, McMaster University, Hamilton, 2Pediatrics, The Scarborough Hospital - Birchmount Campus, Scarborough, 3Pediatrics, Children's Hospital of Eastern Ontario, Ottawa, 4Medicine, McMaster University, Hamilton, Canada

Background and aims: Poverty and social injustice are linked to health outcomes. Social Pediatrics (SP) focuses on the child within the context of society, environment, school, and family. We endeavored to determine knowledge uptake and characterize barriers/enablers to involvement in advocacy activities from a rotation focusing on social determinants of health (SDOH).

Methods: Knowledge and attitudes of pediatric postgraduates pre/post a 4 week SP rotation were assessed with written evaluation. A qualitative description study of community partners and resident through semi-structured interviews, thematic analysis was conducted through an inductive-iterative approach.

Results: From 21 residents’ pre-and post- written tests and 12 residents’ optional attitudinal surveys. knowledge increased from 68% prior to rotation, to 80% (p < 0.001) post-rotation. All residents indicated increased likelihood of participating in future advocacy. Themes from 6 resident and 5 community partner interviews included: enhanced knowledge of SDOH, residency curricula development with further mental health placements, practice models involving vulnerable populations, multi-disciplinary learning opportunities, and advocacy projects.

Conclusions: From a SP rotation, learners demonstrate increased knowledge of SDOH and interest in advocacy. Community partners valued engagement with residents and report few barriers to continued involvement. Future directions include understanding advocacy work or career decisions and multi-centre collaboration.

Keywords: None
Background and aims:
Focused objectives provide effective learning. Pediatric residents follow objectives by Royal College of Physicians & Surgeons of Canada (RCPSC). For rotation in pediatric gastroenterology (GI), it is unclear which of the key clinical conditions listed are important in general practice. Aim was to identify GI topics important in general pediatric practice to develop a focused curriculum for residents.

Methods: All pediatricians in 4 Canadian Atlantic provinces were surveyed. List had 14 clinical conditions from current RCPSC objectives with 6 more generated after input from regional paediatric gastroenterologist. Ranking was on 4 point Likert scale (NOT to VERY IMPORTANT).

Results: 132 of 234 (56%) responded, 48% general pediatricians. Most were in practice >10 yr, 75.6% felt that a rotation in GI should be mandatory in pediatric residency. Celiac disease, GE reflux and obesity were identified as Very Important by 94.4%, 96.1% and 96.0% respectively (currently not in RCPSC list). Long-term follow-up of liver transplant survivors (RCPSC objective) was considered Not Important by 61.3%. There were no significant differences between general pediatricians and specialists in cross analysis of all variables studied.

Conclusions: Needs assessment for pediatric residency curriculum development is important as it can identify gaps in RCPSC objectives. Systematic and ongoing input should be sought from general pediatricians to keep the curriculum updated.

Keywords: Gastroenterology, Postgraduate, Residents
CAPACITY-BUILDING: HOW ADVANCED PRACTICE NURSING STUDENTS CONTRIBUTE TO THE HEALTH OF GLOBAL COMMUNITIES

Patricia Ryan-Krause*

*Pediatric Nurse Practitioner Specialty, Yale University School of Nursing, West Haven, United States

Background and aims: “Service learning” for health care students focuses on benefits to students and seldom addresses impact on communities. This presentation demonstrates effective and sustainable methods of addressing a rural Nicaraguan community’s health needs beyond providing short-term clinical care.

Methods: Prior to student trip, focus groups were conducted with community groups by US faculty. Every group identified educational needs. Advanced practice nursing students developed interactive activities on these topics. Nursing students from a local university presented activities with US students. This assured both culturally-appropriate content and delivery and developed cross-cultural rapport.

Results: Attendance was high at each educational and training session. Follow-up surveys were overwhelmingly positive. Every respondent identified new information learned and included future learning requests. The health post team supported this approach and offered suggestions.

Conclusions: Capacity-building through education is more impactful and long-lasting than clinical care. Enhancement of the skills of local providers improves health throughout the community. This model reinforces the value and role of local health providers. The integration of local nursing students increases cultural competence. This model has potential to respond to the expressed needs of communities and enhance the knowledge and expertise of both community groups and nursing students.

Keywords: capacity-building, global health, service learning
COMMUNICATION CRISSES IN THE IN-PATIENT SETTING: A STUDY OF HEALTH CARE PROVIDER PERSPECTIVES

Amonpreet Sandhu\textsuperscript{1}, Chantelle Barnard\textsuperscript{1}, Suzette Cooke\textsuperscript{1}

\textsuperscript{1}University of Calgary, Calgary, Canada

**Background and aims:** Communication crises (CC) in this study are defined as interactions between families and the health care team that result in delays or obstructions in patient care. The purpose of our study was to identify and describe CC that paediatric health care providers encounter.

**Methods:** Data was collected via six focus groups (FG). Key informants were individuals who experience CC firsthand or are called upon to support conflict resolution. FG proceeded through open-ended questions to explore experiences and ideas about CC. Data were analyzed using grounded theory and constant comparison methods.

**Results:** Participants included paediatricians (10), nurses (6), social workers (4) and hospital administrators (5). Three major themes and associated subthemes emerged; 1) Health care team factors: communication style and systems' issues related to the inpatient setting 2) Family factors: language or cultural barriers, socioeconomic stressors, mental health conditions and refusal of medical care and 3) Patient factors: acuity of illness, unstable medical situation and unclear diagnosis. The presence of a Trusting Relationship (TR) between the family and team is the core variable identified as critical to the communication process.

**Conclusions:** This study provides an initial analysis of CC in an inpatient setting. A TR is critical in successfully navigating inpatient CC, yet this setting poses unique challenges that can hinder this process.

**Keywords:** communication, grounded theory, Inpatients
COMPARATIVE EFFECTIVENESS OF TWO ONLINE SELF-GUIDED INTERVENTIONS FOR YOUTH WITH MIGRAINES

Patrick McGrath\(^1\), \(^2\), Anna Huguet\(^1\), \(^2\), Cathy Maclean\(^3\), Lori Wozney\(^1\), Allan Purdy\(^4\), Sharlene Rozario\(^1\), Vanessa Varalli\(^1\)

\(^1\)Centre for Research in Family Health, IWK Health Centre, \(^2\)Department of Community Health and Epidemiology, Dalhousie University, Halifax, Nova Scotia, \(^3\)Faculty of Medicine, Memorial University Newfoundland, St John's, Newfoundland and Labrador, \(^4\)Department of Neurology, QE II Health Sciences Centre, Halifax, Nova Scotia, Canada

**Background and aims:** CBT is an effective approach for youth with migraines, and online CBT interventions increase access to care. Trigger identification is an essential component of CBT. Little research has compared the effect of a comprehensive CBT program (‘full CBT’) to a brief intervention that provides individualized recommendations (‘PRISM’). Our goal is to compare two online self-guided interventions.

**Methods:** Design: A three-armed pilot prospective randomized trial (full CBT, PRISM, and wait list). Hypotheses: (1) full CBT and PRISM are superior to wait list. (2) There is no difference in effect between full CBT and PRISM. Participants: Youth aged 14-18 years with migraines, fluent in English, have a Smartphone with daily internet access, and use it for activities other than texting and calling. Youth that a healthcare professional hasn’t ruled out other medical conditions as headache cause will be excluded. Procedures: Random assignment to either: full CBT; PRISM; or wait list. Outcome measures administered at baseline and four-month post-randomization. Measures: Primary outcome is clinical improvement in number of headache days in the last 28 days. Secondary outcomes are clinical improvement in peak headache severity in the last 28 days, headache-related functional impairment, and depressive symptomatology.

**Results:** The protocol of the pilot trial will be presented.

**Conclusions:** If these treatments are equally effective, their availability give youth with migraine the opportunity to select the treatment option that best suit them.

**Keywords:** migraine, online intervention, pilot RCT, self-guided, youth
EFFICACY OF GUEST FACULTY VISITING PEDIATRIC ACADEMIC CENTERS IN EAST AFRICA: EXPLORING THE PERSPECTIVE OF THE HOST FACULTY AND TRAINEES

Christiana Russ\(^1\), Lakshmi Ganapathi\(^1\), Diana Marangu\(^2\), Melanie Silverman\(^1\), Edward Kija\(^3\), Sabrina Bakeera Kitaka\(^4\), Ahmed Laving\(^2\)

\(^1\)Boston Children’s Hospital, Boston, United States, \(^2\)University of Nairobi, Nairobi, Kenya, \(^3\)Muhimbili University, Dar es Salaam, Tanzania, United Republic of, \(^4\)Makarere University, Kampala, Uganda

**Background and aims:** This prospective qualitative research study explored the perspective of pediatric faculty and trainees at academic centers in East Africa regarding guest faculty. We asked: (1) What are benefits and challenges of hosting guest faculty, (2) What are major factors that influence the efficacy of the guest faculty visits, and (3) How do host institutions prepare for and promote effectiveness of guest faculty visits.

**Methods:** We recruited 4 of 6 identified pediatric academic centers in East Africa to participate. At each site, we recruited faculty and residents to participate in semi-structured interviews which were audio recorded and transcribed. Data were qualitatively analyzed using principles of open coding and thematic analysis. We achieved saturation of themes.

**Results:** Benefits of having guests varied based on size and needs of host institutions. Emergent themes included the importance of committed time for guest faculty to engage with hosts, and mutual preparation to ensure the visit goals and scheduling met host needs. A few conflicts developed around guest emotional responses and differing ethical approaches to clinical resource limitations which hosts prepared for and mitigated in varied ways. Imbalance in resources led to power differentials; some hosts relied on partnerships to re-establish control over the process of having guests.

**Conclusions:** Guest faculty can greatly benefit pediatric academic centers in low and middle income countries, however effective visits require clear goals, and attention to guest selection and preparation. Partnerships may improve mutuality of faculty exchanges.

**Keywords:** global child health, graduate medical education, qualitative research
ENTERIC FEEDING TUBE PLACEMENT IN NEONATES: METHODS, ERRORS, AND COMPILICATIONS

Vishal Punwani 1, Jeffrey Otjen 1
1Radiology, Seattle Children’s Hospital, Seattle, United States

Background and aims: Enteric feeding tubes are vital to deliver nutrition or medication in hospitalized infants, and are commonly used in NICU. Tubes must be carefully placed as this relatively safe procedure is not devoid of complications. This is a case of a complication of ND feeding tube placement in an infant, and a review of pediatric tube placement methods and error. We report on these practices, and describe rates of complications in newborns as there is a lack of pooled data for feeding tube complications in this group.

Methods: A search of the literature (Embase, Medline, Pubmed; 1974-2015) identified publications describing feeding tube complications in the pediatric group.

Results: 27 publications were found describing method of tube placement (3), methods to confirm (5), and complications (19). The range for improper tube placement in neonates is 39-55%, and 16-44% in the older pediatric population. There is a lack of conformity in defining proper tube placement, thus reported rates of malposition vary widely. There is no data to link complication rates to tube position outside of grossly abnormal positions.

Conclusions: Lifesaving feeding tubes have the potential to be harmful. Clinical measurement to predict required tube length is widely accepted, but this may not be accurate enough to result in proper tube placement. It also may be that improper initial measurement influences the rate of misplacement. If tube location is in doubt, imaging should be done to confirm correct placement. The risk of complications can be reduced by education and training of medical staff in insertion and monitoring of feeding tubes.

Keywords: enteral nutrition, feeding tube, neonatal intensive care unit
EXPANDING COMMUNITY HEALTH NURSE EDUCATION AND SUPPORT IN RURAL GUATEMALA THROUGH TELEMEDICINE

Kelly McConnell, MD\textsuperscript{1, 2}, Maya Bunik, MD\textsuperscript{1, 2}, Maureen Lenssen, PNP, IBCLC\textsuperscript{1, 2}, Lyndsay Krisher, MPH\textsuperscript{1}, Gretchen Domek, MD\textsuperscript{1, 2}

\textsuperscript{1}Center for Global Health, Colorado School of Public Health, \textsuperscript{2}Pediatrics, University of Colorado School of Medicine, Aurora, CO, United States

Background and aims: As partners, our university and a local company developed a medical community in the Trifinio of southwest Guatemala, a rural, high poverty area. Community health nurses (CHNs) conduct regular group visits, with local children, their mothers and pregnant women. Per their request, we developed a telemedicine based curriculum to provide remote regular education. Topics include breastfeeding support and child health: anticipatory guidance, illnesses and development.

Methods: Weekly sessions via Vidyo\textsuperscript{\textregistered}, a telemedicine platform, are \textasciitilde45 minutes of teaching and discussion. Educational materials are developed by the team, based on World Health Organization, Wellstart Breastfeeding, Guatemala Ministry of Health and Yale Primary Care Curriculum guidelines and resources and group input. The CHNs and educators interact as well as view the a screen of pictures and documents to support the topic discussion. Documents will be available for later reference.

Results: In 2015, 13 pilot sessions were completed. Each session is evaluated for technology, content and ability to connect learner to educator. Per discussions with CHNs and team members, the sessions are helpful for providing advice and determining referral needs. Additional sessions are planned in 10 session blocks with pre and post tests.

Conclusions: This method of telemedicine education presents an efficient, effective delivery of education to support and expand the work of the CHNs with the ability to expand to other groups in similar settings. The regularity of contact will likely deepen the educational relationship and increase trust and communication.

Keywords: Education, medical, Rural, Technology, Telehealth
GAPS IN THE KNOWLEDGE, ATTITUDE AND PRACTICE OF PEDIATRIC RESIDENTS IN DEALING WITH PSYCHOLOGICAL DISORDERS IN CHILDREN

Padinharath Krishnakumar¹, Madathil Govindaraj Geeta¹, Arakkal Riyaz¹
¹Pediatrics, Govt. Medical College, Kozhikode, Kozhikode, India

Background and aims: In spite of the increasing incidence of psychological and developmental disorders in children, pediatricians are not adequately trained in dealing with these disorders. The aim of the study was to identify the gaps in the knowledge, attitude and practice of pediatric residents in dealing with psychological disorders in children.

Methods: The subjects included final year exam going pediatric residents. Knowledge in child psychiatry was assessed using a test paper and the residents’ perception of attitude and practice was assessed using a questionnaire.

Results: Six MD students and 10 DCH students participated in the study. In the test paper 11 (68.75%) residents got more than 50% marks and only 9 (39%) got more than 60% marks. Majority of the residents felt that they were not competent enough to deal with psychological disorders in children. There was no statistically significant relationship between the marks obtained in the knowledge test and the perceived ability of residents to deal with psychological disorders in children, except in the ability to diagnose psychological disorders.

Conclusions: There are gaps in the knowledge, attitude and practice of pediatric residents in dealing with psychological disorders and the gap is more prominent in the domains of attitude and practice compared to the knowledge domain. There is a need for improving the competency of pediatric residents in dealing with psychological disorders in children.

Keywords: competency, pediatric residents, psychological disorders
HELPING BABIES BREATHE PLUS- IMPROVEMENT IN KNOWLEDGE AND SKILLS

Flavia Namiro¹, Sarah Kiguli², Nalini Singhal³, Josephat Byamugisha⁴, Jamiir Mugalu¹, JescaNsungwa-Sabiiti⁵, Doug McMillan⁶

¹Pediatrics, Mulago Hospital, ²Pediatrics, Makerere University, Kampala, Uganda, ³Pediatrics, University of Calgary, Calgary, Canada, ⁴Obstetrics & Gynecology, Makerere University, ⁵Child Health, Ministry of Health, Kampala, Uganda, ⁶Pediatrics, Dalhousie University, Halifax, Canada

Background and aims: Newborn deaths and morbidity are significant global problems potentially prevented by effective educational programs. Helping Babies Breathe (HBB)-initial care at birth and Essential Care for Every Baby (ECEB)-subsequent care on the day of birth are evidence-based, low technology, small group, interactive programs. Our aim was to assess the impact of HBB plus ECEB on knowledge and abilities (simulated scenarios) of health care providers.

Methods: During 3 day courses, 72 nurses and midwives in a Ugandan referral hospital (>32,000 annual births) were taught HBB and ECEB by 6 Ugandan Master Trainers with pre- and post-training assessment of knowledge and abilities of participants.

Results: All composite scores improved (Table) - component scores improved in about 40% of knowledge and over 90% of scenario items.

Conclusions: HBB and ECEB are effectively taught together improving knowledge and abilities of newborn health care providers. Prior knowledge may be better with HBB than with ECEB. Lower initial scores facilitated greater improvement in abilities (simulated scenarios) than knowledge. Future programs may use pre-education component scores to identify areas which need special attention.

Image:
<table>
<thead>
<tr>
<th>PROVIDERS</th>
<th>KNOWLEDGE CHECK</th>
<th>SIMULATED SCENARIOS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PRE</td>
<td>POST</td>
</tr>
<tr>
<td>HBB</td>
<td>92.9%</td>
<td>98.0%</td>
</tr>
<tr>
<td>ECEB</td>
<td>73.0%*</td>
<td>96.4%*</td>
</tr>
</tbody>
</table>

*p <0.01

Improvement was significant in about 40% of knowledge and over 90% of scenario items.

Keywords: Essential Care for Every Baby, Helping Babies Breathe, Newborn Care Education
HIGH FIDELITY SIMULATION RESULTS IN IMPROVING CLINICIAN PERFORMANCE WHEN MANAGING MASSIVE HEMORRHAGE CASES

Arielle Levy1, Geraldine Pettersen1

1Pediatrics, Sainte-Justine Hospital University Centre, Montreal, Canada

Background and aims: Massive haemorrhages (MH) are rare but serious complications of paediatric trauma and obstetrical cases. Aim: to evaluate the application of a MH protocol and the ability to work in teams using simulation and targeted training.

Methods: Prospective pre/post study at the sim lab of a tertiary care hospital. Pediatric emergency/intensive care and obstetrical/anesthesia teams were submitted to simulated pediatric trauma and post-partum MH scenarios respectively (initially and 2 weeks later). Targeted training: a debriefing session and a review of the MHP and teamwork skills. Confidence questionnaires completed. Four blinded independent raters reviewed and assessed videos using a checklist derived from the MHP and the Mayo High Performance Teamwork Scale. Means and SD’s of scores were calculated for each scenario and compared using ANOVA. Descriptive statistics for confidence questionnaires were compared using Mann Whitney.

Results: Participants were 62 professionals involved in 4 obstetrics/anaesthesia and 4 paediatric emergency/intensive care. After training, improvements were noted for scores for the application of the MHP 24% (95% CI 10-39), the ability to work in teams 17% (95% CI 6-28) and for confidence levels 13% (95% CI 11-16).

Conclusions: Training involving simulated scenarios and MHP review improved participant ability to apply the MHP and to work in interdisciplinary teams. Confidence improved among participants from all disciplines.

Keywords: Interdisciplinary, Massive Hemorrhage, Resuscitation, simulation, Trauma
IMPLEMENTATION AND EVALUATION OF AN IMMERSION CURRICULUM FOR FIRST-YEAR PEDIATRIC RESIDENCY PROGRAM

Arielle Levy¹, Stephanie Vairy¹, Ana Carceller¹, Olivier Jamouille¹, Caroline Chartrand¹
¹Department of Pediatrics, Sainte-Justine Hospital University Centre, Montreal, Canada

Background and aims: Transition from medical school into residency program is stressful. Pediatric residents often have reported feeling uncomfortable during the first months of training. We hypothesized that an educational intervention could decrease anxiety, increase confidence and abilities, leading residents to feel better prepared for new responsibilities. We implemented a immersion curriculum during the first month of residency in a large Canadian pediatric training program. This pilot program provided an overview of CanMEDs skills with hospital inter-professional encounters, pediatrics topics and practical courses.

Methods: Pre and post-immersion surveys were administered to 11 pediatric residents (PGY-1). We compared them to 16 pediatric juniors’ residents, not exposed to the immersion rotation.

Results: Response rate was 100%. After the training program, PGY-1 felt more confident about specific pediatric diseases, management of newborns, respiratory distress and convulsion cases (p=0.04, p=0.01, p=0.04, p=0.008). After their 1st month of training, 45.5% of PGY-1 felt confident to face residency compared to 14.3% of residents without the immersion rotation.

Conclusions: This immersion curriculum increased pediatric resident’s confidence to start their training. A prospective study with a larger sample acquired over several years will give a better evaluation of this program.

Keywords: Curriculum, pediatric, Training
IMPLEMENTATION OF A CANMEDS FRAMEWORK BASED PROGRAM FOR QUALIFICATION AND COMPETENCE BASED TRAINING FOR PHYSICIANS WORKING WITH CHILDREN IN PRIMARY CARE IN GERMANY

Ulrike Gilmans¹, Folkert Fehr², Ralf Gilmans³ and education and training of the DGAAP
¹Deutsche Gesellschaft für Ambulante Allgemeine Pädiatrie, Rhauderfehn, ²Gemeinschaftspraxis Dr. Fehr und Dr. Buschmann, Sinsheim, ³Kinder- und Jugendklinik, Klinikum Emden, Emden, Germany

**Background and aims:** The program will be established by the DGAAP (German society of Primary Care Pediatrics). The post graduate education for pediatricians will take at least five years among them max. two years in primary care. So far is the quality of education depending of the individual skills and experience of the instructor this means in most cases of one pediatrician in his own practice.

**Methods:** The DGAAP developed within the last three years a competence based training program related to the …curriculum in primary care paediatrics“ of the ECPCP but additional based of the CanMEDS framework.

**Results:** This training program defines a wide range of paediatric EPAs (entrustable professional activities) and will be established as an electronic based portfolio for a germanwide competence based training in paediatric PC settings.

**Conclusions:** The DGAAP applies for the confirmation of the successful completion of the training by the …Ärztekammer“ (General Medical Council).

**Keywords:** None
IN-SERVICE TRAINING TO ENSURE EFFECTIVE AND EFFICIENT MOTHER-INFANT CARE: THE CASE OF JTG DISTRICT, SOUTH AFRICA

Maserame Oss¹, Mando Leburu¹, Busisiwe Nkosî², Motshana Phohole², Yajna Lalbadahur²
¹PATH, Kurumani, ²PATH, Johannesburg, South Africa

Background and aims: Health care facilities continue to face challenges in treating mother and baby as a pair, resulting in loss to follow up in postnatal care and missed opportunities and mismanagement of PMTCT outcomes. During the child’s immunization visits, checking the mother’s viral suppression simultaneously provides an opportunity for an effective PMTCT cascade. This paper describes the role of in-service training in the treatment of mother-baby pair in JTG district, South Africa.

Methods: Five cases of Road to Health booklet (RtHB) and mother’s patient folders were audited. In-depth interviews were conducted with mothers. The in-service training on HIV exposed infant prophylaxis and importance of treating mother and baby as pair was also observed and assessed. About 25 nursing clinicians in a primary health facility and local hospital were trained.

Results: The assessment showed that during post-natal visits, only the infant and not the mother were being treated, as the health care provider only focused on the baby’s immunization. There was also evidence that new guidelines on PMTCT were not being followed and that mothers are afraid to talk to the nurses about their HIV status.

Conclusions: The importance of treating the mother-baby pair is not yet well understood and implemented by health facilities as they are still being treated separately. Treating mother-baby pair is critical in retesting mothers HIV status, assessing adherence to treatment and treating babies holistically. It is critical to educate nurse clinicians on the importance of mother-baby pair, and to encourage mothers to discuss health concerns.

Keywords: In-service training, Mother-infant care, PMTCT
Background and aims: Individualised exams and training plans for children and young athletes are critical in preventing injuries according to training on scientific bases. Children and adolescents should stay home from school if any of their symptoms get worse when they are in class. Identifying and managing risk is good sports management practice.

Methods: Diagnostics have had a big impact on the management of children patients with sports related injuries and are essential for outbreak detection and response. We have identified the risks to children inherent in our sport and have taken steps to manage and limit these.

Results: Soft-tissue injury is the most prevalent type of injury in sport and it occurs to muscles, ligaments, tendons and the skin. The two most common hard tissue injuries are fractures and dislocations. Overuse injuries are sustained from continuous or repetitive stress, incorrect technique or equipment or too much training, but it is rarely in children and younger.

Conclusions: Sport-related concussions are common in youth and high school sports. Preventing those who have been identified as causing harm to children from having contact with children in your sport.

Keywords: Children, Management, Sports
"PAEDIATRIC MUSCULOSKELETAL MATTERS' - AN E-RESOURCE WITH GLOBAL REACH - THE ESSENTIALS OF KNOWLEDGE AND SKILLS RHEUMATIC DISEASE IN CHILDREN

Nicola Smith¹, Sharmila Jandial², Alan Easton³, Raju Khubchandani⁴, Mercedes Chan⁵, Tim Rapley⁶, Helen Foster*¹, ²
¹Musculoskeletal Research Group, Institute of Cellular Medicine, Newcastle University, ²Paediatric Rheumatology, Great North Children’s Hospital, ³BoxModel Digital Media, Newcastle upon Tyne, United Kingdom, ⁴Department of Pediatrics, Jaslok Hospital and Research Centre, Mumbai, India, ⁵Paediatric Rheumatology, University of Alberta, Edmonton, Canada, ⁶Institute of Health and Society, Newcastle University, Newcastle Upon Tyne, United Kingdom

Background and aims: Delays in access to care are well reported in children with musculoskeletal (MSK) conditions who often present to non-experts in MSK medicine. ‘paediatric musculoskeletal matters’ (pmm – www.pmmonline.org) was developed as a free resource targeting non-MSK specialists with content informed by evidence-based learning needs and subject to peer review. Our aim is to describe the reach and uptake of pmm since launch (Nov 2014).

Methods: Data from Google Analytics, e-surveys and structured interviews were analysed using mixed methods.

Results: To date, pmm has reached 142 countries (>15,000 users, >77,000 hits, Table 1). Of users for which job details were provided (205), most were non-specialists (general paediatrics, primary care) and many (103) were trainees/students. On average, users spend 4 minutes and access 4 pages per session. The most accessed pages are: clinical skills, normal MSK development, normal variants and ‘red flags’. Smartphones are the preferred device to access pmm where Internet access is variable, e.g. Africa, India. User feedback proposed ways to optimise content for an international audience, (e.g. spectrum of clinical presentations). ‘pmm India’ (Sept 2015) highlights partnership with local clinicians to develop pmm for other contexts. Further ‘internationalisation’ is in progress with more global partners.

Conclusions: Rapid globalization necessitates the development of culturally competent resources. pmm reflects collaborative partnership with a reach that is expanding through ‘internationalisation’ of content to further raise awareness of MSK problems for improved health outcomes.

Keywords: education program, e-resource, musculoskeletal diseases, pGALS
POST-GRADUATE ADOLESCENT INTERVIEWING SKILLS: STRUCTURED FEEDBACK AND ITS EFFECTS ON RESIDENTS’
Kim Blake¹, Genna Bourget¹, Nadim Joukhadar¹, Sarah Manos¹, Karen Mann¹, Jill Hatchette¹
¹Dalhousie University, Halifax, Canada

Background and aims: Residents require a unique skill set to communicate with adolescents. Our study assessed the effect of structured feedback following a standardized patient (SP) encounter on residents’ adolescent-specific communication skills.

Methods: PGY1 Residents performed a 30-minute interview with an SP adolescent/mother pair who individually scored performance using the validated Structured Communication Adolescent Guide (SCAG). PGY1’s were randomized to receive feedback following the interview based on the SCAG (feedback group) or not (no feedback group). All residents completed a 2nd interview 6 weeks later. Scores were analyzed using unpaired T-tests.

Results: 38 residents participated. Feedback group (n=21) versus no feedback group (n=17) 1st interview SCAG scores did not differ significantly, p=0.66. The Feedback group 1st and 2nd interview mean Total Item SCAG scores by SP adolescents were 34.19, SD=10.19 and 45.17, SD=6.22 respectively; p=0.002. SP mother’s scores also demonstrated significant improvement, p =0.001. Feedback group Global Rating scores, as per SP mother and adolescent, demonstrated significant improvement (p=0.001/0.02). No significant improvement was observed in the no feedback group, p=0.62.

Conclusions: Structured feedback following a single encounter allows for significant improvement in the skills required to perform an appropriate, succinct adolescent interview.

Keywords: adolescent, Feedback, Interviewing, Postgraduate
SKILLS TRAINING TO SUPPORT PEDIATRIC CARE QUALITY IMPROVEMENT RUSSIAN EXPERIENCE.

Alexander Baranov¹, Ilya Mityushin², Leyla Namazova-Baranova³, Tatiana Kulichenko², Mayya Bakradze², Vladislav Chernikov⁴, Tea Margieva⁵

¹Director, Scientific center for children’s health, ²EMERGENCY, ³deputy director, ⁴Simulation center, chief, ⁵Neprology, SCCH, Moscow, Russia

Background and aims: In 2012-2014 a joint WHO-Russia project was realized in 4 countries of Africa and Central Asia to improve pediatric quality of care. After the primary hospital assessment WHO Pocket Book trainings were provided in project countries. But team of Russian experts realized the necessity of extension of pediatric education regarding utilization of up-to-date drugs and equipment, advanced guidelines in intensive care. In addition practical skills are really a big gap in health care provider’s education.

Methods: In 2014 a new fully equipped simulation center were put into operation. Modern high-fidelity robots and mannequins are the core of the new center Each course consisted of 72 study hours in 2 weeks: 24 lecture hours and 48 hours of practical skills

Results: In 2014-2015 totally 328 doctors have been trained. Among the chosen 12 countries there were 5 member-states of the former USSR and 7 other developing countries.

Conclusions: Simulation center in Scientific Center for children health, Moscow has enough capability to become a consolidating educational facility for leaners from developing countries. In next 3 years additional 15 courses are planned and team of WHO experts would have the possibility to evaluate the impact of simulation trainings on pediatric quality of care during hospital assessment in future WHO-Russia joint programme in this 12 countries.

Image:
Keywords: Simulation-based learning, Moscow, WHO project, developing countries
Education and Training

TEACHER’S AND MOTHER’S PERCEPTIONS ON HANDWRITING PERFORMANCE OF PRETERM AND TERM CHILDREN AT GRADE TWO.
Ying-Lu Hsiao*, Hui-Ning Shih¹, Wen-Hui Tsai², Yea-Shwu Hwang¹
¹Department of Occupational Therapy, College of Medicine, National Cheng Kung University, ²Department of Pediatrics, Chi Mei Medical Center, Tainan, Taiwan, China

Background and aims: Handwriting is an important skill for school-aged children. Preterm children are at high risk for a deficit in the sensorimotor and cognitive functions related to handwriting. However, few studies have investigated the handwriting performance of preterm children. In this study, we aimed to compare handwriting performance of second grade children born preterm and at term.

Methods: A total of 63 preterm children and 67 typically developing children born at term were included. All of children were aged 7-8 years and attended regular classes. Their mothers completed a self-designed demographic and handwriting problem questionnaire by self-report. Meanwhile, class teachers were asked to fill out the Chinese Handwriting Evaluation Form (CHEF).

Results: After adjusted for child age and maternal socioeconomical status, we found that preterm boys demonstrated poorer performance in the Legibility, Accuracy, and Speed domains of the CHEF than the other three groups (preterm girls, term boys, term girls). More preterm boys had problems in the domains of Legibility and Accuracy than other groups. Besides, according to maternal report, more preterm boys had handwriting problems (e.g., poor spacing in components of words, inattention in handwriting tasks) than other groups.

Conclusions: The present results indicated that preterm boys seem to have higher risk for handwriting difficulties. It is suggested that the function of school-aged children born prematurely should be continuously monitored to school age.

Keywords: preterm, handwriting, school-aged child
THE CHARACTERISTICS OF NURSING FOR CHILDREN WITH CARDIOVASCULAR DISEASE AND THE ACTUAL STATE OF NURSING EDUCATION IN JAPAN

Yayoi Munemura 1, Yoshiko Mizuno 2, Junko Ogawa 3, Naoko Kurita 4

1Faculty of Nursing, Yamanashi Prefectual University, Yamanashi, 2Chiba Cerebral and Cardiovascular Center, 3Shukutoku University, Chiba, 4Tokyo Women's Medical University Hospital, Tokyo, Japan

Background and aims: Although nurses in pediatric cardiology units are required to have a high level of skill and knowledge, Japan has no education system focusing on pediatric cardiology nursing. Therefore, we aimed to clarify the characteristics of nursing for children with cardiovascular disease and the actual state of education in a clinical setting in Japan.

Methods: We conducted semi-structured interviews in pediatric wards with 5 nurses. Interviews were qualitatively analyzed subsequently.

Results: The characteristics of children were divided into 6 categories, such as “easy to acute deterioration,” and “a narrow safety margin.” The actual state of education in the clinical setting were divided into 7 categories, such as “nursing care varying from hospital to hospital.” The current state of education were divided into 9 categories, such as “missing educational material and lack of workshops,” and “practice relies on knowledge and skill obtained from experienced nurses.”

Conclusions: Results showed that there is a lack of education material and education opportunity for nurses and that these nurses provide care based on their experience. Furthermore, the number of the cardiac catheterization varies according to hospitals; therefore, there are significant differences in nurses’ experience. This highlights the urgent need for an educational system in Japan.

Keywords: Nursing Education, Pediatric cardiology
THE EFFECTS OF RECOMMENDED AEROBIC GYMNASTIC EXERCISE ON COGNITIVE AND MOTORIC ABILITY IN CHILDREN

Muhammad Irfannuddin ¹, Yunita Fediani², Budi Santoso¹, Masayu Rita Dewi²
¹Physiology, ²Pediatrics, School of Medicine, Sriwijaya University, Palembang, Indonesia

Background and aims: Cognitive and motoric ability has important role in children’s development, whereas exercise has benefit effects on those abilities. In Indonesia, knowledge materials mostly have dominant role in primary school curriculum. Physical exercise lesson is only given once a week along with the theory occasionally. We conducted clinical study to give evidence that 3 x/week exercises has better effect compared to 1 x/week exercise on cognitive and motoric skill ability in children.

Methods: Children aged 6-8 years old were divided into treatment (n=34) and control group (n=33). Treatment group were performing fun aerobic gymnastics, 45 minutes each, 3 times a week for 8 weeks. Control group were also performing the same exercise for only once a week. Cognitive and motoric ability were measured before and after intervention.

Results: A recommended regular exercise has better effect on executive function, reaction time, flexibility, agility and coordination, compared to control. There were no differences on memory and balance ability. Both groups have shown better result for all indicators after exercise.

Conclusions: Exercise in both groups has positive effect on cognitive and motoric ability, but a recommended 3 x/weeks regular exercise has better effects compared to 1 x/week exercise. School program should give more portions for exercise activity in their curriculum.

Keywords: Cognitive ability, Gymnastics exercise, Motoric ability
WHEN THE OUTCOME IS BLEAK - RESIDENTS PERCEPTIONS
Madathil Govindaraj Geeta¹, Padinharath Krishnakumar¹
¹pediatrics, Government Medical College, Kozhikode, Kozhikode, India

Background and aims: Pediatric residents generally have poor communication skills although they face daily challenges. The aim of the study was to assess the perceptions and practice of final year pediatric residents in breaking bad news to parents.

Methods: The perceptions and practice of pediatric residents regarding breaking bad news to parents and care givers were evaluated using a semi structured questionnaire.

Results: There were 92 final year residents who participated in the study with 44 (48%) girls and 48(52%) boys. Only 15 (16%) had received any training in communication skills. Only 32 (35%) of the residents were comfortable in breaking bad news to parents. Majority of the residents felt that the most challenging problem they faced was handling angry relatives, followed by breaking bad news. The skills which were practiced least included summarizing at the end (56.5%) and giving information in small chunks (56.7%).

Conclusions: Communication skills of pediatric residents do not improve with experience alone and need to be explicitly taught in the curriculum.

Keywords: Breaking bad news, Pediatric residents
ADDRESSING THE KNOWLEDGE-TO-PRACTICE GAP IN PEDIATRIC EMERGENCY MEDICINE: TRANSFORMING THE LATEST EVIDENCE INTO USEFUL BEDSIDE TOOLS.

Leah Crockett¹, Carly Leggett¹, Lisa Knisley², Mona Jabbour³, David Johnson⁴, Terry Klassen², Robin Featherstone⁵, Lisa Hartling⁶, Shannon Scott⁶

¹George & Fay Yee Centre for Healthcare Innovation, ²Children's Hospital Research Institute of Manitoba, Winnipeg, ³Children's Hospital of Eastern Ontario, Ottawa, ⁴Alberta Children's Hospital Research Institute, Calgary, ⁵Alberta Research Centre for Health Evidence, ⁶Faculty of Nursing, University of Alberta, Edmonton, Canada

Background and aims: Translating Emergency Knowledge for Kids (TREKK) is a national knowledge mobilization initiative established in 2011 to address the knowledge needs related to the care of children in general emergency departments (ED) across Canada. One of TREKK’s goals was to create a suite of instantly accessible, easy-to-use educational tools for the diagnosis and management of pediatric conditions.

Methods: A comprehensive needs assessment, including a survey of 1,471 healthcare providers and 897 health consumers at 32 Canadian general EDs, informed the selection of priority clinical conditions. Through Network meetings and online surveys, end users stated they wanted a short, easily readable document summarizing diagnosis and treatment information for use at the bedside in emergency settings. For each priority condition, a knowledge broker works with a leading pediatric expert to develop a Bottom Line Recommendation (BLR), outlining important practical considerations for the management of a priority condition.

Results: Data collected on downloaded BLRs show the documents have been accessed 3,396 times, with the most highly accessed recommendations being bronchiolitis (759 clicks) and croup (693 clicks). However, available metrics are likely an underestimation of their use, as documents are also designed to be printed and used repeatedly at the point of care.

Conclusions: We responded to end-users’ requests for varying levels of information through the creation of BLRs, providing healthcare professionals with instant access to the latest evidence in pediatric emergency medicine for use at the point of care.

Keywords: Clinical tools, Knowledge Mobilization, Pediatric Emergency Medicine, TREKK
Background and aims: This study sought to conduct a comparative analysis of CRP and ESR levels to investigate the effectiveness of each index in predicting the perforation of pediatric patients with acute appendicitis (AA) in ED.

Methods: A total of 564 pediatric patients (<15) who were admitted for appendectomy for AA via the ED between January 2005 and December 2014 were reviewed retrospectively. Perforation was identified based on histopathology showing perforation. Patient age, sex, body temperature and initial laboratory results in the ED were assessed.

Results: Perforation due to acute appendicitis was identified in 204 (36.2%) pediatric patients. Median WBC count, neutrophil count, NLR, CRP and ESR were significantly higher in the perforated group compared to the non-perforated group (p < 0.001) in the ED. But, in multivariate logistic analysis, ESR >15 mm/h [odds ratio (OR) 2.253, p = 0.026] and WBC > 13.53 (10^9/L) (OR 3.571 p < 0.001) were significant independent factors for AA perforation in pediatric patients. Also, if the patients showed the ESR >15 mm/h and WBC > 13.53 (10^9/L), OR for perforation was 6.259 (95% CI = 4.119-9.512) (p < 0.001).

Conclusions: We suggest that the initial WBC and ESR laboratory results should be considered more powerful predictive factor than CRP for the diagnosis of AA perforation of pediatrics in the ED.

Keywords: acute appendicitis, child, C-reactive protein, Diagnosis, emergency department
Emergency Medicine and Critical Care

CAB VERSUS ABC: IMPACT ON EFFICIENCY OF PEDIATRIC RESUSCITATION IN SIMULATION BASED SCENARIOS
Arielle Levy 1, Yasaman Shayan 1
1Department of Pediatrics, Sainte-Justine Hospital University Centre, Montreal, Canada

Background and aims: Since 2010 PALS teaches Circulation-Airway-Breathing (CAB) vs. Airway-Breathing-Circulation (ABC) for patients in cardiac arrest. Aim: compare performances of pediatric residents during simulated resuscitations after being taught CAB vs. ABC during a PALS course.

Methods: Experimental pre/post study, pediatric hospital simlab. R1 and R3 pediatric residents participated in simulations after taking a PALS course taught according to 2010 AHA guidelines emphasizing CAB. 23 residents lead 2 resuscitation scenarios: pulseless non-shockable and pulseless shockable arrest. Performances were compared to those of 24 residents from another study previously trained according to 2005 ABC sequence. 2 raters evaluated performances on 5 critical tasks: times to pulse check, CPR, ventilation, epinephrine request and defibrillation.

Results: Residents taught CAB sequence performed significantly better on time to pulse check (median delays of 10 versus 31 seconds (p value <0.01)) and CPR (median 20 versus 46 seconds (p value <0.01)). Time to ventilation was significantly delayed for the CAB group (33 versus 19 seconds; p-value <0.01). No significant differences were noted for time to epinephrine request (p value 0.11) and defibrillation (p value 0.64).

Conclusions: CAB training was associated with shorter time to pulse check and CPR initiation, but at the cost of delayed ventilation. Moreover, epinephrine request and defibrillation were not performed more rapidly in either group.

Keywords: PAEDIATRICS, Resuscitation, simulation
Background and aims: A new non-invasive bladder stimulation technique has been described to obtain clean-catch urine in infants <30 days. The objectives were to determine proportion and predictive factors for successful clean-catch (CC) urine samples using a stimulation maneuver technique in infants <6 months and to determine the proportion of bacterial contamination with this method.

Methods: Prospective cohort study in a tertiary pediatric ED in infants <6 months needing a urine sample. CC urine samples were collected using standardized stimulation technique. Urethral catheterization was performed after CC urine in: positive urinalysis, use of antibiotics, unsuccessful CC. Primary outcomes were proportions of successful CC specimens and bacterial contamination. We determined associations between successful urine samples and four predictive factors (age, sex, low oral intake and low urinary output).

Results: 126 children were included. The CC procedure was effective in 64 infants (51%; median time: 45 sec). Infants 0-29; 30-59 and 60-89 days had more successful procedures vs. infants >89 days (ORs: 6.35 (1.97-20.46); 3.51 (1.33-9.27) and 4.44 (1.48-13.32) respectively). Contamination was found in 19% (95%CI: 11-31%) in the CC group vs. 8% (95%CI: 3-18%) in the invasive method group.

Conclusions: Stimulation technique is a quick and effective way of obtaining CC urine in children < 90 days. Contamination proportion for CC urine specimen was comparable to the invasive method.

Keywords: Fever, Investigation, Urinary Tract Infections
Background and aims: Children with HLH are at an increased risk of critical illness and admission to the Children’s Intensive Care Unit (CICU). We described their clinical characteristics and aimed to identify risk factors for poor clinical outcomes.

Methods: Children who were diagnosed with HLH between 1 January 2000 and 31 July 2013 were included in this retrospective study. Primary outcome was mortality. Patient characteristics, clinical course, laboratory findings, supportive care and treatment received were compared. Chi-square and Mann-Whitney-U tests were used to compare categorical and continuous variables respectively. Statistical significance was taken as p<0.05.

Results: 15 patients with HLH had 25 CICU admissions. Median age was 8 (Interquartile range [IQR] 3-10) years. Median length of stay in CICU was 6 (IQR 3-15) days. Overall CICU mortality was 7/25 (28%). A significantly larger proportion of non-survivors required mechanical ventilation (100% vs 44.4%, p=0.011), inotropic support (85.7% vs 16.7%, p<0.001) and continuous renal replacement therapy (CRRT) (42.9% vs 0%, p=0.003). Non-survivors had more blood product transfusion episodes [24 (IQR 14-43) vs 2.5 (IQR 1.0-7.5), p=0.001].

Conclusions: Risk factors for mortality in critically ill children with HLH were the need for high respiratory and inotropic support, CRRT and transfusions.

Keywords: children, critical illness, Hemophagocytic lymphohistiocytosis, pediatric
Background and aims: Niemann-Pick Disease (NPD) as a very rare disease is estimated to affect 1 in 250,000 individuals worldwide. The aim of this case report is to share our experience in managing end-staged NPD patient. A 21-month-old boy was presented to our emergency unit. He was already intubated and ventilated for 1 week in a local private hospital due to respiratory failure. He was diagnosed as end-staged NPD type A/B by a pediatric metabolic disease consultant in a national referral hospital in Indonesia since 8 months before admission.

Methods: Enzyme replacement therapy was not conducted as it is not yet available. However, ventilation was continued.

Results: Respiratory failure because of endogenous lipoid pneumonia was unresolved due to the disease natural history. He died on the 39th day of hospitalisation.

Conclusions: End-staged cases should not be admitted to PICU. Unfortunately, there is no legal rules regarding this issue in Indonesia.

Keywords: end stage, Niemann-Pick disease
EFFICACY OF RESIDENTS TO DIAGNOSE ACUTE OTITIS MEDIA USING A SMARTPHONE OTOSCOPE ATTACHMENT

Sarah Mousseau¹, Annie Lapointe², Jocelyn Gravel¹
¹Division of Emergency Medicine, Department of Pediatrics, ²Division of Otorhinolaryngology, Department of Surgery, Centre Hospitalier Universitaire Sainte-Justine, Montreal, Canada

Background and aims: The CellScope Oto© is a new smartphone otoscope attachment that allows physicians to share diagnostic-quality images of the ears. Our primary objective was to evaluate the residents’ efficacy in diagnosing Acute Otitis Media (AOM) in children using the CellScope Oto© (CSO) compared with a traditional otoscope.

Methods: This was an experimental randomized trial performed at a single tertiary care pediatric emergency department. Patients, aged one to five years old with fever and respiratory symptoms, were first evaluated by a staff pediatric otolaryngologist using a binocular microscope (“clinical” gold standard), and then by two participating residents randomized to use the CSO or the traditional otoscope. The residents were blinded from each other and from the otolaryngologist evaluation. The primary analysis was the AOM diagnostic accuracy of residents compared with the pediatric otolaryngologist’s diagnosis.

Results: Between August 2015 and April 2016, 73 residents examined 81 patients. 6 patients were excluded leaving 75 children (150 ears) evaluated twice in the study. The primary analysis showed no statistical difference in diagnostic accuracy for residents using both methods: accuracies 0.67 (95%CI: 0.59-0.74) for the residents using the traditional otoscope and 0.71 (95%CI: 0.63-0.77) using the CSO for a difference of 0.04 (95%CI: -0.04 to 0.14).

Conclusions: In this study the CellScope Oto© was as secure and valid as a traditional otoscope when used by residents to evaluate the ears of young children at risk for AOM.

Keywords: None
FENOLDOPIAM IN PREVENTING POST-CARDIOPULMONARY BYPASS ACUTE KIDNEY INJURY IN THE PEDIATRIC POPULATION: A META-ANALYSIS

Robert Huibonhoa*, 1, Jasmine Ann Javier1

1Pediatrics, Philippine General Hospital, Manila, Philippines

Background and aims: Surgical correction of congenital heart defects requires patients to undergo Cardiopulmonary bypass (CPB). Acute kidney injury (AKI) after CPB occurs as often as 30-40% in pediatric cardiac surgeries. Fenoldopam mesylate is a dopamine-1 agonist that appears to improve renal function in clinical situations of reduced blood flow.

To determine the efficacy of Fenoldopam in preventing AKI in infants less than 1 year old undergoing cardiopulmonary bypass.

Methods: A comprehensive search of databases was done. Randomised and quasi-randomised controlled trials in which Fenoldopam was compared to Placebo during CPB in infants < 1 year old was included. Primary outcomes included incidence of AKI. The secondary outcomes measured: urine output measures, mean arterial pressure, inotropic score, serum lactates measured postoperatively, duration of mechanical ventilation, length of hospital stay, and number of mortalities.

Results: AKI incidence was noted to have an RR of 0.70 (95% CI 0.5-0.99; p value 0.05). There was no significant difference between groups in terms of duration on mechanical ventilator and time to discharge. No mortalities were mentioned in both studies.

Conclusions: Overall, there is a general tendency towards benefit when giving fenoldopam versus placebo in preventing post-CPB AKI but it was not statistically significant in this study which maybe due to the scarce and limited studies regarding this topic. Further studies should be done involving multiple centers and fenoldopam as a single drug.

Keywords: Acute Kidney Injury, Fenoldopam, Post Cardiopulmonary Bypass
Emergency Medicine and Critical Care

INDICATIONS AND FREQUENCY OF BLOOD TRANSFUSION IN AN EMERGENCY PAEDIATRIC SETTING IN NIGERIA

Blessing Imuetinyan Abhulimhen-Iyoha¹, Yetunde Tinuola Israel-Aina*²
¹Department of Child Health, university of benin, ²Department of Child Health, University of Benin Teaching Hospital, Benin City, Nigeria

Background and aims: Blood transfusion is a life-saving procedure in paediatric practice. Knowledge of the rate of transfusion is important to ensure that blood transfusion facilities are made available as at when due. This study determined the common conditions requiring blood transfusion, the frequency of transfusions and outcome of transfused patients.

Methods: Transfusion records of children admitted into the emergency unit of the University of Benin Teaching Hospital, Benin City, Nigeria from January 2010 to December 2011 were retrieved. Information on patient’s diagnosis, number of transfusions and outcome was documented.

Results: A total of 655 children were transfused; 226 (34.5%) had multiple transfusions giving a total of 911 transfusions. The frequency of blood transfusion was 1.2 transfusions per day. The age of the children ranged between one month and 17 years (median and modal age is 2 years).

Common indications for transfusion were severe malaria (55.4%), sepsis (11.5%) and sickle cell anaemia (4.0%). Seventy five (11.4%) children were discharged home, 9 (1.4%) discharged against medical advice and 530 (81.0%) were transferred to the main paediatric wards for further management. Mortality amongst them was 6.2%.

Conclusions: Severe malaria and sepsis were major indications for transfusion. Measures to reduce the prevalence of these conditions will reduce the transfusion rate in our locale.

Keywords: Blood transfusion, indications, frequency, children emergency unit
LABORATORY FINDINGS AN IMPORTANT ELEMENT TOWARD THE DIAGNOSIS IN INTOXICATION IN CHILDREN

Ilirjana Bakalli¹
¹PICU, UHC "Mother Theresa", Tirana, Albania

Background and aims: Intoxication in children remains one of the most difficult problems to be treated. Parents aren’t as helpful as to what their child have taken, nor for the time or other important elements to correct diagnosis. With our presentation we emphasize the importance of laboratory findings toward diagnosis and discuss what other examinations would be appropriate in such cases.

Methods: A case report

Results: A 15 months old child presented at our PICU in very critical condition, with Kussmaul breathing and deep coma. According child’s parents he was well the night before admission. They presented in hospital about 7 hours after they observed that the child wasn’t well, with a strange breathing. At admission we noticed severe hypoglycemia 33 mg/dl, profound acidosis: pH=6.89, extremely low HCO3<3 mmol/L, pCO2=15 mmHg, lactate1.4 mmol/L and Anion gap=22. Eyes’s assessment by ophthalmologist was normal. MRI head revealed ischemic lesions by toxic nature. After these laboratory data we concluded for salicylate intoxication. Even the aggressive therapy, acidosis quite resistant to treatment, returned to normal about 48 hours after treatment. Despite laboratory improvement, clinical condition worsened with multiorgan failure and death.

Conclusions: Laboratory findings are very useful toward diagnosis in pediatric intoxications. In cases with very profound acidosis, including metabolic MRI changes, we think that’s appropriate to begin immediately hemodialysis.

Keywords: None
MARIJUANA INDUCED CHEST PAIN IN 13-YEAR-OLD BOY; RARE BUT IMPORTANT

Nükket Aladağ Çiftdemir¹, Ülfet Vatansever*¹
¹pediatrics, Trakya University, Edirne, Turkey

Background and aims: Chest pain is a common presenting complaint to pediatrics, pediatric cardiology, and pediatric emergency departments. It is commonly caused by benign etiologies in children but may be caused by conditions that require further evaluation.

Methods: We describe a case of a 13-year-old boy with 4 months of intermittent chest pain that had been attributed to dizziness and tachycardia. According to his parents, also the convulsion like symptoms was observed twice. Because of these complaints the patient was examined several times by emergency doctors, twice by pediatric cardiologist, three times by pediatric neurologist and pediatric gastroenterologist.

Results: All laboratory tests including hemogram, serum electrolytes, renal functions, glucose, holter ECG monitoring, cardiac ECO, EEG, cranial MR and endoscopic examinations were normal. On the last pediatric emergency visit, the patient was complaining chest pain again. His examination was normal. Again his laboratory test, ECG was normal. Although there was no history of illicit drug or marijuana use, because of the patient was adolescent urine drug testing was conducted. The urine toxicological test was positive for synthetic cannabinoids. Confirmatory testing via gas chromatography-mass spectrometry was positive tetrahydrocannabinol.

Conclusions: Emergency pediatrician must identify the patients with chest pain due to marijuana use.

Keywords: adolescent boy, chest pain, marijuana use
NORMATIVE DATA FOR IVC DIAMETER AND ITS CORRELATION WITH THE SOMATIC PARAMETERS IN INDIAN CHILDREN

Kushagra Taneja¹, Virendra Kumar¹, Harish Pemde¹, Rama Anand²
¹Pediatrics, ²Radiodiagnosis, Lady Hardinge Medical College, New Delhi, India

Background and aims: This study aimed to know the normative data for inferior vena cava (IVC) diameter in children and its correlation with height, weight and body surface area. There is lack of cutoffs for IVC diameter for Indian healthy children

Methods: We enrolled 475 healthy children aged 1 month to 12 years. Subjects were divided into 5 groups as Group A – 1 month-1 year, B – 1-3 years, C – 3-6 years, D – 6-9 years and E – 9-12 years. Weight and height were measured and body surface area was calculated. IVC diameter was measured using M mode ultrasonography during expiratory and inspiratory phase of respiratory cycle. Collapsibility Index was calculated by measuring difference between maximum (expiratory) and minimum (inspiratory) IVC diameters divided by maximum IVC diameter

Results: The mean age of subjects was 4.72±3.72 years. Of 475 subjects. Mean weight for age was within normal limit. Mean IVC diameters (mm) during expiratory phase for Group A, B, C, D, E were 4.59±1.10, 5.63±1.56, 6.81±1.91, 8.10±2.14 and 11.30±2.44 respectively. Mean IVC diameters during inspiratory phase for Group A, B, C, D, E were 3.10±0.97, 3.69±1.18, 4.40±1.17, 5.20±1.42 and 7.28±1.86 respectively. CI of all age groups was also presented. There was significant positive correlation of IVC diameters with age, height and weight

Conclusions: This study provides reference values and equations for IVC diameters for Indian healthy children

Keywords: Ultrasonography, IVC diameter, Collapsibility index
OUTCOME OF CHILDREN WITH ENCEPHALITIS ADMITTED TO A PEDIATRIC INTENSIVE CARE UNIT
Kam Lun Ellis Hon¹, William Wong², Lawrence C. N. Chan², Ting Fan Leung¹
¹Paediatrics, The Chinese University of Hong Kong, ²Paediatrics, Prince of Wales Hospital, Shatin, New Territories, Hong Kong, China

Background and aims: We reviewed pathogens, morbidity and mortality in pediatric intensive care unit (PICU) patients with encephalitis.

Methods: Review of all patients with encephalitis admitted to a PICU between 2002 and 2014.

Results: Encephalitis (n=46) accounted for 2.7% of PICU admissions, but 11.8% PICU mortality. A microorganism was identified in 61% of encephalitis in the PICU. Enteroviruses and herpes viruses were isolated from CSF. Respiratory viruses (e.g. RSV and influenza viruses) and enteric viruses (e.g. rotavirus and norovirus) were obtained in the NPA or stool, but undetectable from CSF. More than 1/4 patients with encephalitis died. Males accounted for 85% of nonsurvivors and 52% survivors (p=0.038). Mechanical ventilation, inotrope, IVIG and corticosteroid usage were significantly higher among non-survivors (p=0.001–0.044). Binomial logistic regression showed that patients who received corticosteroid had a lower chance of survival than those who did not after adjusting for gender, IVIG and mechanical ventilation (adjustedOR=0.071, p=0.039). Eighteen (55%) of survivors had moderate-to-severe neurodevelopmental impairments.

Conclusions: Encephalitis is associated with significant mortality despite intensive care. Over 25% died and 55% survivors had moderate-to-severe neurodevelopmental impairments.

Keywords: None
PARAMYXOVIRUS INFECTION: MORTALITY AND MORBIDITY IN THE PEDIATRIC INTENSIVE CARE UNIT

Alice S. W. Tong\textsuperscript{1}, Kam Lun Ellis Hon\textsuperscript{2}, William Wong\textsuperscript{3}, Ting Fan Leung\textsuperscript{2}  
\textsuperscript{1}Department of Paediatrics, Sheung Kwan O Hospital, New Territories, \textsuperscript{2}Paediatrics, The Chinese University of Hong Kong, \textsuperscript{3}Paediatrics, Prince of Wales Hospital, Shatin, New Territories, Hong Kong, China

**Background and aims:** We investigated mortality and morbidity of patients admitted to a pediatric intensive care unit (PICU) with paramyxovirus infection.

**Methods:** Retrospective study between Oct 2002 and March 2015 of children with laboratory-confirmed paramyxovirus infection was included.

**Results:** 98 (5\%) PICU admissions were tested positive to have paramyxovirus infection (RSV=66, parainfluenza=27 and metapneumovirus=5). 41\% were mechanically ventilated, and 20\% received inotropes. The three viruses caused similar morbidity in the PICU. Fatality (7 patients) was associated with malignancy, positive bacterial culture in blood, the use of mechanical ventilation, inotrope use, lower blood white cell count and higher C reactive protein (CRP) ($p=0.02-0.0005$). Backward binary logistic regression for these variables showed bacteremia (OR, 31.7; $p=0.009$), malignancy (OR:45.5;$p=0.031$) and use of inotropes (OR15.0;$p=0.039$) were independently associated with non-survival. March and July appeared to be the two peak months for PICU hospitalizations with paramyxovirus infection.

**Conclusions:** Infections with paramyxoviruses account for 5\% of PICU admissions and significant morbidity. Patient with premorbid history of malignancy and co-morbidity of bacteremia are associated with non-survival.

**Keywords:** None
PATIENT AND PARENT INFORMATION VIDEOS/ DIGITAL INTERFACE TECHNOLOGY FOR USE WITHIN THE PEDIATRIC EMERGENCY DEPARTMENT

Sarah Fissler 1, Mary Ryan 1
1Emergency Department, Alder Hey Children’s Hospital, Liverpool, United Kingdom

**Background and aims:** Children attend the emergency department for reasons other than an accident, emergency or general concern about their welfare. The primary aim of this study was to create a short patient and parent information video on a common problem seen and gain feedback prior to producing a library of videos. Secondarily it allowed the expansion of the idea using interactive digital interface technology.

**Methods:** Background research was undertaken using staff in a busy tertiary pediatric emergency department to determine the focus of video. A video entitled 'Coughs and colds' was scripted, filmed and edited as a prototype. Volunteers via the hospital ‘Patient forum’ then formed three focus groups (5-10 years, 10-16 years and adults) to provide verbal and written feedback via a structured questionnaire. This was analysed using common theme analysis.

**Results:** 100% (24/24) felt that having the videos was a good idea. The majority want to see more (83%, 20/24) and 75% (18/24) of all groups would rather watch videos over reading leaflets. Common themes that emerged included use of technology to make the videos more accessible and appealing. For example website development, cell phone applications and touch screens. Several participants felt it useful to have sign language and language translation.

**Conclusions:** A library of videos will be produced to provide a comprehensive library of information for use within the paediatric emergency department. This will then be utilised with digital interface technology to target user groups in the most accessible and modern format.

**Keywords:** emergency department, information communication technology, Technology, video
Emergency Medicine and Critical Care

PEDIATRIC ABUSIVE HEAD TRAUMA MIMICS: READING ROOM AND COURTROOM CONTROVERSIES

Peter Kalina*1
1Neuroradiology, Mayo Clinic, Rochester, United States

Background and aims: Evaluation of potential victims of pediatric abusive head trauma involves not only recognizing positive cases, but excluding mimics. We sought to determine the incidence and type of injuries encountered in children evaluated for AHT subsequently determined to represent mimics.

Methods: IRB approved 4-year review of 221 children referred for evaluation of potential AHT. Of the 221, 107 (48 %) were age less than 12 months. Of the 107, 64 had brain imaging (60 %).

Results: 64 children with age range 11 days to 11 months. Of the 64, 45 (70 %) had positive imaging of brain. Of the 45, 10 (22 %) determined to be the result of AHT. Remaining 30 categorized as accidental head trauma or other. We focused on these clinical false positive cases.

Conclusions: Classic imaging triad of subdural hematoma, retinal hemorrhage, and encephalopathy is well known to those who care for AHT victims. It is equally important to exclude mimics. In many cases that go to trial, contentious exchanges arise between prosecution and defense: dating of subdurals, mixed density/signal subdural collections, alternative causes of "the triad," overlapping findings between accidental and nonaccidental trauma, absence of neck injuries, injuries from short falls, whether shaking can result in such extensive injuries. Examples of mimics will be presented to illustrate these controversies. While we must help prosecute the guilty, we must also help protect innocent parents and caregivers from false prosecution.

Keywords: abusive head trauma
PERINATAL OUTCOME OF NEONATES DELIVERED TO ECLAMPTIC MOTHERS IN A POOR-RESOURCE SETTING.

Ben Onankpa¹, Shalewa Ugege¹, Efe Abolodje¹
¹Department of paediatrics, Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria, Sokoto, Nigeria

Background and aims: Background: Preventive/interventional measures for eclampsia is panacea to significant beneficial outcome of neonates.

Aim: To assess the perinatal outcome of infants born to eclamptic mothers.

Methods: Methods. Cross-sectional study, at Usmanu Danfodiyo University Teaching Hospital (UDUTH), Sokoto, Nigeria between 1st June 2014 and 31st May 2015. Data was analysed using SPSS 20.0. Chi Square was used to test relationship between variables. P value was set at <0.05

Results: Deliveries were 2,870. One hundred and forty six (5.1%) mothers had eclampsia, 97(66.4%) were booked. Of the 146 neonates; 88 (60.3%) were males, 58 (39.7%) were females. Mean gestational age was 35.4 ± 3.3 weeks. Modes of delivery were; caesarian section 58 (39.7%), spontaneous vertex delivery 80 (54.8%), and instrumental deliveries 8 (5.5%). Fifty-two babies (35.6%) of eclamptic mothers were admitted into the Special Care Baby Unit; low birth weight 29(55.8%), prematurity 9(17.3%), perinatal asphyxia 12(23.1%) and others 2(3.8%). There were 26(17.8%) perinatal deaths; perinatal mortality rate of 178 per 1000 live births. Major causes of death were perinatal asphyxia 9(43.6%), prematurity 9(43.6%), respiratory distress syndrome 3(11.5%) and others 5(19.2%).

Conclusions: Conclusion: Eclampsia is a major contributor of fetal complications and mortality.

Keywords: None
PSYCHOMETRIC PROPERTIES OF HEARTS-MAP, A PSYCHOSOCIAL ASSESSMENT TOOL APPLIED TO CHILDREN AND YOUTH WITH A MENTAL HEALTH-RELATED PEDIATRIC EMERGENCY VISIT

Alison Lee¹, Quynh Doan², Tyler Black³, Garth Meckler⁴, Ali Eslami³
¹Pediatrics, University of British Columbia, ²Pediatric Emergency Department, ³Psychiatry, ⁴Pediatric Emergency Medicine, BC Children’s Hospital, Vancouver, Canada

Background and aims: Mental health (MH)-related pediatric emergency department (PED) visits are increasing, and a need exists for a validated standardized assessment tool. The primary objective was to evaluate inter-user agreement of HEARTS-MAP, a psychosocial assessment tool. The secondary objective was to evaluate the tool’s ability to predict hospital admission for psychiatric treatment.

Methods: 101 charts of a retrospective cohort presenting to BC Children’s Hospital (BCCH) PED with MH complaints were pulled and narratives were extracted. Clinicians, blinded to patients’ outcomes, applied the HEARTS-MAP tool to the cases. Inter-rater agreement was calculated using Cohen’s kappa statistics. Tool performance was assessed by evaluating the sensitivity and specificity of HEARTS-MAP to predict admission retrospectively. Performance evaluation was also conducted on 62 consented prospective patients.

Results: There was substantial agreement between two PED physicians (κ=0.7), and moderate agreement between PED physicians and nurse practitioner (κ=0.6), and bedside nurse (κ=0.5). Pediatric psychiatrists had fair agreement between themselves (κ=0.3), and with PED physicians (κ=0.4). Retrospectively, HEARTS-MAP had a sensitivity of 91% (95%CI,71%,99%), with a specificity of 41% (30%,53%). Prospectively, sensitivity improved to 100% (75%,100%), and specificity was 33% (20%,48%).

Conclusions: HEARTS-MAP, the first psychosocial assessment tool at BCCH PED, demonstrates strong inter-rater reliability between PED clinicians, with a high sensitivity in identifying patients with MH complaints requiring hospital admission.

Keywords: emergency department, Mental health
SEDATION OF CHILDREN FOR DIAGNOSTIC MRI EXAMINATION WITH TRICLOFOS SODIUM - SAFETY AND EFFICACY

Shun Yanai¹, Shinichi Takatsuki¹, Hiroyuki Matsuura¹, Tsutomu Saji¹, Rika Muto², Takashi Terada², Ryoichi Ochiai², Hitoshi Yoda², Akira Ohara¹

¹Department of Pediatrics, ²Department of Anesthesiology, ³Department of Neonatology, Toho University School of Medicine, Tokyo, Japan

Background and aims: Oral triclofos sodium (TS) is most often used for sedation in diagnostic imaging procedure across Japan owing to its easy administration, however, relationship between patient profile and safety issues are seldom studied. This research was planned to reveal factors affecting safety related to sedation with oral TS administration in Japanese children taking MRI examination.

Methods: In this retrospective cohort study, all charts of children under the age of sixteen taking MRI at Toho University Omori Medical Center were reviewed during the study period of October 1, 2013 to March 31, 2014.

Results: 243 children took MRI in total. 102 children (42.0 %) were given sedatives of any means, of which 93 children (91.2 %) were given TS. After excluding cases with untreated congenital heart diseases, there were 55 cases with valid body weight and vital signs in record. Major hypoxic events (SpO2 < 95 % and/or ΔSpO2 >= 5 %) were observed in 6 patients (10.9 %), however, with no irreversible recorded sequelae.

Conclusions: Hypoxic events associated with TS sedation were observed at significant rate, but similar to previous studies. In this study, it was first revealed that children showing hypoxic events during sedation were light body weight despite their age even though TS dosage against body weight was smaller than others. As indicated in sedation protocols, complete monitoring during sedation should be continually encouraged regardless of patient characteristics, yet further cautions should be paid for extremely smaller children.

Keywords: diagnostic imaging, efficacy, safety, sedation
THE INFLUENCE OF THE CAROTID ARTERY LIGATION AFTER EXTRACORPOREAL MEMBRANE OXYGENATION (ECMO) TO THE CEREBRAL INJURY IN CHILDREN
Ru Lin¹, Qiang Shu²
¹Cardiac Surgery, Children's Hospital of Zhejiang University, School of Medicine, ²Cardiac Surgery, Children's Hospital of Zhejiang University, School of Medicine, Hangzhou, China

Background and aims: To understand the influence of the right carotid artery ligation after extracorporeal membrane oxygenation (ECMO) to the cerebral injury in children.

Methods: Retrospectively 18 patients with severe heart and lung failure underwent ECMO treatment were chosen from July 2009 to September 2015. Right common carotid artery and internal jugular vein were performed with the distal blood vessels ligated after ECMO.

Results: Low perfusion (12/18), high lactic acid (9/18), oliguria (9/18), hypoxia (15/18) and E-CPR (6/18) presented before ECMO. The rate of weaning ECMO, survival and mortality was 72.22%, 66.67% and 33.33%. The mortality of brain injury was 50% (2/4). 12 survivors were followed up from one month to 6 years with cerebral injury existing in only one case. The cervical vascular ultrasound showed in 9 survivors that blood flow was normal in distal right carotid artery and internal jugular vein. 5 survivors with MRA examination were not found abnormal in the bilateral anterior, middle and posterior cerebral arteries. 2 cases were found with intracranial hemorrhage by MRI and CT.

Conclusions: The key to prevent the cerebral injury after ECMO is to pay attention to the risk factors before and during the ECMO. It is a good choice for children who need ECMO to be inserted with cervical blood vessels cannula and the ligation of vessels does not increase the incidence of cerebral injury.

Keywords: extracorporeal membrane oxygenation
THE MOCK CODE: AN EDUCATIONAL TOOL IN INTERNATIONAL MEDICAL MISSION

Francesco Bellia¹, Roger Barkin², Rosalia Ragusa³, Allan De Caen⁴,⁵, Elisabeth Friesen⁶, Antonio Chiaretti⁷, Marc Berg⁸

¹Department of Pediatrics- Ematology and Oncology, University of Catania, Catania, Italy, ²Department of Emergency Medicine, Denver Health Medical Center, Denver - Colorado, United States, ³Directional Medical Staff University Hospital, University Hospital Policlinico Catania, Catania, Italy, ⁴Department of Pediatrics, / Stollery Children’s Hospital, ⁵Division of Pediatric Critical Care Medicine, University of Alberta, Edmonton, Alberta, Canada, ⁶Medical center, Providence Alaska Medical Center, Anchorage - Alaska, United States, ⁷Emergency Department Pediatric Unit, Universitary Hospital Policlinico A. Gemelli, Roma, Italy, ⁸Division Critical Care Medicine, Pediatrics, AirMethods, Inc, Arizona, United States

Background and aims: The mock code isa safety protocol that is used in all Operation smile international medical mission before any patient hasa surgical procedure done. It is a practice in preparing a team of Medical individuals to respond to an unexpected medical or surgical emergency. Operation smile is a worldwide children’s medical charity that also provides education and training to medical volunteers in its program countries. During a mission as many as 120 children will be operated by a team consists of 35-60 medical professional from many different countries.

Methods: The volume of cases, the variety of individuals who have never worked toghether before, unfamiliar equipment, language and cultural barriers make an emergency preparedness plan very important. The mock code is an educational tool that is presented by the Pediatric intensivist and includes all staff no matter what discipline to attend before the mission gets started.

Results: The goal of this tecnique is to prepare the entire team to be able to successfully manage an emergency situation that may arise without panic or chaos. The second part is physically showing the entire team how to use the defibrillator, how to open the crash box and specifically where this equipment will be located. The PALS AHA guidelines are followed, stressing the importance of identifying key team members, closed loop communication.

Conclusions: The mock code would be usefulnot only in the pediatric ED but also in the pediatric medical or surgical wards to make sure that each team members know the role they will play should an emergency arise.

Keywords: Educational tool, emergency, medical mission
THE RISK OF INTRAVENOUS AMIODARONE IN NEONATES
Ilirjana Bakalli

Background and aims: SVT (Supraventricular Tachycardia) is a life threatening event at neonates, which necessitates a standard protocol for its management. The use of intravenous amiodarone may quickly achieve rate control, but the safety and efficacy of amiodarone in neonates has not been established, due to the presence of benzyl alcohol. Through our case report, we’d like to underline the risk of intravenous amiodarone in neonates.

Methods: Case report

Results: The child 29 days old, presents with SVT and severe heart failure. (Heart rate - 280 beats/min, with reduced contractility in echocardiography – FS= 20%). We used Amiodarone to treat the SVT, according the protocols (loading dose – 5 mg/kg two doses, followed by maintenance dose for 24 hours, to continue after with oral amiodarone). Thirty hours after the beginning of amiodarone treatment, child developed a severe situation, with gasping respiration, generalized cyanosis, bradycardia, seizures and cardiovascular collapse. Resuscitation has been done for more than 10 minutes. Clinical situation persisted severe for other two days, with respiratory distress and neurologic involvement. We interrupted amiodarone and added prednisolone in the treatment. After four days clinical situation was very good. He was discharged from hospital after 7 days.

Conclusions: Through our case we would like to emphasize that intravenous amiodarone should be used with caution in neonates, given that the presence of benzyl alcohol can cause even fatal "gasing syndrome".

Keywords: Amiodarone, Neonate, Supraventricular Tachycardia
UNINTENTIONAL CHILDHOOD POISONING AND QUALITY OF HOME TREATMENT GIVEN BY CAREGIVERS AS REPORTED AT THE CHILDREN EMERGENCY ROOM OF A TEACHING HOSPITAL IN NIGERIA

Blessing Abuhulimhen-Iyoha¹, Imuwahen Mbarie²
¹Department of Child Health, University of Benin, ²Department of Paediatrics, Stella Obasanjo Hospital, Benin City, Nigeria

Background and aims: Some children encounter and suffer the dreadful consequences of poisoning. In a bid to save life, caregivers tend to give some form of home treatment before the victims are taken to the hospital. Such treatment, which may be beneficial or harmful, has not been sufficiently evaluated particularly in our study locale. This study aims to close this gap.

Methods: Caregivers who brought their children to the Children Emergency Room (CHER) of the University of Benin Teaching Hospital (UBTH) in Benin City, Nigeria on account of ingestion of poisons were interviewed with the aid of a structured questionnaire.

Results: Majority (87%) of the caregivers gave some form of treatment at home whereas 13% did not. The treatment mostly (80.4%) adopted was the oral administration of palm oil forcefully to the children, followed by induction of vomiting (26.1%) by sticking fingers into the child’s throat. Some caregivers administered more than one form of treatment modalities. The treatment adopted by caregivers were influenced by the disposition of neighbours (41.3%), grandmothers (15.2%) and friends (6.5%).

Conclusions: Most caregivers embarked on some form of treatment after episodes of unintentional poisoning in their children before taking them to the hospital. The treatment given is mainly non-beneficial or harmful.

Keywords: Unintentional poisoning, Childhood, Home treatment, Nigeria.
A CAREGIVER’S PLIGHT: THE COMPLEX RELATIONSHIP BETWEEN FOOD INSECURITY, CHILDHOOD DIABETES AND FAMILY NEEDS.

Catherine Cox\(^1\), Naseem Alyahyawi\(^1\), Amy Ornstein\(^1\), Elizabeth Cummings\(^1\)
\(^1\)Pediatrics, Dalhousie/IWK, Halifax, Canada

**Background and aims:** Food insecurity (FI) rates are higher in families with a child with diabetes (DM) but little is known about how this impacts families. Our qualitative study aims to describe the lived experiences of food insecure families caring for a child with insulin requiring DM.

**Methods:** Caregivers self-identified from our DM clinic. FI status was verified. Semi-structured interviews explored caregivers’ experiences. Themes were synthesized via 2 separate thematic analyses, then consolidated. Enrolment stopped at saturation (n=13).

**Results:** DM management in a food insecure household places unique strains on family members. Coping strategies attempt to balance limited resources with competing family priorities. This results in a disproportionate impact of FI on family members such as: 1) Saving nutritious food for the child with DM & serving low quality options to siblings; 2) Caregivers reducing their own meals; 3) Prioritizing health needs of the child with DM above others. Impacts on family members include: stress, exclusion, hunger, guilt and isolation.

**Conclusions:** To meet the health needs of a child with DM living with FI, other family members go without, compromising the physical and emotional wellbeing of the family. This study shows that caring for a child with DM in a food insecure household impacts the entire family and highlights important areas for awareness and advocacy.

**Keywords:** Caregivers Perspective, Diabetes, Food Insecurity , Qualitative Evaluation
A NOVEL NROB1 MUTATION IN A PATIENT WITH ADRENAL HYPOPLASIA CONGENITA AND HYPOGONADOTROPIC HYPOGONADISM

Kyoungsoon Cho¹, Bumsuk Jung²
¹Pediatrics, Bucheon ST. Mary's Hospital, ²Pediatrics, Sungmo Jung Pediatrics Clinic, Seoul, Korea, South

Background and aims: X-linked adrenal hypoplasia congenita (AHC) is a rare disorder of adrenal gland development and associated with hypogonadotropic hypogonadism (HH).

Methods: A 14-year-old Korean boy was referred to our pediatric endocrinology clinic for recurrent hyponatremia. Physical examination revealed hyperpigmentation and prepubertal genitalia. Laboratory tests were compatible with a diagnosis of primary adrenal insufficiency and HH. The adrenal gland CT scan showed bilateral adrenal hypoplasia.

Sequencing of the DAX1 (NROB1) gene was carried out in the patient.

Results: Molecular investigation identified a novel mutation (c.833_835dup, p.Leu278dup) in the DAX1 (NROB1) gene.

Conclusions: A Korean boy with AHC and HH were detected to have novel mutation of the DAX1 (NROB1) gene. We hypothesize that the novel (p.Leu278dup) NROB1 mutation might be able to cause a disruption of DAX1 (NROB1) function and is probably involved in the development AHC and HH in this patient.

Keywords: None
APPETITE AND SATIETY HORMONES IN RISPERIDONE-TREATED YOUTH DURING ORAL-GLUCOSE TOLERANCE TESTING

Ying Fai Ngai¹, Angela Devlin¹, Constadina Panagiotopoulos¹
¹University of British Columbia, Vancouver, Canada

Background and aims: The second-generation antipsychotic (SGA), risperidone, is used to treat youth with mental health conditions. Metabolic side effects, including weight gain and type 2 diabetes, often occur. Previously, we have shown β-cell function is not different in risperidone-treated patients during an oral glucose tolerance test (OGTT) (Ngai et al, 2014). The effect of risperidone on appetite and satiety hormones is unknown.

Objective: To investigate whether appetite and satiety hormones are altered in risperidone-treated youth with mental health conditions.

Methods: A cross sectional study of 18 risperidone-treated and 20 SGA-naïve youth was conducted. Participants underwent a 2h OGTT, and appetite was assessed by visual analogue scale. Plasma peptide YY (PYY), glucose-dependent insulinotropic polypeptide (GIP), glucagon like protein 1 (GLP1), ghrelin, and leptin were quantified during OGTTs. Fasting plasma total and HMW adiponectin were quantified.

Results: Risperidone-treated and SGA-naïve youth were similar in age, psychiatric diagnoses, and zBMI. Fasting plasma ghrelin, leptin, and total and HMW adiponectin were not different. Appetite was increased during the OGTT in risperidone-treated compared to SGA-naïve youth (P<0.05). There were no differences in PYY, GIP, and GLP1.

Conclusions: This data suggests that risperidone is associated with elevated appetite in youth, but further research is needed to identify the underlying mechanism.

Keywords: appetite, glucose homeostasis, risperidone
BORDERLINE NEONATAL TSH LEVELS AND EDUCATIONAL AND DEVELOPMENT OUTCOMES

Samantha Lain¹, Jason Bentley¹, Veronica Wiley², Michelle Jack³, Bridget Wilcken⁴, Natasha Nassar*¹
¹Menzies Centre for Health Policy, ²NSW Newborn Screening Programme, ³Paediatric Endocrinology, Royal North Shore Hospital, ⁴Paediatrics and Child Health, Univ of Sydney, Sydney, Australia

Background and aims: Congenital hypothyroidism (CH) causes intellectual disability (ID) unless identified and treated. Clinical uncertainty remains about infants with thyroid stimulating hormone (TSH) levels below current newborn screening (NBS) cut-points. We examined the association between neonatal TSH levels and education and developmental outcomes.

Methods: Population-based record-linkage study of infants undergoing NBS from 1994-2008 in New South Wales, Australia, with subsequent assessments of childhood development or school performance. Multivariable logistic regression was used to account for potential confounders.

Results: 503,706 infants had a newborn TSH result that linked to a developmental or education outcome. As newborn TSH levels increase, from 75-80th centile, the risk of having a poor neurodevelopmental outcome increased until the 99.95th centile. Infants with a TSH >99.95th centile, likely to have diagnosed and treated CH, had similar results to TSH <75th centile. Infants with a TSH 99.5-99.9th centile were more likely to have poor numeracy performance (aOR 1.57, 95%CI 1.29-1.90) and poor development (aOR 1.52, 95%CI 1.20-1.93).

Conclusions: We have shown an association between newborn TSH levels below NBS thresholds of many countries and poor education and developmental outcomes.

Keywords: Developmental outcomes, thyroid
CHILDHOOD OBESITY PREVENTION THROUGH PHYSICAL ACTIVITY PROMOTION IN CHINA: THE HEALTH LEGACY PROJECT OF THE 2ND SUMMER YOUTH OLYMPIC GAMES

Fei Xu¹, Zhiyong Wang¹, Hairong Zhou¹, Qing Ye¹, Xin Hong¹, Jie Tao², Cui Lin Xu³, Youfa Wang⁴
¹Nanjing Municipal Center for Disease Control and Prevention, ²Nanjing Institute for Primary and High School Health Care, ³Nanjing Yuhuatai District Center for Disease Control and Prevention, Nanjing, China, ⁴University at Buffalo, State University of New York, Buffalo, United States

Background and aims: A legacy project of the 2nd summer Youth Olympic Games was conducted aiming at childhood obesity prevention through physical activity (PA) promotion in Nanjing, China, between 9, 2013 and 6, 2014. This paper reported the project effects.

Methods: Graders 4 and 7 in 48 primary and high schools from 8 districts were randomized into either intervention or control group at school level. PA was assessed with validated questionnaire, while body weight and height were objectively measured. Main outcome variables were changes in PA and BMI value.

Results: Overall, 9 858 of the 10 091 eligible students completed the follow-up. There was no significant difference between either control and intervention groups at baseline or those completed and not completed the study in terms of age, gender, BMI and parental education. Compared to the control, intervention group was observed having smaller change in Mean BMI (intervention vs. control = 0.22±1.23 vs. 0.46±1.67 kg/m²; p<0.05) and significant increase in PA (intervention vs. control = 169.05±6626.03 vs. -133.91±6803.73 MET.min/week; p<0.05).

Conclusions: The school-based PA promotion might be effective in childhood obesity prevention in the educational, cultural and social context of China.

Keywords: Childhood obesity, China, Physical activity
Background and aims: Poor control of type 1 diabetes is associated with complications and haemoglobin A1c (HbA1c) levels correlate with complications of diabetes. HbA1c testing can be conducted at a laboratory or at the point of care (POC). POC test results are available immediately, thus management decisions are made straightaway. We assessed if using POC HbA1c will reduce HbA1c levels and number of diabetic ketoacidosis (DKA) episodes.

Methods: In January 2014, a POC HbA1c testing device was donated to the hospital, reagents for POC tests were provided for a year. Hospital records of children with type 1 diabetes who attended the diabetes clinic in 2014 were then reviewed and information obtained on laboratory HbA1c, at baseline and after 12 months, and episodes of DKA in the 12 months prior to January 2014 and episodes in 2014.

Results: In all, 27 children’s records were studied. Their mean age was 141.52 ± 49.45 months (mean ± SD). Mean laboratory and POC HbA1c levels at baseline were similar, 12.56 ± 3.08 and 12.48 ± 3.02 respectively. Mean laboratory HbA1c levels of the children after 12 months were slightly lower than the baseline levels at 12.43 ± 3.04 (not significant). Mean change in laboratory HbA1c over the 12 months was −0.13 ± 1.54; this was significant on paired-test.

The mean number of DKA episodes among the children was significantly lower in the last 12 months compared with the mean in the preceding 12 months (p < 0.01).

Conclusions: Immediate counselling and management decisions associated with POC HbA1c seemed to decrease the number of DKA episodes but had no effect on HbA1c levels.

Keywords: children, point of care HbA1c, type 1 diabetes
EFFECTIVENESS OF THE WEIGHT MANAGEMENT PROGRAM IN OBESE PATIENTS

Irina Martynova¹, Irina Vinyarskaya*¹, Vladislav Chernikov¹, Leyla Namazova-Baranova²

¹Laboratory of Social Paediatrics, ²Vice-director, Scientific Centre of Children’s Health, Moscow, Russia

Background and aims: To evaluate the effectiveness of the weight management program in obese patients at the outpatient stage of treatment.

Methods: The analysis included 60 patients diagnosed with obesity, from 8 to 18 years. Body mass index (BMI) was calculated and assessed individually according to the standards for a specific age and gender, and presented in standard deviation scores (SDS). BMI SDS ≥+2δ was considered as a diagnostic criteria for obesity. Quality of life (QOL) of the patients with obesity was assessed using the PedsQL 4.0 Generic Core Scale before and after the program.

Results: After completing the program there was a decrease of 0,19 in BMI SDS among obese children from 8 to 12 years. Such aspects of QOL as emotional functioning, school functioning and the total score (74,58±7,7 vs 68,5±9,7, p<0,05) improved compared to the interview before the program. Correlation analysis showed a strong link between the level of emotional functioning and BMI SDS (r=-0,5, p=0,05). The results of the study among the adolescents showed a decrease of 0,27 in SDS and quality of life enhancement compared to the interview before the program in physical functioning, social functioning and the total score (79,2±7,2 vs 72,3±15,4, p<0,05).

Conclusions: The study proved the effectiveness of the weight management program for obese patients according to objective criteria and improvement of QOL.

Keywords: Obesity, Quality of life, weight management program
HEMODYNAMIC RESPONSE TO THE SUBMAXIMAL AEROBIC EXERCISE IN ADOLESCENTS WITH OBESITY

Anna Pogodina¹, Lyubov Rychkova¹, Alexandra Mashanskaya¹, Lyubov Danyluk¹
¹Scientific Centre for Family Health and Human Reproduction Problems, Irkutsk, Russia

Background and aims: To evaluate the hemodynamic response to the aerobic exercise in adolescents with obesity.

Methods: One hundred and thirty-six adolescents aged 12-18 underwent submaximal treadmill test. They were divided into 4 groups: 1a - obesity and arterial hypertension (AH) (n = 51), 1b - obesity and normal blood pressure (BP) (n = 40), 2a - normal body weight and AH (n = 22) and 2b - control group (CG) (n = 23). Body mass index (BMI) and standard mean deviations (SDS) BMI were determined. The values of HR and BP were recorded before test and after each of two exercise stages. Changes of each parameter through all workload were assessed as well.

Results: Children in all groups had a comparable based HR. After the first load step in both groups obese children the HR became much higher than in CG (p₁₁b = 0.02; p₁₂b = 0.02). After the second step HR became much higher in obese children than in loan children with AH (p₁₂a = 0.007; p₁₂b = 0.006; p₁₂a = 0.009; p₁₂b = 0.005) and obese children who hadn’t had AH before, obtained much higher levels of SBP and pulse BP than that of the CG (p₁₂b = 0.02).

Conclusions: Hemodynamic response to the aerobic exercise in adolescents with obesity is specified by early and a significant increase in HR unlike that of children with normal weight. Further increase of exercise duration and intensity for obese children is accompanied by significantly higher SPB and PP levels unlike healthy children.

Keywords: adolescents, body mass index, exercise testing, obesity, treadmill
Endocrinology, Diabetes, Obesity

PUBERTAL BREAST DEVELOPMENT IN PRIMARY SCHOOL GIRLS IN SOKOTO, NORTH-WEST NIGERIA.

Omoshalewa Ugege1, 2, Kareem Airede3 on behalf of All authors, Anjumanara Omar4 on behalf of All authors, Orit Pinhas-Hamiel5 on behalf of All authors, U Chikani5 on behalf of All authors, Paul Ibitoye1 on behalf of All authors, Asmau Adamu1 on behalf of All authors, Fatimah Jiya-Bello1 on behalf of All authors, Khadijat Isezuo1 on behalf of All authors, Joy Legbo1 on behalf of All authors, Maryam Sanni1 on behalf of All authors and None1 Paediatrics, Usman Dan Fodiyo University Teaching Hospital, Sokoto, Nigeria, 2Paediatric Endocrine & Diabetics Unit, Edmund & Lily Children’s Hospital, Sheba Medical Centre, Sheba, Israel, 3Paediatrics, University of Abuja, Abuja, Nigeria, 4Paediatrics, Kenyatta National Hospital, Nairobi, Kenya, 5Paediatrics, University of Nigeria Teaching Hospital, Enugu, Nigeria

Background and aims: There is a wide variation in the normal pubertal timing among various populations. We aimed to establish the mean age of pubertal stages of breast development, and menarche and to determine the influence of nutrition and ethnicity on pubertal onset

Methods: This was a descriptive and cross-sectional study conducted between December 2014 and March 2015. The study subjects were 994 girls in primary 3 to 6, selected by multistage random sampling from 14 schools in three Local Government areas of Sokoto, northwest, Nigeria. Weight and height were taken and BMI calculated for all subjects. Breast staging was done according to the method described by Marshall and Tanner. Statistical analysis involved Chi square test and Analysis of variance (ANOVA). Probability (p) values≤0.05 was taken as statistical significance.

Results: The study subjects were aged 6-15 years; mean age ± standard deviation (SD) was 10.23± 1.70. Majority- 628 (63.2%) was pre-pubertal. Only 366(36.8%) were pubertal, of which 158(15.9%) were in breast stage 2, 112(11.3%), 70(7.0%), and 26(2.6%), were in breast stage 3, 4 and 5, respectively. The mean age ± SD (range) of pubertal onset and menarche were 10.50 ± 1.33(8-13), and 12.67± 1.65(11-15) years. The overweight/obese and Igbo ethnic group girls had early-normal pubertal onset (p=0.014, p=0.001).

Conclusions: The mean age of Tanner breast stages 1-5 and menarcheal age in Sokoto, North-West Nigeria, were within the age range reported worldwide. Pubertal onset was influenced by nutrition and ethnicity.

Keywords: Breast development, Primary school girls, Pubertal
SMALL FOR GESTATIONAL AGE (SGA) & NEONATAL COMPLICATIONS IN INFANTS OF MOTHERS WITH PRE-GESTATIONAL (PRE-GDM) IN COMPARISON TO GESTATIONAL DIABETES MELLITUS (GDM) FROM SOUTH INDIA

Elizabeth Jacob* 1, 2, Sourabha R1, Sobhakumar S1
1Pediatrics, Medical College, Thiruvananthapuram, 2Kerala State, Indian Academy of Pediatrics, Thiruvananthapuram, India

Background and aims: Pre-GDM can affect early fetal organogenesis more than GDM. Comparative outcome not known. Hence, fetal outcome in the 2 groups studied.

Methods: Outcome of 210 infants born to mothers with GDM, enrolled <28 weeks of gestation estimated. Mode of delivery, birth weight, gestational age, congenital anomalies, neonatal events, NICU admission recorded.

Results: 11% pre-GDM & 89% GDM. All pre-GDM & 63% GDM on insulin. Infant mortality 1.9%. M: F ratio 52:48. Preterm birth- 24% & CS- 33%; comparable in 2 groups. Significant difference in: NICU admission -61% & 42%; hosp rate 22%, LGA-9% & 6%; hosp rate 0.5%. SGA 74% & 6%; hosp rate 20%, Congenital anomalies 13% & 1.6%; 4 CHD, 1 Down syndrome with CHD & 1 ectodactyly; RDS 30% & 13, MSAF-13% & 9%, Hypoglycemia-13% & 4%, Hyperbilirubinemia- 9% & 12%. Hypocalcemia-2, sepsis-2, birth asphyxia-2 & birth injury-4 in GDM only. Birth injury in LGA babies born by vaginal route; 1 fracture clavicle & 3 Erb’s palsy. NICU admission & anomalies more with poor glycemic control.

Conclusions: Babies born to mothers with pre-GDM & GDM vary with respect to outcome. Contrary to LGA, SGA was high. Detection of pre-GDM and glycemic control recommended for better outcome.

Keywords: Infant of Gestational Diabetes Mellitus (IGDM)
THE EFFECTIVENESS AND SAFETY OF TREATMENTS USED FOR POLYCYSTIC OVARIAN SYNDROME MANAGEMENT IN ADOLESCENTS: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

Reem Al-Khalifah¹, Ivan D. Florez* ², ³, Brittany Dennis², Juan P. Diaz-Martinez², Lehana Thabane², ⁴, Ereny Bassilious⁴

¹Department of Pediatrics, King Saud University, Riyadh, Saudi Arabia, ²Department of Clinical Epidemiology & Biostatistics, McMaster University, Hamilton, Canada, ³Department of Pediatrics, Universidad de Antioquia, Medellin, Colombia, ⁴Department of Pediatrics, McMaster University, Hamilton, Canada

Background and aims: Treatment approaches for polycystic ovarian syndrome (PCOS) are variable among specialists because of limited evidence. We aimed to determine the comparative effectiveness of all available interventions for adolescents with PCOS through a systematic review and network meta-analysis (NMA)

Methods: Systematic review of all RCTs evaluating metformin, oral contraceptive pills (OCP), pioglitazone, spironolactone, flutamide, and lifestyle (monotherapy or combinations) for the PCOS treatment in patients from 11-19 years. We searched Medline, Embase, CENTRAL and grey literature. Our outcomes were menstrual regulation, hirsutism, dysglycaemia, acne, body mass index (BMI). Review was performed in duplicate. We performed NMA using Bayesian fixed-effects model and calculated effects estimate with 95% credibility intervals (Crl)

Results: We included 45 RCTs with 2324 patients. Compared to metformin, OCPs resulted in not statistically significant improvement in menstrual frequency (mean difference [MD]=0.32; -0.17, 0.80) and increased prevalence of dysglycaemia (odds ratio [OR]=3.57; 1.43, 3.23). Compared to metformin alone, hirsutism improved with OCP (MD=2.5; 2.49, 2.50), and OCP+Metformin (MD=2.07, 95%CrI= 0.15, 4.04). Metformin reduced BMI compared to OCP (MD=1; -1.02, -0.98), OCP+Metformin (MD=0.43; -0.62, -0.25), Metformin+Flutamide (MD=0.59; -0.63, -0.57), and pioglitazone (MD=1.55; -2.11, -0.99)

Conclusions: Current evidence shows modest reduction of hirsutism scores with OCP, no significant improvement in menstrual frequency, increased dysglycaemia risk, and reduced BMI with metformin

Keywords: Adolescents, metformin, oral contraceptives, PCOS, Systematic Review
THE EFFECTS OF GONADOTROPIN RELEASING HORMONE AGONIST IN GIRLS WITH CENTRAL PRECOCIOUS PUBERTY AND EARLY PUBERTY

Jong Duck Kim* 1, Dong-Seop Kim 1
1Pediatrics, Wonkwang University, College of Medicine and Hospital, Iksan, Korea, South

Background and aims: This study was performed for comparison the effects of gonadotropin releasing hormone agonist(GnRHa) in girls with central precocious puberty(CPP) and early puberty(EP) during 2 years.

Methods: The patients were categorized by 2 groups, such as 29 girls with CPP(aged 7.2±0.58) and 21 girls with EP(aged 8.4±0.29). The GnRHa therapy was done for 2 years. Comparison in these groups were made of height standard deviation score(Ht-SDS), predicted adult height(PAH), target height(TH), variation of growth velocity(GV), body mass index standard deviation score (BMI-SDS), and the related hormonal values.

Results: The serum levels of estradiol in CPP and EP group was 8.10±5.39, 14.31±18.42 pg/mL respectively (p<0.02). The Ht-SDS of CPP and EP group was 1.53±1.05, 0.97±0.78 respectively after 1 year(p<0.02) and 1.44±1.23, 0.69±0.80 respectively after 2 years(p<0.008). The GV in CPP and EP group was 5.46±1.55, 4.76±1.24 cm/yr respectively after 2 year (p<0.027). The PAH was increased after 2 years in CPP group(p=0.0218) and EP group(p=0.0042). Compare TH with PAH before GnRHa treatment, PAH was low in CPP group(p=0.0031) and EP group(p=0.0021). But 2 years after GnRHa therapy, PAH was closed to TH in both groups.

Conclusions: The Ht-SDS, BMI-SDS, and GV were more decreased in EP group than that of CPP group after treatment. But, after GnRHa therapy for 2 year in these groups, PAH was closed to TH. So, GnRHa therapy was effective in both groups.

Keywords: Gonadotropin releasing hormone agonist, Central precocious puberty, Early puberty
THE FITBIT SYSTEM: A FEASIBLE TOOL TO PROMOTE HEALTHY BEHAVIOUR CHANGE IN OVERWEIGHT AND OBESE ADOLESCENTS?
Sarah Riedlinger¹, Shelly Keidar¹, Shazhan Amed²
¹University of British Columbia, Vancouver, Canada, ²Endocrinology, University of British Columbia, Vancouver, Canada

Background and aims: The rates of childhood and adolescent obesity are increasing. Technology based devices are potentially powerful tools to promote healthier habits in this patient population. We conducted a pilot study in 19 overweight and obese adolescents aged 13 – 18 years old to determine whether participants would use a Fitbit to monitor their health behaviors and set goals for behavior change.

Methods: Participants used a Fitbit System (wristband + app) for 6 months. Fitbit data was downloaded once a week. Online surveys were used to collect data about participants’ frequency of use, factors motivating use, goal setting, ease of use and enjoyment of using the system.

Results: Data collection is complete for 11 participants and in process for 8 (total N = 19; 8 female). Use of the Fitbit system decreased over time in terms of step count, sleep monitoring, and calories logged. Goal setting decreased progressively over the first 4 months. Only 45% of participants indicated they would continue using Fitbit beyond the study period.

Conclusions: Our preliminary results show a decrease in use of the Fitbit system over a 6-month period in terms of monitoring activity levels, sleep and calorie intake. Participants were also not motivated to set goals. This preliminary data indicates that the Fitbit alone is not a feasible tool to promote behavior change in this population.

Image:
Keywords: Activity tracker, Fitbit, obesity
CHILDREN'S ENVIRONMENTAL HEALTH CLINIC (CHEHC): A THREE YEAR SUMMARY OF PATIENT DATA

Lesley Brennan¹, Alvaro Osornio-Vargas¹, ², Alexander Doroshenko¹, ³, Jamal Tarrabain¹, Harold Hoffman¹, Donald Spady¹, Irena Buka*¹, ²

¹Children's Environmental Health Clinic, Misericordia Hospital, ²Pediatrics, ³Division of Preventive Medicine, University of Alberta, Edmonton, Canada

**Background and aims:** The Children's Environmental Health Clinic (ChEHC) is a unique program including clinical, research, and educational components dedicated to understanding and managing health concerns associated with environmental exposures. We see patients with a wide variety of health complaints and exposures. Our goal is to summarize patient characteristics from 2012-2014 to guide development of educational resources and research.

**Methods:** Patient information is collected through the use of a Paediatric Environmental Health History questionnaire (PEHH), which consists of over 150 questions. Clinical environmental data for all patients between 2012-2014 were compiled in a database. Referral sources, patient demographics, health issues and exposures were summarized.

**Results:** Our patient population is predominantly age 10 or younger (81%), from the greater Edmonton area (64%). Some Children presented with >1 health concern (22%). Respiratory (67%) and neurodevelopmental (22%) issues were commonest. Exposures commonly considered: indoor air (e.g. tobacco smoke, mold, dust, carbon monoxide), outdoor air (e.g. traffic/industry pollution), and lead. Less common exposures include pesticides, asbestos, cannabis, food additives, and radon.

**Conclusions:** Several health concerns and potential exposures per child are common. Respiratory issues and indoor/outdoor air pollution represent the main concerns, and will be reflected in future educational and research activities. Less common issues and exposures require special attention and resources to help fill gaps in knowledge.

**Keywords:** Children's Environmental Health Clinic (ChEHC), Clinical environmental paediatrics, Environmentally related disorders
EFFECTS OF E-WASTE EXPOSURE ON THE SYNTHESIS OF HEMOGLOBIN IN PRESCHOOL-CHILDREN

Lian Ma¹, Tianyou Wang²
¹Pediatrics Department, Women’s and Children’s Hospital of Shenzhen University, Shenzhen, ²Beijing Children’s Hospital, Capital Medical University, Beijing, China

Background and aims: The primary purpose of this study was to measure the effect of e-waste exposure on the synthesis of hemoglobin (Hb) in preschool children.

Methods: Two hundred and twenty-two children (aged from 3 to 7, exposure group) lived at Guiyu town and 204 children (aged from 3 to 7, control group) lived in a no e-waste polluted town were chosen to test their blood lead, Hb, ferritin, folate, vitamin B₁₂ levels and hemoglobinopathy, then fill the self-questionnaires by their parents.

Results: The blood lead levels (BLLs) and rate of BLLs ≥10ug/dL in exposure group were significantly higher than that in control group (all P <0.01). Three groups were divided according to BLLs. It can be seen that the levels of Hb were decreased along with elevated BLLs significantly in exposure group (F=3.52, P=0.03), however, not shown in control group (F=1.98, P=0.14). Furthermore, the prevalence rate of anemia along with BLLs ≥10ug/dL in exposure group was significant higher than that in control group (4.0% versus 0.5%, P <0.05), and the prevalence rate of anemia without BLLs ≥10ug/dL and iron deficiency in exposure group was significant higher than that in control group (6.5% versus 2.0%, P <0.05).

Conclusions: Different from the general environment, the lead exposure in e-waste area might aggravate the inhibition of synthesis of Hb, and other potential e-waste toxicants might also have a responsibility for it.

Keywords: anemia, Blood lead, Electronic waste, hemoglobin, Lead pollute, preschool children
FLAWS IN INDIANA AIR QUALITY SCIENCE
Norma Kreilein*1
1Grand Avenue Pediatrics, Daviess Community Hospital, Washington, IN, United States

Background and aims: Indiana officials insist air quality is improving and dispute the efficacy of tightened standards (Sabalow, IndyStar 5/17/15), but does Indiana air quality management employ sound science and adequately report industrial exposure?

Methods: Qualitative case-cluster analysis used to identify flawed pollution-data collection; metascientific analysis utilized to reveal false assumptions behind current exposure analysis.

Results: Data validity is compromised by paucity, mismatch, and industrial ownership of monitors, especially for noncompliant areas. Only 35/92 counties have state air quality monitors; 7/92 monitor SO2 and 3/92 monitor all 6 criteria pollutants. (Fig 1, in.gov/idem/airquality/2346.htm, www3.epa.gov/airquality/greenbk/anayo_in.html)

Official statements are not substantiated by actual data:
-“Air Quality in all 92 Indiana counties meets national standards for first time in state history” (secure.in.gov/portal/news_events/53714.htm)
-Indiana has significantly improved its air and water quality during the past decade, with nearly the entire state now in compliance with the previous ratcheting down of federal pollution limits. (attributed to Environmental Commissioner Tom Easterley nwi.com 10/30/13)

Conclusions: Serious scientific flaws exist in Indiana air quality management. Further study is needed to determine the extent of flawed science in industrial emissions assessment and its potential impact on the progress of public health benchmarks such as asthma, childhood cancer, and infant mortality.

Keywords: Air pollution, flawed science
**Environmental Health**

**PEDIATRIC HEALTH CONSEQUENCES OF CLIMATE CHANGE**

Patricia Allen*\(^1\) and Yale University School of Nursing

\(^1\)School of Nursing, Yale University, New Haven CT, United States

**Background and aims:** The IPCC, 2014, states "continued emissions of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems". The world’s population will feel the impact of climate change but it will be variable in severity and frequency based on geographic location, the local disruptions of the physical, biological, and ecological systems, and the resilience of critical public health infrastructure in the region.

**Methods:** A literature review was completed to identify the potential health consequences of climate change for children and youth.

**Results:** There will be direct impacts associated with increased temperature and extended heat events, health risks associated with extreme weather events and air pollution, and additional indirect health events due to droughts and food shortages, changing animal, fish, and insect habitats, and waterborne and food-borne diseases associated with increased temperatures. Food and water availability/scarcity may lead to population migration and governmental conflict further increasing the risk to human health.

**Conclusions:** Pediatric providers should add their voices to the public and political discourse on climate change. This is not just a political issue. It is a health problem, and as pediatric health care providers we need to be actively involved in promoting the public health benefits of controlling greenhouse gases.

**Keywords:** Air pollution, Allergies, Climate Change, Extreme weather events, Geopolitical risks, Mental health, Vulnerable pediatric population
Environmental Health

REGULATORY APPROACHES TO PEDIATRIC ENVIRONMENTAL HEALTH
Brenda Foos¹, Kathleen Schroeder¹, Ruth Etzel¹, Rebecca Dzubow¹, Suril Mehta¹, Emma Rosen²
¹United States Environmental Protection Agency, Washington, DC, ²Rollins School of Public Health, Emory University, Atlanta, United States

Background and aims: Government regulations are an important component of pediatric environmental health and an effective method of primordial prevention. Pediatricians counsel about environmental risks, but primordial prevention is an approach that reaches beyond the clinical encounter.

Methods: We survey areas of pediatric environmental health where regulatory action serves as primordial prevention. Three influential examples of environmental regulation and attendant children’s health effects are explored in detail: 1) Elevated lead exposures are known to cause cognitive impairment, lowered IQs, and low birth weight; government regulatory actions lower lead concentrations in air, drinking water, indoor environments, and contaminated lands; 2) Pesticide exposure to children can cause neurodevelopmental deficits as well as other adverse health effects; governments limit pesticide uses impacting children; 3) Air pollution leads to exacerbations of asthma and other childhood morbidities; government actions to reduce ambient air pollution improve children’s health.

Results: National-level primordial prevention of environmental health risks, including those associated with lead, pesticide, and air pollution exposure, decreases illness in children. Although examples are based on experience in the United States, these environmental health and prevention concepts are transferable internationally.

Conclusions: Regulatory approaches to reduce environmental health risks are a form of primordial prevention. It is valuable for pediatricians to be involved in and aware of governmental actions.

Keywords: Air Quality, Asthma, Blood lead levels, Children’s Health, Environmental Health, Pesticides
SCORPION STING IN CHILDREN – STILL AN ENVIRONMENTAL HEALTH HAZARD
Mallanagouda Patil¹, Bhavana Lakhkar¹ and Department of Pediatrics BLDE University Shri BM Patil Medical College Hospital & Research Centre Vijayapur Karnataka India
¹Pediatrics, BLDE University Shri BM Patil Medical College, Vijayapur, India

Background and aims: Scorpion sting is a very common problem in rural areas of Vijayapur. The present study aims to identify prognostic factors and presents experience of using drug Prazosin hydrochloride (Prazosin) at higher initial dose (80-90 microgram/kg) in scorpion sting envenomation.

Methods: A retrospective study. Case records of 40 cases of scorpion sting envenomation were reviewed. Risk factors were correlated with outcome. Safety and utility of accidental administration of high dose of Prazosin was studied.

Results: Local pain, profuse sweating, vomiting, cold extremities were common presentations. Six patients had myocarditis and one had neurological involvement. One patient was brought dead. Age of patient, time interval between symptoms and treatment, use of steroids and other drugs were main risk factors. High dose Prazosin reduced the time for first response (p=<.001), total recovery time (p=<, 001), Pediatric Intensive Care Unit stay (p=<.001) and use of inotropes (P=0.042).

Conclusions: Outcome was worse when: age of the patient was less, brought late, other drugs were administered. High dose Prazosin is useful and safe in severe cases of scorpion sting envenomation in the resource poor settings.

Keywords: None
Environmental Health

SEASONAL IMPACT ON ACUTE CHILDHOOD POISONING
A K M Mamunur Rashid¹, Razia Sultana²
¹Pediatrics, ²Skin & VD, Khulna Medical College, Khulna, Bangladesh

Background and aims: Acute Poisoning is a common medical emergency in pediatric population. This was a retrospective study to observe the seasonal variation of acute poisoning in children in a tertiary level hospital.

Methods: This study was done in a pediatric unit of medical college hospital. Age range was 1 to 12 years. The records of acute poisoning admitted in pediatric unit were studied to observe the seasonal variations including other epidemiologic and clinical parameters. Prevalence and type of poisoning was observed in winter, spring, summer and rainy seasons respectively.

Results: A total of 193(4.7%) cases of childhood acute poisoning were admitted in a year. Out of them 107(55.4%) cases were male and rest 86(44%) were female. 1-3 years was the most vulnerable age group to be affected in our setting (P<.005). Kerosene was the commonest form of ingredient used. Poisoning cases were more common during summer season (P<.005). Overall mortality rate was 4.66%.

Conclusions: Poisoning was common during the summer season and kerosene was found to be most common ingredient. It was possibly due to easy availability of kerosene and during the summer months thirsty children took this substance which was sometimes kept in the discarded container of soft drinks and mineral water bottles etc. People should be warned not to keep these toxic ingredients in such containers and within reach of the children.

Keywords: None
Environmental Health

THE CHANGE OF CHILDHOOD BLOOD LEAD LEVELS IN 11 CITIES OF CHINA FROM 2004 TO 2013
Tao Li¹, Yaohua Dai¹, Zonghan Zhu²,³, Shuaiming Zhang¹
¹Capital Institute of Pediatrics, ²Expert Committee of National Program on YYB, ³Maternal and Child Health Care of China Association, Beijing, China

Background and aims: There is not a safe concentration of lead to human health. Although the average BLLs of children decline were observed in China, children’s exposure to lead is still common. Now, we use the data to show the change feature of childhood blood lead levels in China.

Methods: Children were selected from 11 cities using a stratified multistage probability sampling, from 2004, 2007, 2010 and 2013. Data and capillary blood sample was collected. Geometric means (GM) were used to shown average blood lead level.

Results: The GM BLLs deceased from 46.38μg/L, 43.58μg/L, 38.95μg/L to 37.17μg/L (P<0.0001), and the peak values of BLLs moved to left continuously along with these 4 time points (Figure 1). The percentage of children whose BLLs were equal or more than 60μg/L dropped obviously, oppositely the percentage of children whose BLLs were in 20-59μg/L increased. However, stable percentage (around 10%) was revealed for children whose BLLs were less than 20μg/L in all 4 time points.

Conclusions: The decreasing of blood lead level of children aged 0-6 years old in China in past 10 years were due to the decrease of children with high BLLs (>100μg/L). However, those children with middle level increased, which were easily neglected and should be paid more attention. The prevention guideline of children lead poisoning should be modified.

Image:
Figure 1. The distribution of childhood BLLs in cities of China in 2004, 2007, 2010 and 2013

Keywords: Blood Lead, Children, China, Lead Exposure
“READ TO SUCCEED”: LITERACY PROMOTION AMONGST HIV EXPOSED BUT UNINFECTED INFANTS
Laura Sauve*1,2, Allison Nutter1, Meghan Gilley1, Ariane Alimenti1,2
1Pediatrics, University of British Columbia, 2Oak Tree Clinic, BC Women’s Hospital, Vancouver, Canada

**Background and aims:** HIV exposed uninfected infants (HEU) are at risk for adverse developmental outcomes. Evidence shows that social determinants of health play a larger role than does HIV. Reading to children promotes language development and promotes literacy and educational attainment. At a family focused interdisciplinary HIV clinic with many vulnerable families, an evidence based literacy program started in 2013 with pediatrician literacy counseling, provision of free books and a volunteer reader role modeling and reading with children in the waiting room.

**Methods:** A brief quality improvement survey to assess the perceived value of the project was administered to 28 families with children aged 0-18 years and 16 of 25 clinic staff (clinical, clerical and research), two years into the program.

**Results:** There were 51 HEUs aged 6 weeks to 16 years old from 28 families. Half were reading more than once weekly with their children. 32% of children had seen the reading volunteer. 68% of families received books; 11% reported reading more often because of the free books. 13% of parents reported that their own literacy was too poor to be able to read with their children. The majority of the 16 clinicians (81%) reported speaking with families about literacy. Staff suggested having a greater variety of language and cultural books and increasing volunteer hours.

**Conclusions:** Pediatrician counseling and provision of free books can promote language and literacy development in an at-risk population; this intervention is well liked by both families and staff and all those interviewed felt that the program should continue.

**Keywords:** HIV, literacy, social determinants of health
Background and aims: The enzyme involved in regulating the size of von Willebrand factor in plasma is ADAMTS13. Reduced ADAMTS13 activity has been observed in severe sepsis and is associated with poor survival. Our objectives were to assess the ADAMTS13 level in pediatric patients with severe inflammation.

Methods: Cross-sectional study included children with different localization of infection. A complete blood count and inflammatory markers determined by standardized methods. ADAMTS13 was assayed by ELISA Quantikine Human ADAMTS13.

Results: A total of 54 patients were included in the study, 22 girls (40.7%) and 32 boys (59.3%). Systemic inflammatory response syndrome (SIRS) was documented in 31 (57.4%) patients. ADAMTS13 levels were established in 47 (87.3%) children, mean level was 679.74 ng/ml, which was significantly lower than the manufacturer's normal mean (difference -305.26, 95% CI -345.24 - -265.28; p<0.001). SIRS positive patients had lower level – mean difference 102.86 ng/ml (95% CI 26.44 to 179.27; p=0.009). A negative correlation was established between the ADAMTS13 level and markers of inflammation: CRO (Pearson r=-0.338; p=0.02), IL-6 (Pearson r=-0.379; p=0.009) and PCT (Pearson r=-0.483; p=0.001) concentrations in serum.

Conclusions: ADAMTS13 concentration norm for children is unknown. In this study, children had significantly lower levels of ADAMTS13 range than in healthy adult. The lower level of ADAMTS13 was associated with higher markers of inflammation and SIRS. Further we needed to determine the ADAMTS13 range of healthy children, as well as the correlation with other disease severity indicators.

Keywords: ADAMTS13, SIRS
ANALYSIS OF LIVER TRANSPLANT PATIENTS IN A PEDIATRIC UNIT AT HOSPITAL GARRAHAN, ARGENTINA

Roxana Martinitto* 1 and Lauferman,L; Iglesias,V; Solari,A, Messina,J, Latella,A.; Halac,E, Dip,M, Aredes,D. Cervio,G.; lmventarza,O

1Pediatric, Hospital J.P. Garrahan, Buenos Aires, Argentina

Background and aims: We report the immediate postoperative course of pediatric liver transplant (PLT) patients at a center in Argentina. The need to provide solutions to the admission of children after liver transplant recovery in ICU led to their placement in a specialized pediatric clinic room.

Methods: A retrospective, descriptive analysis of the postoperative course of PLT recipients from January 2012 to January 2016 was conducted. The following variables were analyzed: age, weight, sex, underlying disease, length of stay, complications and survival.

Results: 148 PLT were performed on 139 children, 8 acute retransplants, 57% were women, the average age was 63 months (range 4-236) and median 25, average weight 20 kg, median 12. The etiology: BA 37%; ALF 18% and 18% cirrhosis, 9% chronic rejection in transplant patients and 7% tumors. 27 were living donor related transplants. The average length of stay after ICU was 27 days, with a median of 19 days. 64 patients had one or more episodes of rejection, 62.5% had surgical complications, with biliary complications as the most common cause. 33 patients had CMV infection (8 disease), 42 EBV infection with 4 lymphoproliferative disease. 22 patients had bacteremia. The 1 year survival was 86% while the overall survival was 83.5%.

Conclusions: The development of specialized units in support of these patients promotes increase survival and quality of life. Due to the complexity of the procedure, the high incidence of rejection, high morbidity and mortality, associated infections and surgical complications, it is essential to appropriately train the pediatricians who attend these children.

Keywords: Pediatric liver transplant, internal unit, pediatric internal pediatric
General Pediatrics

ASSESSMENT OF SEVERITY OF ACUTE GASTROENTERITIS IN PEDIATRIC POPULATION BY MODIFIED VESIKARI SCORE – THE MANDATE STUDY

Muhammad Ashraf Sultan¹, Zeeshan Hassan²

¹Pediatrics, King Edward Medical University, Lahore, ²Medical Education, Sanofi, Karachi, Pakistan

Background and aims: This study aimed to assess the severity of Acute Gastroenteritis (AGE) in pediatric population by Modified Vesikari Score (MVS) in Pakistan.

Methods: This observational cross-sectional study was conducted between July 2014 and January 2015 in 93 randomly selected outpatient centers with pediatric practice across Pakistan. Children with AGE, between 3 – 48 months of age were included. Severity of AGE was measured using MVS.

Results: One thousand seven hundred and fifty six (1756) patients were enrolled in the study. The mean (±SD) age of study population was 18.6 (±12.0) months. There were 220 children ≤ 6 months, out of which 33% were exclusively breastfed. Majority of the children had moderate (59.3%) and severe (22.9%) AGE. Most (79.8%) care-givers were females {child’s mother (77.1%)} with mean age of 29.7 (±6.7) years. Oral rehydration solution (ORS: 77.3%), plain water (61.7%), antipyretics (44.6%) and anti-diarrheals (36.7%) were the most common fluids and medicines administered at home by the care-givers. Mean duration between gastroenteritis onset and seeking consultation was 2.7 (±1.7) days. Most common treatments provided by physicians were ORS (82.6%), antibiotic (73.7%) and probiotic (62.9%). Worsening of symptoms (65.6%) was the most common reason for seeking consultation.

Conclusions: Most children with AGE assessed in Pakistan had moderate to severe disease.

Keywords: acute gastroenteritis, Pakistan, Pediatric, study
BLOOD BORON LEVELS AND NUTRITIONAL STATUS IN CHILDREN

S. Songül Yalçın¹, Suzan Yalçın*²

¹Department of Social Pediatrics, Faculty of Medicine, Hacettepe University, Ankara, ²Department of Food Hygiene and Technology, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey

Background and aims: This study was conducted to assess the levels of blood boron levels in West and Central Anatolia Region, Turkey and their relationship with presence of anemia and body mass index of children in Turkey.

Methods: In a cross-sectional study, children aged 8-9 years were selected randomly with household sampling. Hemoglobin levels were analysed. Blood boron levels were measured using inductively coupled plasma mass spectrometry (ICP-MS). Nutritional status was determined and Z-scores of body mass index were calculated (BAZ).

Results: In the study 2247 children were enrolled. Of all, 51% were male 13.7% were overweight and 6.8% obese. Low Hb levels were found in 4.7%. The mean concentration of blood boron levels was 15.2 µg/l (interquartile range: 10.9-18.3 µg/l). Children in urban areas had significantly higher boron levels than that in rural areas. Children in West Anatolia Region had significantly lower boron levels than that in Central Anatolia. Blood boron levels did not change with maternal education, occupation, child’s gender and anemia. Elevated blood boron levels were significantly associated with higher BAZ.

Conclusions: Blood boron levels change with region. Further studies are necessary to evaluate the effects of boron on nutritional status in children.

This study has been supported by TUBITAK SBAG-107S407

Keywords: boron, children, Nutritional Status
Background and aims: To explore the clinical characteristic and prognosis of the JDM by the retrospective study to the clinical manifestation, auxiliary examination, treatment and follow-up result.


Results: There were 91 male and 109 female in the 200 cases. The male to female ratio was 1:1.2. Rash was the most common initial presentation. The main clinical manifestations were cutaneous features (100%) and muscles weakness (96%). The most common internal organs involved by JDM were lung (57.5%), digestive tract (38.5%) and heart (32.5%). Muscle enzymes elevated in 95.5% of the patients. In the treatment, all of the patients were treated by steroids plus immunosuppressive agents. The patients got better therapeutic effect and outcome. There were 9 patients died, and acute respiratory failure is the most common cause of death. The patients who had long term complications accounted for 17.8%.

Conclusions: JDM is a rare disease of children, and is characterized by the muscle weakness and cutaneous rash. The internal organs involvement, which can cause death when serious, is common in the JDM. The treatment using corticosteroid combined with immunosuppressive agents is effective, and the outcome of the JDM is fairly good.

Keywords: Follow up, Clinical features, Juvenile dermatomyositis
General Pediatrics

CLINICAL FAILURE OF OUTPATIENT MACROLIDE’S TREATMENT IN CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIAE AND ACUTE OTITIS MEDIA IN RUSSIAN FEDERATION.

Tatiana Khokhlova¹, Maya Bakradze¹, Vladimir Tatochenko¹, Anna Lazareva², Lubov Katosova²
¹Diagnostic's department, ²Laboratory of microbiology, Scientific Centre of Children's Health, Moscow, Russia

Background and aims: To evaluate the effectiveness of outpatient macrolide’s use in children with acute otitis media (AOM) and community-acquired pneumonia (CAP).

Methods: Observational study of children with hospital-verified diagnosis, treated with macrolides. Treatment failure was determined as persistence of febrile fever after two full days of therapy.

Results: Antibiotic therapy prior of hospitalization was started in 93 of 160 children with CAP with alveolar infiltrates on X-ray (excepting Mycoplasma pneumoniae) and in 101 of 225 with AOM. Of children treated with antibiotics macrolides received 27 (29%) and 31 (31%) respectively. The rest were started with β-lactams. No clinical effect on children treated with β-lactams was noted only in 8 patients (5.8%), because of low doses of amoxicillin or amoxicillin/clavulanate (below 40 mg/kg/day). At the same time 92% of patients with CAP and 84% of children with AOM who received macrolides for more than 2 days stays febrile; they were switched to β-lactam drugs with quick effect.

Conclusions: Our results are consistent with a rapid increase in resistance of S.pneumoniae to macrolides in the last 5 years from 10 to 40% in Russia. The widespread practice of Russian pediatricians to use macrolides in respiratory infections calls for urgent educational and administrative measures

Keywords: acute otitis media, community-acquired pneumonia, macrolides
GENERAL PEDIATRICS

CLINICAL MANIFESTATIONS AND DYNAMICS OF CO-MORBIDITY IN CHILDREN WITH BRONCHOPULMONARY DYSPLASIA – LONGITUDINAL CLINICAL STUDY

Kazakova Klavdia 1, Yrii Akoev 1, Alla Migali 1, Irina Davydova 2, Leyla Navazova-Baranova 3

1Department of Pathology of early childhood, 2Department of Rehabilitation young children with consequences of perinatal pathology, 3Director of the Institute of Pediatrics, FSBI “SCCH” of the Ministry of Health of the Russian Federation, Moscow, Russia

Background and aims: To characterize the structure and incidence of co-morbidity in patients with bronchopulmonary dysplasia (BPD) during first 3 years of life.

Methods: Retrospective analysis of 86 case histories of patients with BPD was performed. Age of children was between 2 month and 3 years old. Statistical analysis was done by means of SPSS 20.0 (SPSS Statistics, USA).

Results: Retinopathy, anemia, protein-calorie malnutrition, cardiovascular problems and central nervous system disorders were the most common forms of co-morbidity. Anemia decreased from 28% initially to 3,4% at the age of 2 and to 7,6% at the age of 3 years old (p<0.05). Protein-calorie malnutrition was slightly reduced (47,7% at 1 year and 38.4% at 3 years, non significant difference, p>0.05). Perinatal neurologic problems were the most common form of co-morbidity of BPD reduced from 86.3% at 1 year of age to 53,8% at 3 years (p<0,05). Psychomotor retardation was common (84.6%). Pulmonary hypertension and Cor pulmonale at the age of 2 years were detected in 34,4% and 17,2% patients respectively without evident dynamics.

Conclusions: The frequency of comorbidities varies with age, the 3rd year of life of BPD patients is mostly accompanied by growth deficiency, psychomotor retardation and perinatal neurologic problems.

Keywords: None
Background and aims: Diffusion-tensor imaging (DTI) and tractography can be used to investigate alterations in white matter tracts in patients with cerebral palsy (CP). We estimate structural changes in motor and sensory pathways of brain in children with CP using DTI.

Methods: This study included 105 children with cerebral palsy (47 with spastic quadriplegia, 35 with spastic diplegia, 23 with spastic hemiplegia) and 50 healthy patients, mean age 50±28 months. We compared DTI parameters: fractional anisotropy and average diffusion coefficient between the groups and correlated each value with scale of Gross Motor Function Classification System (GMFCS).

Results: The distribution of GMFCS levels in the group of CP was: I - 18 (17.1 %), II - 21 (20 %), III - 14 (13.3 %), IV — 9 (8.6 %), V- 43 (41 %) patients. Both tracts showed dissimilarities in structural changes, DTI parameters and statistically significantly (p < 0.001) correlated with the severity of motor impairment on the GMFCS scale.

Conclusions: DTI enables to adequately assess microstructural white matter changes and structural-functional state of motor and sensory pathways, allows to predict the development of children with cerebral palsy.

Keywords: Cerebral palsy, Children, Diffusion-tensor imaging, MRI, scale of GMFCS
COMMON PRESENTING SIGNS AND SYMPTOMS OF CHILDREN AND YOUNG PEOPLE WITH CANCER: A CASE CONTROL STUDY

Heather Kitt1, Paul Campbell1, Ying Chen1, Christian Mallen1, Kate Dunn1

1Institute for Primary Care and Health Sciences, Keele University, Stoke-on-Trent, United Kingdom

Background and aims: Childhood cancer is rare (18 cases per 100,000), yet it is the leading cause of disease-related death in children in the developed world. Diagnostic delays may contribute to poorer outcomes, and understanding how children first present to healthcare providers may help reduce diagnostic delays.

Aim: To identify first presenting signs and symptoms of childhood cancer.

Methods: A population based case-control study nested in a UK primary care medical record database. 315 young people aged 0-24 years diagnosed with cancer were matched to 1264 controls. Records were searched for 30 predetermined signs and symptoms during the year prior to diagnosis, and comparison between cases and controls made.

Results: 901 children presented with the predetermined symptoms, the most common being infection. Eight were associated with a significantly increased likelihood of cancer: abdominal pain (OR 1.46; 95% CI 1.03, 2.1), bone pain (1.41; 1.12, 1.9), lymphadenopathy (2.65; 1.51, 4.65), masses (3.39; 2.2, 5.1), common infections (1.3; 1.06, 1.8), nausea / vomiting (1.51; 1.04, 2.1), general malaise (1.68; CI 1.06, 2.66) and sweating (2.58; 1.02, 6.71). The odds of cancer diagnosis for these symptoms increased with increasing number of visits.

Conclusions: These 8 symptoms are associated with increased odds of receiving a cancer diagnosis, and when considered in light of repeat visits, warrant careful evaluation. This will help physicians select children for further investigation with the intention of reducing diagnostic delays in childhood cancer diagnosis.

Keywords: cancer, case-control study, children, epidemiology, medical records, Primary health care, Young persons
DETERMINANTS OF EARLY INITIATION OF BREAST FEEDING IN SUB SAHARAN AFRICA: A MULTILEVEL APPROACH

S. Songül Yalçın¹, Anselm S Berde², Suzan Yalçın³
¹Department of Social Pediatrics, ²Department of Public Health, Faculty of Medicine Hacettepe University, Ankara, ³Department of Food Hygiene and Technology, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey

Background and aims: The study aimed to provide the general picture of Early Initiation of Breastfeeding (EIBF) in Sub Saharan Africa (SSA) and associated factors at the individual and country levels.

Methods: Data from the Demographic Health Surveys of 27 SSA countries was utilized. Sample consisted of 25084 mother-baby (under 6 months of age) pairs. The key outcome variable was EIBF. A multilevel logistic regression model was used to explore factors associated with EIBF.

Results: The prevalence of EIBF in SSA was 49.6%, with the highest prevalence observed in Malawi (95.9%) and lowest in Guniea (18.8%). 14.8% of the variation in EIBF rate could be attributed to country level factors when background socio-demographic, antenatal and postnatal factors were controlled for. In the multivariate analysis, EIBF was significantly higher among; older mothers, richest wealth quantile, assisted skilled home deliveries, health facility vaginal delivery and female infants. EIBF was however lower among mothers; with caesarean section, first child, twin births, and large sized babies.

Conclusions: To improve on EIBF rates in SSA, focused interventions should target mothers in the following categories; young, poor, primigravidas, unskilled births, multiple births and mothers with caesarean deliveries. In addition, mothers with male infants and large sized babies.

DHS Download Account Application project no:52415

Keywords: Breast feeding, multilevel approach, Sub Saharan Africa
DETERMINANTS OF EARLY INITIATION OF BREASTFEEDING IN NIGERIA: A POPULATION-BASED STUDY

Anselm Berde¹, S. Songül Yalçın²

¹Department of Public Health, ²Department of Pediatrics, Hacettepe University, Ankara, Turkey

Background and aims: This study aimed to use recent nationally representative survey data to identify key factors associated with Early Initiation of Breastfeeding (EIBF) and to update on previous knowledge with regards to EIBF in Nigeria.

Methods: We utilized cross-sectional data from the 2013 Nigerian Demographic and Health Survey (NDHS). Chi-square tests and binary logistic regression were used to test for association between EIBF and related factors.

Results: The proportion of infants who initiated breastfeeding within 1 hour of birth was 34.7%. In the multivariate analysis, mothers who delivered in a health facility were more likely to initiate breastfeeding early as compared to mothers who delivered at home (Adjusted Odds Ratio (AOR) =1.40, 95% CI=1.22-1.60). Other factors that were significantly associated with increased likelihood of EIBF were; vaginal delivery, multiparity, large sized infant at birth, non working mothers, wealthier household index and urban residence. With the exception of the South West, all zones had higher likelihood of EIBF as compared to the North West.

Conclusions: EIBF intervention should focus on “rural mothers, working mothers, primiparous mothers, caesarean deliveries, home deliveries and poor mothers” and this intervention should cut across geopolitical zones with emphasis to zones with lower rates of EIBF.

DHS Download Account Application project no:64273

Keywords: Infants, Initiation of breastfeeding
EFFECTIVE COMMUNICATION THROUGH CULTURAL COMPETENCE IN A SOCIETY WITH DIVERSE CULTURES.

John Wu* 1, 2
1 pediatrics, university of Calgary, Calgary, Canada, 2 social services, Caritas, Hong Kong., Hong Kong, Hong Kong, China

**Background and aims:** With many countries becoming more and more multicultural because of migration and admission of refugees, health care workers need to become multiculturally competent. Aim to show the importance of effective communication through cultural competency, which can be achieved. The need to be aware of the use of certain words, gestures, and body languages, may lead to misunderstanding because of differences in culture, hence the need for health care workers to understand different cultural values and norms.

**Methods:** Since stories are the best way to learn, this presentation will use actual patient encounters to show:-
1. How to avoid misunderstanding of words.
2. The appropriate use of gestures or what gestures or body language that can lead to misunderstanding or in some cases better understanding.
3. Resolution of differences in cultural values.

**Results:** Using actual patient encounters to show how effective communications can be achieved and in fact sometimes exceeds expectation because the patient recognised that you cared enough to understand them. Actual outcomes of encounters will be presented.

**Conclusions:** In summary the health care workers learn to be more patient centered, and that cultural competency can often be learned from patients, self reflection and reading.

**Keywords:** Cultural competency., Cultural diversity., Effective communication.
FACTORS AFFECTING CHILD REARING ATTITUDES SCALE
S. Songül Yalçın¹, Muhammad SHAFAQ¹
¹Department of Pediatrics, Hacettepe University, Ankara, Turkey

**Background and aims:** The effects of variations in parenting can be tracked in children's health, behaviour and well being. The determinants of parenting were multi-factorial and multi-layer, with individual, historical, social and contextual factors. The aim of this study was to investigate the effect of the family, maternal and infant characteristics (eating, crying and sleeping) on parenting styles.

**Methods:** A questionnaire including the baby's nutritional properties (being breastfed, nipple, bottle use), infant characteristics (planned pregnancy, sex, birth type, person giving the name of the children, crying and sleep features) the family's socio-demographic characteristics (parent's education, employment status, family type, family income), maternal characteristics (smoking and alcohol use, television viewing time, health problems), brother/sister characteristics (number of living children, health problems, death history), types of family support was filled. Parent Attitude Research Instrument (PARI) has been applied.

**Results:** A total of 173 children (1-12 month old) and their mothers were used to collect data. Low maternal education, low family income, watching more television, mother's health and sleep problems increase the negative features of parenting attitude, so for positive parenting attitude increasing mother's education, supporting women in practical life and analyzing the health problems should be supported.

**Conclusions:** The factors which disturb baby rearing attitudes might be indicated in pregnancy and during child health supervision.

**Keywords:** Child rearing, Parent Attitude Research Instrument
FAMILY HEALTH QUESTIONNAIRE FOR THE ASSESSMENT OF THE FAMILY IN PRIMARY CARE.
Arwa Nasir¹, Andrea Zimmer¹, David Taylor¹, Jonathan Santo²
¹Pediatrics, University of Nebraska Medical Center, ²Psychology, University of Nebraska at Omaha, Omaha, United States

Background and aims: Assessment of the family in primary care is integral to the assessment of the child, particularly when behavioral problems are present. Several family psychosocial risk factors have been identified as having a strong influence on behavioral morbidity in children. Based on these risk factors we developed and tested the Family Health Questionnaire FHQ, to screen for family psychosocial risk in primary care.

Methods: Families of children 4-6 years of age, presenting for well child exams were recruited. Participants completed the FHQ, and the Pediatric Symptom Checklist 17 (PSC-17).

Results: 313 families participated. Regression analysis was used to test the correlation between the FHQ and the PSC scores. Two of the 10 questions on the original FHQ were eliminated from the initial analysis because of lack of variability. For the remaining 8 factors, the latent FHQ factor was significantly correlated with the PSC score (r = .49, p < .05) (figure 1).

Four factors had the most robust association with the PSC-17. The latent FHQ factor using the four strongest variables PHQ4 was strongly and significantly correlated with the PSC score (r = .62, p < .05).

Conclusions: Assessment of the family is a critical component of the evaluation of children with behavioral problems. While a detailed assessment of the family is often difficult in primary care, the FHQ4 could be an extremely valuable tool for the primary care pediatrician.

Image:
Keywords: Behavioral problems in children, Family assessment, Psychosocial risk

\[ \chi^2_{(238)} = 203.44, p > .05 \]
General Pediatrics

FEMALE GENITAL MUTILATION/CUTTING IN AUSTRALIA: PEDIATRICIANS' KNOWLEDGE, ATTITUDES AND PRACTICE

Elizabeth Elliott\textsuperscript{1}, Premala Sureshkumar\textsuperscript{1}, Yvonne Zurynski\textsuperscript{1}, Susan Moloney\textsuperscript{2}, Shanti Raman\textsuperscript{3}, Nesrin Varol\textsuperscript{1}

\textsuperscript{1}University of Sydney, Sydney, \textsuperscript{2}Gold Coast Health Service, Gold Coast, \textsuperscript{3}South West Sydney Health District, Sydney, Australia

Background and aims: FGM/C is increasingly seen in immigrant populations. We aimed to determine pediatricians’ experience with FGM/C in Australian children and adolescents.

Methods: Cross-sectional, pilot–tested national survey of pediatricians practising in Australia. Outcome measures: Clinicians’ knowledge, attitudes and clinical experience with FGM, awareness of clinical guidelines and education/training needs.

Results: Of 1311 surveyed, 38% responded; >50% were over 50yrs (51% male); over half believed FGM/C was performed in Australia; most were aware of its complications, few asked about or examined for FGM. 50 had seen ≥1 case of FGM aged <18yrs in their career, including 16 in the past 5yrs. 94% were aware that FGM is illegal in Australia, 97% agreed all FGM types were harmful and 98% that FGM violated human rights. 88% perceived FGM as a traditional cultural practice, though 12% thought it was required by religion. 82% knew notification of FGM to child protection authorities was mandatory. 62% were aware of the WHO Statement on FGM, but only 22% knew the WHO classification.

Conclusions: These novel data indicate a minority of pediatricians have clinical experience with/education about FGM. Educational programs, best-practice clinical guidelines and policies are required to address knowledge gaps and help pediatricians identify, manage and prevent FGM.

Keywords: None
FREQUENT SYMPTOMS OF UNUSUAL DIAGNOSES

LORENZO,M; IGLESIAS,V.; MARTINITTO,R; LATELLA,A; SOLARI, A.; MESSINA ,J.HOSPITAL GARRAHAN.ARGENITA.

Mariano Lorenzo¹, ¹ Mariano Lorenzo ¹ and Lorenzo,M; Iglesias,V.; Martinitto,R; Latella,A; Solari, A.; Messina ,J
¹Pediatrician, Hospital de Pediatria J.P.Garrahan. Argentina, Buenos Aires, Argentina

Background and aims: Common symptoms such as cough may respond to rare pathologies delaying the diagnosis of the disease. The aim of this report is to describe an unusual presentation of a common diagnose.

Methods: Case report

Results: A 14 years old male patient started with a cough. After 6 months he continued with irritative cough, adding dysphagia to solids and liquids, then weight loss. Chest CT observed the medial esophageal dilatation, tracheoesophageal fistula and mediastinal prevertebral posterior paraesophageal image of 4x3cm. With suspected tumor vs mediastinitis, intravenous ampicillin-sulbactam was indicated. Bronchoscopy showed extrinsic compression, complete occlusion of the esophageal lumen and ulceration, biopsy reported bacterial plaque without neoplastic cells. Esophagography reported immediately passage lower airway and severe gastroesophageal reflux in both bronchi. The patient was fed with Parenteral Nutrition, a gastrostomy was performed and a GJ tube was placed for enteral feeding, and showed good tolerance and weight gain. The 3D reconstruction showed a foreign body image. A new examination was performed and the patient remembered having taken two years earlier a small sachet of candy accidentally. Posterior thoracotomy was scheduled, esophageal opening and removal of foreign body.

Conclusions: It is essential to conduct a thorough examination to reach the correct diagnosis in clinical practice. An inoffensive foreign body aspiration could make a severe chronic injury. Some objects may remain lodged in the airways even for years making damage to the tissues.

Keywords: cough; foreign body
GROWTH PARAMETERS AND OBESITY INDICATORS IN CHILDREN OF WORKING MOTHERS IN SAUDI ARABIA
Abeer Abd Elmoneim\textsuperscript{1,2}, Noura Alahmadi\textsuperscript{2}, Dareen Alahmadi\textsuperscript{2}, Ehab Abd EL-moneim \textsuperscript{1,2}
\textsuperscript{1}pediatric, Sohag University, Sohag, Egypt, \textsuperscript{2}pediatric, Taibah University, Almadinah Almounourah, Saudi Arabia

Background and aims: After birth, infants lose about 5 - 10% of their birth weight. By age 2 weeks, an infant starts to gain weight quickly. At 4 - 6 months, infants’ weight is double the birth weight. Between ages 2 - 10 years, children continue to grow at a steady pace. A final growth spurt begins at puberty. The child's nutrient needs correspond with these changes in growth rates. An infant needs more calories than a preschooler or school-age child needs. Nutrient needs increase again as a child gets close to adolescence. In our study we aim to measure growth parameters among preschoolers to detect early signs of obesity or growth failure.

Methods: In a cross sectional analysis, we examined 83 preschoolers of working mothers for their growth parameters.

Results: Of 15 boys and 7 girls less than 2 years old, 20% of boys have BMI above 95\textsuperscript{th} percentile and 13.3% have BMI below 25\textsuperscript{th} percentile while all girls have BMI between 50th and 95th percentile. Of 34 boys and 27 girls aging between 2 and 5 years, 8.8% boys, 3.7 % girls were above the 95th percentile and 7.4 % girls were below 25th percentile.

Conclusions: Obesity is more in boys than girls and in less than 2 years old age group. Healthy nutrition habits are needed to be started early in life to avoid obesity or malnurtion.

Keywords: Child Growth, Healthy nutrition, Malnutrition, Obesity
HEIGHT MORE THAN 85 PERCENTILE OF NORM WITH INCREASED BMI IS RISK FACTOR OF DEVELOPMENT OF CARDIO-VASCULAR DISEASES.

Olga Kozhevnikova¹, Leyla Namazova-Baranova², Eka Abashidze¹, Vladislav Lebedev¹, Victor Altunin¹, Irina Kondrakhina¹, Elena Antonova², Saniya Valieva³, Olga Logacheva², Alexandra Paltseva², Anna Batyrova², Irina Shirokova²

¹Instrumental diagnostic, ²Scientific Center of Children's Health Of the Ministry of Health of the Russian Federation, Moscow, ³Scientific Center of Children's Health Of the Ministry of Health of the Russian Federation, Moscov, Russia

**Background and aims:** As a rule, high growth has been found among children with overweight and obesity more often than among children with normal BMI. High growth has been connected with insulin resistance and elevating insulinlike growth factor (IGF-1).

**Aim** is to identify the features of noninvasive oscillometric arteriography indicators, daily hemodynamics, the level of glycemia at night, which height was more than 85 percentile.

**Methods:** Children with high BMI were examined 211 by noninvasive oscillometric arteriography (TensioMed); 92 - combined 24-hour monitoring of ECG and blood pressure (Astrocard); 45 - polysomnography (Embla); 14 - by system of continuous glucose monitoring (Guardian).

**Results:** Children 3-17 age old with increased BMI and height more than 85 percentile in comparison with middle height had: significantly lower augmentation index, 5 times more often decreased diastolic blood pressure at night, decreased high density lipoproteins. If they have obesity - the absence of a normal daily dynamics of blood pressure; if they have overweight significantly longer QT interval; if they have a syndrome obstructive sleep apnea-hypopnea – we found hypoglecimia during night (till 3,3-2,2 mmol/l).

**Conclusions:** The height more than 85 percentile with increased BMI is risk factor of development of cardio-vascular diseases.

**Keywords:** cardiovascular risk factors, BMI, non-invasive arteriography, polysomnography, obesity, blood pressure
General Pediatrics

HYPERNATREMIA IN CHILDREN WITH DIARRHEA, A PROBLEM AT A TERTIARY HOSPITAL IN HARARE.

Marcia Mangiza* 1, Felicity Gumbo1.1

1Pediatrics, University of Zimbabwe, Harare, Zimbabwe

Background and aims: Hypernatremic dehydration in children with diarrhoea has been noted to have high mortality rates. The prevalence of hypernatremia was not known at harare hospital despite an increase in diarrheal cases.

We set out to determine the prevalence of hypernatremia, associated factors and outcome of children below 2 years of age admitted to Harare Children's hospital with diarrhoea.

Methods: A cross-sectional analytic study was carried out to determine the prevalence and factors associated with hypernatremia. 127 children between the age of 1 month and 2 years who presented with diarrhoea were recruited consecutively and assessed.

A univariate logistic regression was performed at 5% significance level to identify factors associated with hypernatremia. A multivariate logistic regression was then performed on factors with a P value<0.25.

Results: The prevalence of hypernatremia was 27.6%. Those likely to have hypernatremia were younger than 6months (OR 4.77), had ≥5 stools per day (OR 3.21), no co-morbidity (OR 3.1), fever (OR 2.43), normal height for age (OR 7.37), some dehydration (OR 15.7) and severe dehydration (OR 24.6). The only determinant of hypernatremia after multivariate logistic regression analysis was age <6months (OR 4.76). The overall mortality was 13.4% and hypernatremia was associated with mortality (p-value 0.0001)

Conclusions: The prevalence of hypernatremia among children between 1 month and 2 years of age with diarrhoea was high. Children less than 6 months of age were more likely to have hypernatremia. There was a high mortality among the children with hypernatremic dehydration.

Keywords: Diarrhoea, hypernatremia
IMPACT OF PEDIATRIC PHARMACISTS INTERVENTION IN PRESCRIPTION ERRORS PREVENTION AMONG FIRST-YEAR PEDIATRIC RESIDENTS  

Arielle Levy¹, Stephanie Vairy¹, Ana Carceller¹, Olivier Jamoule¹  
¹Department of Pediatrics, Sainte-Justine Hospital University Centre, Montreal, Canada

Background and aims: Pediatric patients are particularly at risk of prescription errors because of weight-based dosing. Aims: to evaluate the effect of a two-hour lecture by a pharmacist on the rate of prescription errors and the quality of prescriptions in PGY-1 pediatrics residents.

Methods: Retrospective study, pediatric hospital. Pharmacy course given to 11 PGY1 pediatric residents (2013 cohort). We compared them to 15 PGY-1 pediatric residents (2012 and 2013 cohorts) unexposed to the intervention. The first 50 prescriptions of each resident were analyzed at the beginning of residency.

Results: Data of 1300 prescriptions (451 patients) from 26 PGY-1; 550 in the exposed group and 750 in the non-exposed group. Rate of prescription errors in the intervention group was 9.6% compared to 11.3% in the control group (p=0.32). Error of >10% of dosage was found in 0.9% of exposed prescription’s group compared to 2.1% in unexposed (p=0.04). There was a trend toward fewer errors in dosage, frequency and route of administration in the intervention group. Many mistakes were highlighted: lack of documented written allergy (67.8%), dosage/weight (45.5%), generic name (28.8%), weight (26.2%), date/hour (3.6%).

Conclusions: Pharmacist intervention influence positively the rate of prescription errors among junior pediatrics residents. Future interventions should target frequent types of prescription errors and quality mistakes.

Keywords: Education, Prevention, safety
INTEROBSERVERS, INTRA OBSERVER AND INTERMETHODS RELIABILITY OF PALLOR EXAMINATION

S. Songül Yalçın¹, F. Serdar Gürel², Pınar Özdemir³, Pelin Zorlu⁴, Elif Ateş⁵, Emel Örün⁶, Nesibe AKYÜREK⁷, Turan Bayhan⁸

¹Department of Social Pediatrics, Faculty of Medicine, Hacettepe University, ²Faculty of Medicine, Başkent University, ³Department of Bio-Statistics, Faculty of Medicine, Hacettepe University, ⁴Dr. Sami Ulus Maternity and Children's Health and Diseases Training and Research Hospital, ⁵100. Yıl Family Health Care Center, ⁶Turgut Özal University Hospital, Ankara, ⁷Department of Pediatric Endocrinology, Necmettin Erbakan University, Konya, ⁸Hacettepe University İhsan Doğramacı Children Hospital, Ankara, Turkey

Background and aims: The aim of this present study was to examine the intra-observer and inter-observer reliability of palmar pallor, rated by six physicians, and to evaluate inter-methods agreement among conjunctival, tongue, palmar and plantar pallor in different individual factors, in children under 6 years of age.

Methods: Six independent [three junior physicians and three IMCI (Integrated Management of Childhood Illness)-certificated physicians] examiners assessed palmar pallor on the same occasion. The reliability was analyzed by kappa coefficient (κ) and by 95% confidence interval.

Results: The study included 110 children, [Mean (SD) age 2.79 (1.75) years] where each child was rated twice, by each of the six physicians. Intraobservers reliability of palmar pallor is 0.55 (95% CI; 0.48 - 0.62). Interobserver reliability (κ) of palmar pallor was 0.31 (95% CI 0.26-0.35) and changed with age, sex, skin pigmentation, cause of admission (check-up vs acute illness), palmar heat, palmar humidity, status of child’s hunger and the state of mood (safe vs anxiety-crying). There was a moderate agreement between palmar and plantar pallor which was the highest one.

Conclusions: The present study showed a moderate intra-observer and fair inter-observer reliability for palmar pallor.

Keywords: children, palmar palor, Reliability
General Pediatrics

LIVER CIRRHOSIS IN CHILDREN: THE IMPORTANCE OF ETIOLOGY IN COMPLICATION DEVELOPMENT

Flora Inoyatova¹, Gulnoza Inogamova¹

¹Republican Specialized Research-Practical Medical Center of Pediatrics, Tashkent, Uzbekistan

Background and aims: Determination of specific features of the liver cirrhosis (LC) complications in relation to etiology in children

Methods: 202 children with LC were studied at the age of 3-15 years. PCR and ELISA were performed for verification of HBV, HCV, HDV, TORCH-infection, ANA, SLA, antiLKM-1 in serum, ceruloplasmin and hemosiderin in urine

Results: More complications were associated with autoimmune LC (92.2%). LC of viral genesis was on the second place (73.1%), on the last place-inherited LC (56.6%). There were some complication such as hemorrhages form the varicose veins (VVH-61.8%), hepatic encephalopathy (HE-41%), bacterial infection (BI-32.9%) and hepatorenal syndrome (HRS-15%). The intensity and character of expressions were depended on the etiology. Thus, hepatic-cellular insufficiency with development of HE was formed 2.2 times more often in patients with autoimmune and hereditary LC, in cases of viral LC HE developed in 34.8% children in which 18.7% of cases developed due to portosystemic insufficiency. VVH of the esophagus was found in the majority of children with autoimmune (90%) and viral (69.7%) LC class B, C. HRS was revealed in autoimmune LC (70%). The frequency of BI depended on the severity of LC (class B-77.1% and C-97%)

Conclusions: The frequent complications with all types of manifestations were characteristic for LC of autoimmune genesis. For LC of viral genesis the development of VVH was characteristic and for inherited LC–hepatic encephalopathy

Keywords: None
Background and aims: Children receiving or in need of psychopharmacologic treatment are often seen in pediatric clinics where monitoring and managing these medications are challenging. This presentation introduces a treatment monitoring and management program which provides an on-line platform by which parents, guardians, caregivers and teachers provide repeated measurement observations that assist in determining pre-treatment and treatment response states and characteristics.

Methods: Participation in the treatment monitoring and management program is facilitated by on-line video based basic training in observational and related on-line and mobile observation input methods that allow parent, caregivers and self-observers to increase the reliability and definitions of observations facilitating the clinician’s ability to better assess, manage and monitor clinical interventions.

Results: The results are the repeated measurement of pre-defined and user defined symptoms that include categorized symptoms associated with physiological, cognitive and executive functioning, affect and mood, social functioning and thought and perception result in meaningful graphical representations of treatment response.

Conclusions: The benefits of these measurements engage the patient, the parent of the patient and/or the primary caregiver and provide documentation from the primary observer, usually the parent, defines issues of concern and assists in the evaluation of treatment response by repeated measurements.

Keywords: pediatric psychopharmacology; patient monitoring; developmental disorders; behavioral and emotional disorders
General Pediatrics

MEDIASTINITIS SECONDARY TO INADVERTENT RETROPHARYNGEAL ABSCESS. CASE REPORT IN A 3° LEVEL HOSPITAL IN MEXICO CITY.

Magdalena Ceron Rodriguez 1, Jazmin Navarro Munguia 2

1Head of Service, 2Pediatric resident, Hospital Infantil de Mexico Federico Gomez, Mexico, Mexico

Background and aims: Retropharyngeal abscess is an infection of deep neck, serious and rare. Infrequent complication, but with high mortality it is acute mediastinitis. In our midst is not known the prevalence of this disease. The present case is of interest because the clinical suspicion is very low and this complication could be fatal.

Methods: Male of 7 years old from Mexico City. Starts his condition 2 days prior to arrival with accidental ingestion of plastic foreign object, later begins with shortness of breath. He arrives at emergency room with shock data, presents progression of respiratory distress requiring orotracheal intubation. Laryngoscopy was observed presence of mucosal injury pharyngeal 2 centimeters of length with purulent discharge. Thorax X-ray study where observed an interstitial infiltrate right basal. Remains intubated for 7 days and receive ceftriaxone and clindamycin. Three days later is detected pleural effusion which was radiologically corroborated and be conducted pleurostomia getting pleural liquid turbid. Changes antibiotic to cover anaerobic agents with piperacillin-tazobactam. The thorax computed tomography scan, reporting subglottic abscess, parapharyngeal space emphysema, retropharyngeal abscess, abscess of 5.5 millimeters and pneumomediastinum para-aortic.

Results: Thoracotomy with drainage of abscess, showing improved clinical and laboratory. Patient was discharged in a good condition.

Conclusions: The secondary mediastinitis to retropharyngeal abscess is very rare, a timely suspected, diagnosis and treatment would have a good prognosis and a minimum of complications.

Keywords: Acute mediastinitis, Pediatrics, Retropharyngeal abscess
General Pediatrics

METHODOLOGICAL QUALITY AND REPORTING IN PEDIATRIC PREVENTIVE CARE RECOMMENDATIONS: A REVIEW OF GUIDELINES AND PROGRAMS FROM ENGLISH-SPEAKING COUNTRIES

Gabriel Cartman¹, Hyejee Ohm¹, Leslie Rourke², Denis Leduc³, Patricia Li¹, ³

¹Family Medicine, McGill University, Montreal, ²Family Medicine, Memorial University of Newfoundland, St. John's, ³Pediatrics, McGill University, Montreal, Canada

Background and aims: Early childhood has a profound influence on physical, mental and emotional health throughout life. Comprehensive guidelines have been developed internationally for child health promotion based on the best available evidence. This study assessed the methodological quality and reporting of guidelines for pediatric preventive care.

Methods: We searched for nationally-endorsed guidelines for preventive care well-child visits in children 0-5 years old from English-speaking countries. Three independent reviewers examined the process for synthesizing the evidence, as well as formulating and updating recommendations. We examined 6 domains (scope & purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability, editorial independence) in the AGREE II international tool for assessing the rigour and transparency of guideline development. We allocated scores and compared them descriptively.

Results: We retrieved 5 guidelines: Tamariki Ora (New Zealand), Healthy Child Programme (UK), Maternal and Child Health Service Guidelines (Australia), Bright Futures (US), Rourke Baby Record (Canada). There was a wide variation in scores across all domains. For example, overall scores for the rigour of development ranged from 17% (Australia) to 71% (US). The one item that scored poorly across guidelines (score ≤ 3) was the description of how recommendations were formulated and updated.

Conclusions: Methodological rigour in preventive care guidelines development varied substantially across countries. All guidelines would be improved with explicit reporting of the recommendation development process.

Keywords: Evidence, Guidelines, Preventive care
General Pediatrics

MRI SCANNING IN CHILDREN USING ORAL CHLORAL HYDRATE

Cheriya Abdulla¹, Iman Hegazy²

¹paediatrics, Rockhampton hospital, Rockhampton, Austria, ²paediatrics, Rockhampton hospital, Rockhampton, Australia

Background and aims: Diagnostic accuracy and safety has made MRI the preferred scan of choice. General anaesthesia has been used for MRI scanning to keep children still. To-date, most of the studies on MRI sedation in children are done by anaesthetists in tertiary unit. Easy availability of paediatric anaesthetists and busy MRI unit preferred general anaesthesia for MRI scanning. This study is to see MRI scanning can be made more child and family friendly using oral chloral hydrate sedation.

Methods: Chloral hydrate 75mg/kg was given 45 minutes before the procedure; children between 6 months and 6 years and those with complication were excluded from this study. MRI between 2013 and 2015 in a private and public hospital in Rockhampton were studied. Consultant paediatrician supervised all children in the private hospital. APLS trained paediatric staff gave oral sedation in the public hospital.

Results: 23 out of 24 had successful MRI in the private hospital, and 36 out of 44 in the public hospital. There were no major side effects noted.

Conclusions: This study concludes chloral hydrate sedation is safe, effective and successful in under 6 years by paediatricians. This can bring MRI scanning to smaller units in the wider community. A larger study is recommended for the same.

Ref:

Keywords: MRI, chloral hydrate
MULTIDRUG RESISTANT URINARY TRACT INFECTIONS IN HEALTHY CHILDREN

Kristopher T Kang1, Karen Ng2, Peter Tilley1, Joseph Ting1, Vanessa Paquette2, Rod Rassekh1, Srinivas Murthy1, Ashley Roberts1 and Provincial Health Services Authority Antimicrobial Stewardship Steering Committee

1Pediatrics, 2Pharmaceutical Sciences, BC Children's Hospital, Vancouver, Canada

**Background and aims:** The incidence of multidrug resistant (MDR) urinary tract infections (UTIs) in children is increasing. The aim of this study is to describe the incidence, clinical characteristics and risk factors for MDR UTIs presenting to the pediatric emergency department (ED).

**Methods:** This was a retrospective cohort conducted at BC Children’s Hospital. Children 0-18 years old who presented to the ED between July 1, 2013 and June 30, 2014 and were found to have UTI were eligible. Data were collected from paper and electronic medical records using a standardized questionnaire.

**Results:** There were 294 patients, including 192 girls (65%). The median age was 27.4 months. A MDR organism was identified in 36 patients (12.2%). The most common MDR organisms were Escherichia coli (50%), Enterobacter species (22.2%), and Citrobacter species (19.4%). In the MDR vs. non-MDR group, empiric antibiotic therapy was more likely to be inappropriate (75 vs. 2.7%) and patients were more likely to require hospitalization (41.7 vs. 20.9%). Rates of concomitant bacteremia (2.8 vs. 2.7%) and length of hospitalization were similar (5 vs. 6 days). Rates of UTI antibiotic prophylaxis and recent antibiotic use were higher in the MDR group (5.7 vs. 3.9%, 38.2 vs. 12.5%). There was no mortality reported in either group.

**Conclusions:** MDR organisms account for a significant proportion of community acquired pediatric UTIs and are associated with higher rates of UTI antibiotic prophylaxis and recent antibiotic use.

**Keywords:** antimicrobial stewardship, Multi-resistant organism, Urinary tract infection
Background and aims: Siberia is situated in the Asian part of Russia. The climate is sharply continental. The winter is long and cold with the temperature till -40-50°, that determines Siberian’s population nutrition stereotype as the prevalence of proteins and fats.

Purpose: to carry out comparative analysis of nutrition components among healthy and overweight teenagers, living in the regions with sharply continental cold climate

Methods: The analysis of 3-days nutrition diary of 92 girls at the age of 14-17 years was carried out. There singled out 3 groups: 1 group - 33 girls (35,4%) with body-mass index (BMI) < 85‰ (control group); 2 group -35 girls (38,7%) with BMI from 85 to 95‰ (overweight); 3 group - 24 girls (25,8%) with BMI >95‰ (obesity).

Results: The level of proteins : fats : carbohydrates : calories of the girls from the 1st group is: 117,3±4,7 : 119,9±5,2 : 501,1±20,3 : 3512,0±122,01. In the 2nd group 139,6±10,7 : 112,04±8,8 : 431,4±21,9 : 3090,8±165,7. In the 3d group respectively 148,5±10,6 : 137,9±7,6 : 419,1±23,7 : 3718,7±226,9. Statistical validity (p <0,05) on proteins is revealed in the 1-3 group (0,0082). On fats in the 1-2 group (0,0398) and 2-3 group (0,0033). On carbohydrates в 1-2 group (0,0138). On calories in 1-2 group (0,0048), 2-3 group (0,0141), 1-3 group (0,048).

Conclusions: The girls with the obesity have an increased nutrition caloricity.

The proportion p: f: c in the control group is 1:1:4,3. There revealed a nutrition disproportion among the girls with overweight and obesity as a result of protein components increasing and carbohydrates reduction 1:0,75:3,1 and 1:1:2,8 respectively.

Keywords: calories, carbohydrates, fats, girls, obesity, proteins, teenagers,
OFF-LABEL DRUG USE IN A MALAYSIAN PEDIATRIC OUTPATIENT CLINIC: A PROSPECTIVE STUDY AND COST ANALYSIS

Shamala Balan¹, Mohamed Azmi Ahmad Hassali¹, Vivienne Mak Sook Li²
¹School of Pharmaceutical Sciences, Universiti Sains Malaysia, Penang, ²School of Pharmacy, Monash University, Kuala Lumpur, Malaysia

Background and aims: Many drugs used in pediatrics are prescribed in off-label manner. We aimed to analyse pediatric dosing information in product information leaflet (PIL) of drugs prescribed to pediatric outpatients and to determine the extent, nature and cost of off-label drug use in these patients.

Methods: Drug data of children aged less than 18 years old, who attended the pediatric outpatient clinic at a tertiary hospital in Malaysia, from 1st to 30th of September 2015, was collected and analysed. PIL for drugs prescribed was reviewed for extent of dosing information according to different age category. Prescribed drugs were categorised as off-label when used outside license information. The total cost of off–label drugs was calculated by multiplying unit cost with the quantity dispensed.

Results: 314 children received 554 drug orders. The age category that had the most PI with adequate dosing information was the adolescent (51.2%). 30.8% of all the drug orders were given off-label. The most common reason for off-label classification was dose (43.5%). Highest proportion of off-label drug use occured in children aged 2 to less than 12 years old (77.2%). The largest number of off-label drug orders was found among drugs for the respiratory system (88/171, 51.5%). The total cost of drugs used in off-label manner was MYR 5295.72 (45.1% of total drug cost).

Conclusions: The proportion of PIL with adequate dosing information increased consistently with age group. Off-label drug use was fairly prevalent among the study population. A high proportion of the total drug cost was spent for drugs prescribed in off-label manner.

Keywords: cost analysis, off-label, paediatric outpatient
PAEDIATRICIANS CARING FOR CHILDREN WITH RARE DISEASES: SURVEY OF CURRENT KNOWLEDGE, PRACTICE AND FUTURE EDUCATIONAL NEEDS

Aranzazu Gonzalez¹, Yvonne Zurynski², Amy Phu², Marie Deverell², Elizabeth Elliott²

¹The Children’s Hospital at Westmead, ²Australian Paediatric Surveillance Unit, University of Sydney, Sydney, Australia

Background and aims: There are 5,000 recognised rare diseases (RD), representing ~442,000 children in Australia. They usually present in childhood and are chronic and complex. Paediatricians need information/resources about RD, or knowledge about where to find these in order to assess diagnoses and care for these children. With no publications in this area, we aim to address these needs and preferences for future educational opportunities.

Methods: Survey was piloted, with the final survey delivered on-line. A quasi-randomly selected sample of paediatricians (n=679) who participate in the Australian Paediatric Surveillance Unit, representing all states of Australia were sent the survey.

Results: 242 participated, 93% currently looked after children with RD. 89% underestimated the aggregate prevalence of RD, many unaware of relevant web-based resources. 78% would like to update their skills and knowledge via online modules, ~70% wanted to know how to use already existing on-line resources to optimise care. 96% preferred web-based resources, face-to-face the least popular. ~ 75% used smartphone/tablet apps in clinical practice.

Conclusions: Paediatricians indicated a need for education on RD. We recommend that a centralised web portal about RD is developed for paediatricians, with a directory of links to educational resources, guidelines and specialist clinics.

Keywords: None
General Pediatrics

PATHOGENETIC ASPECTS OF ANEMIA INFLAMMATION DIAGNOSIS IN CHILDREN WITH CHRONIC HBV INFECTION

Flora Inoyatova1, Nodira Ikramova1

1Republican Specialized Research-Practical Medical Center of Pediatrics, Tashkent, Uzbekistan

Background and aims: To establish specific features of ferrokinetics and pathogenesis of anemia of inflammation (AI) in children with chronic hepatitis B (CHB)

Methods: 148 children with CHB aged 3-18 years with the duration of disease 4.7±0.2 years were examined. ELISA was used for determination hepcidin, transferrin, soluble transferrin receptors (sTfR), ferritin(Ft). Ratio of sTfR level to log Ft index was calculated

Results: High frequency of AI (95.6%) was determined. 60.7% of cases were defined as refractory anemia-RA (tolerance to iron therapy). Staged formation of AI was established—“true” deficit of iron with ferromarkers specific for iron-deficiency anemia at the onset of disease (increase in hepcidin to 56.384±0.14 ng/ml and transferrin spectrum on the bases of Ft reduction to 31.2±2.38 ng/ml, p<0.001) and redistributing iron deficit characterized for hemosiderosis at the late stages of CHB with development of refraction (reduction of hepcidin to 28.590±0.69ng/ml and transferring parameters on the background of increase in Ft to 130.9±2.42 ng/ml, p<0.001). In this case sTfR / log Ft in non refractory anemia was 2.250±0.21, in RA 0.885±0.11

Conclusions: Two variants of the pathogenic mechanisms of AI are classified in children with CHB – true iron deficit responding to iron therapy and iron redistributing due to accumulation in the tissues and development of RA. For their differential diagnosis the calculation of the sTfR/ log Ft is required

Keywords: None
PATHOGENOMONIC DYNAMIC MRI IMAGES AND HIGHLY ELEVATED SERUM IL-18 LEVEL AS NOVEL DIAGNOSTIC FEATURES OF ACUTE-ONSET AUTOIMMUNE HEPATITIS.

Naohisa Fujita¹, Yasuhiro Ikawa*¹, Yusuke Yachi¹, Natsumi Inoue¹, Akiko Kato¹, Akihiro Yachie¹
¹Pediatrics, Kanazawa University Hospital, Kanazawa, Japan

Background and aims: Diagnosis of acute onset AIH (a-AIH) is problematic due to the lack of definitive diagnostic features. Because corticosteroid treatment is highly effective, prompt diagnosis is of paramount importance to avoid development of hepatic failure. In this study, we examined the value of liver imaging studies and the serum cytokine determination to avoid liver biopsy for diagnosis.

Methods: Imaging study of the liver was performed by CT and MRI. Longitudinal serum cytokine levels were measured by enzyme-linked immunosorbent assay.

Results: An 8-year-old girl was admitted to our hospital due to transaminase elevation and jaundice without recent medication. Serological study was negative for viral etiology. On plain CT, heterogeneous hypoattenuation area was identified. On dynamic MRI, the same area was enhanced during arterial phase. Intriguingly, the enhancement remained during equilibrium phase, suggesting the obstruction of hepatic outflow from the central vein. The finding was consistent with the typical histological feature of a-AIH, zone-3 necrosis. Moreover, significantly elevated level of serum IL (interleukin)-18 was observed at initial diagnosis, but the level decreased immediately after initiation of corticosteroid therapy.

Conclusions: The characteristic imaging findings and highly elevated serum IL-18 level may serve as novel diagnostic features of a-AIH.

Keywords: autoimmune hepatitis
PERCEPTIONS OF PROVIDER KNOWLEDGE AROUND COMPLEMENTARY THERAPIES AMONG PEDIATRIC PATIENTS

Amitha Kalaichandran¹, Nick Barrowman², Jason Chan², Karin Toupin-April¹, ², Sunita Vohra³, ⁴, Roger Zemek², ⁵
¹University of Ottawa, ²CHEO Research Institute, Ottawa, ³Pediatrics, ⁴Integrative Health Institute, University of Alberta, Edmonton, ⁵Pediatrics, Children's Hospital of Eastern Ontario, Ottawa, Canada

Background and aims: Complementary Therapies (CoT) are commonly used in children, yet may not be discussed with conventional providers. We aimed to determine caregiver perceptions around the medical provider knowledge of CoT, and their comfort level with discussing CoT with their provider.

Methods: Cross-sectional survey of parents/caregivers attending a tertiary pediatric ED in Ottawa, Canada between December 2014 and July 2015.

Results: Of the 369 respondents surveyed, only 33% believed their medical doctor (MD) or nurse practitioner (NP) was knowledgeable about CoT, yet 71.8% reported feeling comfortable discussing CoT with their MD/NP. Respondents with less than a University-level education were more likely to agree that their MD/NP was knowledgeable about CoT (78.7%; p=0.05) compared to those with a higher level of education. Compared to respondents who did not have a primary care provider, those with a primary care provider were more likely to view their MD/NP as knowledgeable about CoT (71.2%; p=0.01). Among users of CoT, higher caregiver education was associated with visiting a naturopath (85% vs 15%; p=0.03), but this association was not found with other CoT providers.

Conclusions: While CoT is frequently used for acute pediatric complaints requiring an ED visit, many view that their provider lacks knowledge around CoT. However, most caregivers feel comfortable discussing CoT with their provider. Clinicians should engage caregivers around their perceptions of CoT, while also taking steps to become more familiar with the current knowledge around CoT.

Keywords: None
PERIPHERALLY INSERTED CENTRAL CATHETERS (PICC): THE EXPERIENCE AT A TERTIARY CHILDREN’S HOSPITAL. A REVIEW OF COMPLICATIONS AND THEIR RISK FACTORS.

Theresa Pitts¹, Hala Katf¹, Keith Ooi¹
¹SYDNEY CHILDREN’S HOSPITAL, RANDWICK, Australia

Background and aims: A peripherally inserted central catheter (PICC) is increasingly common for venous access. However, there may be associated complications and only limited data is available in paediatric patients. The study objective was to review the rate and types of PICC complications, and identify their risk factors.

Methods: A retrospective audit was conducted at Sydney Children’s Hospital, using medical records of all patients in whom a PICC was inserted between January 2011 and December 2012. Using the list of PICC insertions from the Intensive Care Unit and operating theatre, data was collected relating to demographics, background conditions, PICC characteristics, insertion details, PICC care and removal, and any complications that occurred. Statistical analysis was undertaken using a logistic generalised estimating equation model.

Results: Of the 238 PICCs successfully inserted, 57.1%(136) developed complications. Of these, 33.1% required PICC removal. There were 180 individual complications, with the most common complication types being occlusion (45.0%), site abnormality (11.1%), and PICC malfunction (10.6%). Statistically significant risk factors associated with developing any complication included splinting of the limb and disconnection of the PICC circuit. Protective factors were antibiotic administration at time of insertion and use of a “heparin lock”.

Conclusions: This study identified factors, some not previously recognised, that altered the probability of developing a PICC complication. Validation by a prospective cohort study and multicentre trial would allow recommendations to improve current practice.

Keywords: CENTRAL CATHETER, COMPLICATION, PEDIATRIC, PICC
RECOGNITION AND RESPONSE TO CHILD SEXUAL ABUSE (CSA) BY THE MEDICAL PROFESSIONALS IN INDIA

Rajeev Seth¹, Uma Agrawal², Sandhya Khadse³, Rajendra Srivastava², Martin Finkel⁴
¹The Indian Child Abuse Neglect Child labour (ICANCL) group, ²ICANCL group, New Delhi, ³ICANCL group, Pune, India, ⁴CARES Institute, Rowan University, New Jersey, United States

Background and aims: According to the Government of India (GOI) in 2007; over half of Indian children have faced some form of sexual abuse. Medical professionals are often the first point of contact for an abused child and are required to provide prompt care and assure protection of the child. The paper brings awareness and training of the medical professionals to recognise and respond to Child Sexual Abuse (CSA).

Methods: To address the challenges, the Indian Child Abuse Neglect Child labour (ICANCL) group (www.icancl.com) conducted several advocacy and training initiatives in the field of CSA.

Results: The 9th ISPCAN APCCAN (2011) Conference was held in New Delhi to raise awareness of the needs of abused children. A new law “Protection of Children from Sexual Offences” (POCSO) Act 2012 created a sense of urgency for a more robust systems response. The IMA, UNICEF, and ICANCL faculty conducted several regional training of trainers (TOT) workshops (2014-15). A series of symposiums were organized on How Medical Professionals should respond to CSA? Efforts were made to implement “personal safety and privacy” guidelines to prevent CSA. The recent GOI initiative to start “One Stop Centre (OSC)” Scheme in every state medical facility to support women and girls below 18 years affected by violence is a great opportunity to collaborate, coordinate services and participate in multidisciplinary training.

Conclusions: This paper will highlight the challenges faced in responding to CSA as well as successful strategies to develop policies, protection and clinical services to support the needs of victimized children in low income countries.

Keywords: child sexual abuse, medical professionals, response
RE-EVALUATION OF SERUM FERRITIN CUT-OFF VALUES FOR THE DIAGNOSIS OF IRON DEFICIENCY IN INFANTS AGED 12 TO 36 MONTHS.

Kawsari Abdullah1, Yang Chen2, Kevin Thorpe2, Catherine Birken1, Jonathon Maguire3, Darcy Fehlings4, Anthony Hanley5, Patricia Parkin1 and TARGet Kids!

1Division of Pediatric Medicine, The Hospital for Sick Children, 2Applied Health Research Centre, 3Pediatric Medicine, St. Michael's Hospital, 4Division of Developmental Pediatrics, Holland Bloorview Kids Rehabilitation Hospital, and Bloorview Research Institute, 5Department of Nutritional Sciences, University of Toronto, Toronto, Canada

Background and aims: Clinically relevant cut-off values for serum ferritin (SF) in children aged 12-36 months are not well delineated. The aim of this study is to identify SF cut-offs for the diagnosis of iron deficiency by examining its relationship with Hb concentration.

Methods: The relationship between SF and Hb was examined using an adjusted restricted cubic spline (RCS) regression analysis. From the regression plot a plateau point where Hb concentration is maximized was estimated; and the SF cut-off that predicted a mean Hb value of 110 g/L was calculated.

Results: The adjusted RCS model identified a plateau point at which the predicted Hb level is maximized and this point corresponded to a SF level of 17.9 µg/L. Hb with a predicted mean value of 110 g/L corresponds to a SF value of 4.6 µg/L.

Conclusions: Our study identified a cut-off for SF (17.9 µg/L) where the clinical impact of iron deficiency may not come into effect until values lower than this cut-off has been reached; and a SF cut-off (4.6 µg/L) that may have clinical impact on the neurodevelopment of children.

Keywords: Hemoglobin, Iron deficiency, Pre-school children, Serum ferritin
SLEEP IN SCHOOL-AGED CHILDREN: PREDICTORS OF SLEEP SEVEN YEARS LATER

Jodi A. Mindell 1, Avi Sadeh 2, Author Teng 3, Alex Bartle 4, Robert Kwon 5, Daniel Y T Goh 6

1Saint Joseph’s University and Children’s Hospital of Philadelphia, Philadelphia, United States, 2Tel Aviv University, Tel Aviv, Israel, 3Sydney Children’s Hospital, Sydney, Australia, 4Sleep Well Clinics, Christchurch, New Zealand, 5Johnson & Johnson Asia Pacific, 6National University of Singapore, Singapore, Singapore

**Background and aims:** The aim of this study was to assess sleep and predictors of sleep outcomes in school-aged children.

**Methods:** Parents of 221 children (46% boys; 7 to 10 y, M=8.2 years) from Australia and New Zealand participated; all had participated in a study 7 years earlier when children were ≤36 months (T1) and completed the Brief Child Sleep Questionnaire at follow-up (T2).

**Results:** Sleep quality (SQ) improved with age, with reductions in night wakings. Low stability was found for sleep measures from T1 to T2. Controlling for age, significant correlations were found only for bedtime (r=.23, p<.001), total sleep time (r=.22, p<.005), and number of night wakings (r=.20, p<.005). Higher correlations for night wakings were found in boys (r=.39, p<.0001) than girls (r=-.12, n.s.). The relationship between T1 and T2 for total sleep time was stronger in boys (r=.26, p<.05) than girls (r=.16, ns). Although measures of parental soothing techniques and bedtime interactions were predictors of early SQ, they failed to predict SQ at follow-up.

**Conclusions:** SQ improved with age, with differential trajectories in boys versus girls. Lower SQ in early childhood may be a better predictor of later lower SQ in boys than girls.

**Keywords:** longitudinal, night wakings, school-aged, sleep
SLEEP, MOOD, AND DEVELOPMENT IN INFANTS

Jodi A. Mindell1,2, Christina Lee3
1The Children's Hospital of Philadelphia, 2Saint Joseph's University, Philadelphia, 3Johnson & Johnson Consumer Inc, Skillman, United States

Background and aims: The aim of the study was to assess the relationship of sleep with mood and development in infancy.

Methods: Mothers of 1351 infants (ages 3-13 months) completed an internet-based expanded version of the Brief Infant Sleep Questionnaire and the Ages & Stages Questionnaire.

Results: Only 20.1% of infants were considered “very happy” at bedtime, whereas 77.3% were considered “very happy” in the morning and 61.1% “very happy” during the day. Overall, there were associations among parental ratings of infants’ bedtime, morning, and daytime mood with sleep outcomes, especially sleep fragmentation, duration of nighttime sleep, and parental perception of sleep problems. There were no relationships between any sleep variables and developmental outcomes, including communication, fine and gross motor skills, problem-solving, and personal social relationships.

Conclusions: Overall, these results indicate that sleep patterns and sleep problems during infancy are associated with parental ratings of mood but not more global developmental outcomes.

Keywords: development, mood, parental perceptions, sleep
SMOKING EXPOSURE AND SLEEP PROBLEMS IN INFANCY
S. Songül Yalçın*, Damla Hanalioglu
1Social Pediatrics, Hacettepe University, Ankara, Turkey

Background and aims: Adequate infant sleep quality and quantity are recognized as critical elements of child health and development. The present study aimed to assess the effect of environmental smoking exposure on sleep problems.

Methods: A cross-sectional survey, which was conducted in Hacettepe University Faculty of Medicine Childrens' Hospital. Parent-administrated questionnaires were used to collect information on parental smoking and sleep problems.

Results: Males experienced inadequate sleep more frequently than females. Being the first child of the family was found to be associated with sleeping problems in infancy. Household smoking was present in more than half of cases. Of all, 10% of mothers reported to smoke during pregnancy. Maternal smoking history during pregnancy and secondary smoke exposure during infancy were both associated with infant sleep problems (p<0.05).

Conclusions: We conclude that young children who are exposed to tobacco smoke either prenatally or postnatally are reported to have more sleep problems.

Keywords: sleep, smoking
SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS OF TREATMENTS FOR ACUTE DIARRHOEA AND GASTROENTERITIS IN CHILDREN. RESULTS FROM A SYSTEMATIC SURVEY OF TRIALS

Ivan D. Florez*, Reem Al-Khalifah, Javier M. Sierra, Claudia Granados, Carlos Cuello-Garcia, Giordano Perez-Gaxiola, Juan J. Yepes-Nunez, Jorge Acosta, Robin W Vernooij, Adriana Zea, Yuan Zhang, Areti-Angeliki Veroniki, Gordon Guyatt, Lehana Thabane

Department of Pediatrics, Universidad de Antioquia, Medellin, Colombia. Department of Clinical Epidemiology and Biostatistics, McMaster University, Hamilton, Canada. King Saud University, Riyadh, Saudi Arabia. Department of Clinical Epidemiology and Biostatistics, Pontificia Universidad Javeriana, Bogota, Colombia. Hospital Pediatrico de Sinaloa, Culiacan, Mexico. Universidad de Antioquia, Medellin. Department of Public Health, Universidad del Norte, Barranquilla, Colombia. Iberoamerican Cochrane Center, Barcelona, Spain. Knowledge Translation program, St. Michaels Hospital, Toronto, Canada

Background and aims: Treatments for reducing the duration of acute diarrhoea and gastroenteritis (ADG) have been compared to placebo/standard treatment in randomized control trials (RCTs). Systematic reviews have synthesized some of these results. No summary of all the available evidence is available

Methods: We conducted a systematic review of RCTs comparing zinc, vitamin A, probiotics, prebiotics, symbiotics, racecadotril, smectite, fermented and lactose-free formula/milk against them or standard treatment/placebo for reducing ADG treatment in children. We searched Medline, Embase, CINAHL, CENTRAL, Global-Health, LILACS, and grey literature (Nov2015). Review was performed in duplicate. We described setting, types of comparisons, and results of effectiveness with descriptive statistics

Results: We screened 2,898 studies; 204 proved eligible. In developing countries were performed 138 studies (67.3%). India was the most common setting (27, 13.1%). Single comparison of one intervention versus placebo/standard treatment was performed in 144 RCTs (70.2%). Probiotics (58, 28.3%), or zinc (28, 13.6%), or lactose-free formula (25, 12.2%) vs. placebo/standard were the most common comparisons. Except for vitamin A and prebiotics, all the interventions showed some benefit in reducing the diarrhoea duration

Conclusions: Evidence about treatments for reducing ADG duration comes from comparisons intervention vs. placebo/standard treatment. Almost all interventions showed effectiveness against placebo/standard. It is not clear which intervention is the most effective. There is scant evidence directly comparing the interventions

Keywords: Children, developing countries, Diarrhea, GASTROENTERITIS, Lactose, Probiotics, Smectite, Symbiotics, Treatment, Zinc
Background and aims: Recently WHO estimated that childhood obesity is increasing at alarming rate. To analyze the general health, growth parameters and results of functional testing of adolescents of odessa region.

Methods: Stage 1 of research includes questionnaires Stage 2 includes general examination: anthropology, blood pressure and pulse measurements, orthostatic test.

Results: Questionnaires revealed the tendency of sedentary lifestyle and bad nutrition level in families shown in chart below. We revealed the signs of pre-hypertension in 25.71%, 95%CI [14.16; 42.07] and in 2.86%, 95% CI [0.51; 14.53] - the first stage of hypertension. The results of pulse(Ps) analysis shows that 10.81%, 95% CI [1.50; 17.70] of subjects has resting bradycardia and 5.41%, 95% CI [72.02; 94.09] of subjects has resting tachycardia. In orthostatic testing, the difference in number of beats between Ps1 and Ps3 is, less than 10bpm in 60.53%, 95% CI [44.72; 74.40] of subjects, between 10-20bpm in 28.68%, 95% CI [12.99; 39.21] of subjects, and more than 20bpm in 15.79%, 95% CI [7.44%>30.42].

Conclusions: According to our research we revealed that 13% of examined children were overweight and obese and 25% have signs of prehypertension and even 2% already had stage 1 of hypertension. The revealed tendency to sedentary lifestyle, bad nutrition level and changes in general health of adolescents can be the indicator of adult life morbidity.

Image:
Keywords: adolescents, sedentary life style
THE CASE OF ACQUIRED PRIMARY HYPOLACTASIA IN PATIENT WITH FOOD ALLERGY AND CONSTIPATION

Alexander Baranov¹, Leyla Namazova-Baranova¹, Elena Vishneva¹, Elena Komarova¹, Anna Alekseeva¹, Olga Gundobina¹
¹Scientific Center of Children’s Health, ²The Russian National Research Medical University named after N.I. Pirogov, Moscow, Russia

Background and aims: There are differences in the age of debut and severity of acquired primary hypolactasia (APH).

Methods: The case of 14 y o girl with history of constipation, food allergy, atopic dermatitis, allergic rhinitis, APH.

Results: Constipation since early, FA and AD since 2 till 7 y o. At 10 y o: high sIgE for pet allergens, pollen of trees and grasses (IgE 800/ml). At 11 y o (09.12) vomiting, abdominal pain, large amount of mucus in stool appeared suddenly. Mebendazole (local clinic) worsened the symptoms. The girl was examined in SCCH, inflammatory bowel diseases were excluded; allergy to cow’s milk protein and lactose intolerance were suspected and diet was recommended (some positive effect). Then she was examined at one clinic in EU, the results of colonoscopy and biopsy were led to suspicion of Crohn’s disease. The diet was cancelled, which cause acute worsening. Mesalazine for 2 mo was non effective, cessation was not led to exacerbation. Attempt the course of Mesalazine caused a worsening. Then, in the SCCH, the results of histology of biopsy did not exclude the diagnosis of Crohn’s disease completely. But the girl was diagnosed with APH (by DNA). So lactose free diet had absolutely positive effect and cut constipation. But attempts of introducing “lactose free” products or medication tabl. have led an acute exacerbation of 4-5 d. Since 11 y o symptoms of AR during the spring (07.14 high sIgE to tree pollen). The girl has also iodine allergy. Heredity: the mother has AR.

Conclusions: In children with allergy: FA, AD, constipation and AR is not excepting other conditions, for ex. beginning of APH

Keywords: acquired primary hypolactasia, atopic dermatitis, constipation, food allergy
THE PREVALENCE OF DYSPHAGIA IN INFANTS WITH LOWER RESPIRATORY INFECTIONS

Olga Rogova¹, Vladimir Tatochenko¹, Maya Bakradze¹
¹diagnostic's department, Scientific centre of children health, Moscow, Russia

Background and aims: To study the prevalence of dysphagia in infants with lower respiratory infections (LRI).

Methods: Observational study of infants, hospitalized with prolonged cough/LRI; (exclusion – infants with neurological conditions). Dysphagia was diagnosed clinically (repeated cough and choking while feeding, rales on auscultation after feeding), GER - by esophagoscopy, X-Ray or ultrasound.

Results: Dysphagia was diagnosed in 20 infants of 70 (28%) aged 0-6 months and 2 of 17 (12%) aged 6-12 months. Of 71 toddlers only 1 had dysphagia. Of 26 infants with bronchiolitis only 3 had dysphagia only after the onset of bronchiolitis. Dysphagia was diagnosed in 19 of 61 (31%) infants with prolonged cough/LRI; all of them had a history of choking or coughing while feeding. Infiltrates on X-Ray in different stage of evolution indicative of food aspiration were found in 10 infants, 3 of them required antibiotic for acute pneumonia. 3 infants had sings of Sandifer syndrome (SS), one – with classic torsion dystonia, two - with movements of the head only before swallowing. The main cause of aspiration in all infants could be ascribed to dysphagia since GER was found in about 1/3 of infants with or without dysphagia. Therapy of dysphagia included correction of feeding position, thickening of formula; it allowed minimizing the effect of dysphagia and gradual improvement of deglutition. Prokinetic were given only to 5 infant with GERD and PPI to 2 with SS.

Conclusions: Aspiration is an important cause of respiratory events in infants. Early diagnosis and simple measures minimize aspiration.

Keywords: aspiration, dysphagia, infant
THE RISK OF SEVERE BACTERIAL INFECTION IN PREVIOUSLY HEALTHY CHILDREN WITH FEVER AND ACUTE NEUTROPENIA

Jade Hindie¹, Yves Pastore¹, Barbara Cummins-McManus¹, Bruce Tapiero¹, Uyen-Phuong Nguyen¹, Catherine Hervouet-Zeiber*¹

¹CHU Sainte-Justine, Montreal, Canada

Background and aims: When healthy children present with fever and acute neutropenia, they are often hospitalized and treated with broad-spectrum antibiotics until final cultures are obtained.

Methods: We reviewed retrospectively the outcomes of febrile children with acute neutropenia seen at our tertiary pediatric center over a 6-year period. Children with severe acute neutropenia (absolute neutrophil count (ANC) ≤ 0.5 × 10/L) without relevant past medical history (such as cancer or history of neutropenia) were included in the study.

Results: Forty-seven children, median age of 1.1 years, were included. Median ANC was 0.2 × 10/L. Median hospital stay was 3 days. A seasonal incidence of febrile neutropenia emerged. Thirty-eight patients (80.9%) received a diagnosis of viral infection, three (6.4%) had a urinary infection, one (2.1%) had pneumonia, one (2.1%) had tonsillar abscess and four (8.5%) had a final diagnosis of febrile neutropenia (unspecified cause). Outcome was favourable for all patients. All blood cultures were negative.

Conclusions: The risk of bacterial infections in healthy children found to have fever and acute neutropenia is low. Indication for intravenous antibiotics and hospitalisation should be mostly based on clinical findings.

Keywords: Febrile Neutropenia
UNCOMMON INFECTION IN PEDIATRIC LIVER TRANSPLANT RECIPIENTS

Roxana Martinitto* and Messina, J; Solari, A; Iglesias, V; Halac, E.; Lauferman, L; Aredes, D; Malla, I; Latella, A; Jacobo, D, A; Cervio, G.

1Pediatric, Hospital J.P. Garrahan, Buenos Aires, Argentina

Background and aims: Improved immunosuppressive therapies for organ transplantation have reduced the incidence of allograft rejection while increasing susceptibility to opportunistic infections.

Methods: Retrospective analysis of records. This report focuses on two uncommon causes of infection in PLT.

Results: Case 1. An 11 year old girl, who underwent a transplant due to acute liver failure 4 years ago, immunosuppressed with Tacrolimus, presented a tumor in the soft tissues on the ribs. The thorax CT showed round supradiaphragmatic images, multiple nodules in both lungs and mediastinal adenopathies. The diaphragmatic nodules were biopsied and a bronchoalveolar lavage fluid was performed. The PCR results were positive to Histoplasma capsulatum in both studies. The diagnosis was disseminated histoplasmosis and received Liposomal amphotericin B and oral Itraconazol, with improvement in the CT scans.

Case 2. A 3 year old girl who underwent a liver transplant due to biliary atresia under tacrolimus immunosuppression presents multiple episodes of cell rejection, biliary pathology and EBV lymphoproliferative syndrome. She presents periocular cellulitis with suborbital ulceration. A biopsy was done from the base of the lesion, which showed Leishmaniasis. The final diagnosis was cutaneous leishmaniasis. She was treated with Liposomal amphotericin B showing excellent evolution.

Conclusions: Healthcare, environmental exposure, comorbidities and the use of potent immunosuppression to prevent organ rejection confer significant risks for infection in PLT. Early diagnosis of opportunistic infections is crucial for patient therapy and outcome.
Keywords: None
URINARY TRACT INFECTIONS IN FEBRILE CHILDREN PRESENTING TO EMERGENCY: SPECTRUM OF BACTERIA AND ANTIBIOTIC SUSCEPTIBILITIES

Jus Rakhra¹, Hasantha Gunasekera ¹, Gabrielle Williams¹, Ben Marais¹, Jonathan Craig¹
¹The Children's Hospital at Westmead, Sydney, Australia

Background and aims: Urinary tract infections (UTI) are common serious bacterial illnesses in pyrexial children. We describe the characteristics of children presenting with febrile UTI, pathogens and antibiotic susceptibilities.

Methods: All children <5 years presenting to our Emergency Department (ED) with febrile illnesses in 2004-2006 & 2007-2009 were included in the FEVER study. We extracted data on all children with UTIs.

Results: Among 41735 febrile illnesses, there were 1202 confirmed UTIs. The most common pathogens were E. coli (69.4%), Proteus mirabilis (7.7%) and Klebsiella sp (6.8%). Initial antibiotics were given intravenously (46.6%), orally (19.8%), or intramuscularly (1.9%), while 381 children (31.7%) received no antibiotic in the ED. Our guideline recommendation (ampicillin and gentamicin) was used for 398 children (33.1%) of whom 36 (9.0%) had organisms resistant to this combination. Across the two time periods, we found no significant differences in pathogen type; ESBL prevalence (1.5% vs. 1.6%, p=0.976); antibiotic sensitivities for: ampicillin (35.5% vs. 32.4%, p=0.58); gentamicin (82.2% vs. 72.2%, p=0.20); and Cotrimoxazole (62.6% vs. 55.7%, p=0.92).

Conclusions: We found no benefit from adding ampicillin to gentamicin as first line treatment for UTI. Cotrimoxazole was an effective oral alternative. We found no changes in pathogen spectrum or ESBL prevalence from 2004 to 2009.

Keywords: Antibiotic susceptibility pattern, Urinary Tract Infections
VITAMIN D LEVEL IN PEDIATRIC INTENSIVE CARE UNIT (PICU) PATIENTS: ITS RELATION TO SEVERITY OF ILLNESS

Abeer Abd Elmoneim 1, 2, Reham Al-Rehaili 2, Marwah Al-Rehaili 2, Marwah Lafi Al-Rehaili 2, Amal Alrehaili 2, Sherouq Alrohily 2, Abd Alrahman Alhojaili 3, Ehab Abd EL-moneim 1, 2
1 pediatric, Sohag University, Sohag, Egypt, 2 pediatric, Taibah University, 3 PICU, Maternity and Children Hospital, Almadinah Almounourah, Saudi Arabia

Background and aims: Vitamin D (Vit D) insufficiency is defined as level less than 30ng/ml, and Vit D deficiency as a level below 20ng/ml. Vit D deficiency is related to higher illness severity and death in adult intensive care unite (ICU) patients. Our study aims to detect the relation between of Vit D level on admission in PICU patients and their Length of Stay (LOS) or duration of mechanical ventilation.

Methods: In a prospective case control study, 145 patients of PICU of the Maternity and Children Hospital (MCH) in Almadinah Almounourah, KSA, were observed for Vit D level in the first 12 hours of their admission.

Results: Vit D deficiency in our study has a prevalence of 58.6%. Of 145 patients, those with Vit D deficiency were 85, 20 had Vit D insufficiency and 40 patients had normal levels.

Conclusions: There is increased prevalence of Vit D in our PICU children and it is significantly associated with LOS and days on ventilator while there it is not significantly associated with mortality rate.

Keywords: dietary supplementation, Pediatrics Intensive care, Vitamin D
A CASE REPORT: 16P11.2 MICRODUPlication LEADING TO NEURODEVELOPMENTAL DISORDERS.

Bárbara Nasr, Klicia Neves, Rodrigo Tostes, Cely Morcef, Maria Angelica Lima

1Universidade do Grande Rio, Rio de Janeiro, Brazil

Background and aims: 16p11.2 duplication is characterized by a spectrum of primarily neurocognitive phenotypes. It is estimated that 4:10,000 people with intellectual disability or speech and language difficulties present this mutation.

Methods: We report on a 1 year old child with history of primary pancytopenia, controlled seizures, severe global developmental delay and dysmorphic features. Born by elective cesarean, at term, small for gestational age and with microcephaly and history of perinatal asphyxia and neonatal jaundice. CGH Microarray revealed a de novo 455 Kb 16p11.2 microduplication. Family history is positive for a sibling with immunodeficiency who died at birth, suggesting that pancytopenia nor immunodeficiency is not linked to this region.

Results: Recurrent 16p11.2 rearrangements are associated with several neurodevelopmental disorders, including autism, mental retardation and epilepsy. It has been reported in up to 0.5% of patients with autism. The common 16p11.2 region includes 24 known genes, of which 22 are expressed in the developing human fetal nervous system.

Conclusions: A more comprehensive and systematic research is warranted to study the frequency and spectrum of malformations in the central nervous system in patients with recurrent 16p11.2 microduplications, since it is associated with variable clinical outcome and incomplete penetrance, most likely arising from haploinsufficiency of one or more genes.

Keywords: Chromosome 16p11.2, Neurodevelopmental disorders
A DE NOVO 3P13 DELETION INDUCED BY INVERSION OF 3P13 AND 3Q12 COMBINED WITH TRANSLOCATION OF 3Q13.1 AND 8Q24.2 IN A CHILD WITH DEVELOPMENTAL DELAY

Kye Hee Cho¹, Sung Han Shim², Min Young Kim¹

¹Rehabilitation Medicine, CHA Bundang Medical Center, Seongnam, ²Genetics Laboratory, Fertility Center, CHA Gangnam Medical Center, CHA University, Seoul, Korea, South

Background and aims: The identification of genetic rearrangement is important in discerning the etiology of developmental delay. We report a de novo balanced reciprocal translocation at 3q13 and 8q24.2 combined with deletion on non-translocated allele induced by inversion of 3p13 and 3q12 in a child with developmental delay.

Methods: A 5-years 3-months old girl was born at full term with birth weight of 2740g without any perinatal events. At 6 months she visited hospital for failure to thrive and was referred to rehabilitation specialist for generalized hypertonia. She was able to sit up by 11 months, and could crawl in quadripedal position by 16 months. She had distinctive facital features and wide web spaces on feet(Fig.1). Brain imaging study revealed delayed myelination(Fig.2). The functional assessments showed delay in language, cognition, and motor function(Table). On the latest follow up, she had mild scoliosis and leg length discrepancy(Fig.3).

Results: FISH revealed balanced reciprocal translocation at 3q13.1 and 8q24.2(Fig.4A). The aCGH showed 2.3 Mb deletions at the region of 3p13(Fig.4B). On reevaluation of the der(3) chromosome an inversion between 3p13 and 3q12; der(3)(pter→3p13::3q12→3p13::8q24.2→8qter) was revealed(Fig.5).

Conclusions: Of the three break points at 3p13, 3q12, and at 8q24.2, phenotype was related to deletion at breakpoint 3p13.

Image:
Keywords: deletion, genetic translocation, global developmental delay, inversion
CASE OF LATE DIAGNOSIS OF SMITH-LEMLI-OPITZ SYNDROME IN CHILD WITH COMPLAINTS OF GROWTH RETARDATION

Elena Frolova¹, Alla Migali¹, Nina Makretskaya², Anna Kolodkina², Anait Gevorkyan¹

¹Scientific Center of Children Health, ²Endocrinology Research Center, Moscow, Russia

Background and aims: Smith-Lemli-Opitz syndrome (SLOS) is characterised by multiple congenital anomalies, mental and growth retardation, caused by enzyme deficiency at the final step of cholesterol synthesis. The signs and symptoms of SLOS vary widely. The diagnosis is usually established in early childhood by geneticist or neurologist. We would like to present here the case of SLOS diagnosis in a 5-year-old girl consulting the endocrinologist with complaints of growth delay.

Methods: DHCR7 gene was analysed by Sanger sequencing.

Results: II pregnancy, II delivery, 2780g/48sm APGAR 8/9. At birth the child had multiple congenital anomalies, second and third toes syndactyly was among them. From the first months, there were mental, motor and growth delay and low level of total cholesterol (at 1.5-2.9 mmol/L).

At presentation (5 y.o.) her height was at -2.7 SD, the BMI at -2.3 SD. She had severe speech and mental development delay and marked congenital abnormalities: II-III toe syndactyly (bilateral), big round eyes, micrognathia, open anterior nostrils, big dysplastic auricles, weak muscle tone. Total cholesterol level was 2.95 mmol/L. Sequencing of DHCR7 gene revealed heterozygous mutations c.928G>C p.D310H and c.1295A>G p.Y432C. The first one is novel. Cholesterol replacement was started.

Conclusions: A case of late diagnosis of SLOS in a child with complaints of growth retardation is presented. It is not yet clear whether c.928G>C p.D310H mutation is compatible with partial defect of DHCR7 translation, which could explain less severe clinical features in infancy.

Keywords: SMITH-LEMLI-OPITZ SYNDROME, GROWTH RETARDATION
CASE REPORT: NIEMANN-PICK DISEASE TYPE C.
Bárbara Nasr* ¹, Cely Morcet¹, Maria Angelica Lima¹
¹Universidade do Grande Rio, Rio de Janeiro, Brazil

Background and aims: Niemann-Pick disease type C (NPC) is an autosomal recessive disease, characterized by accumulation of unesterified cholesterol. The classic presentation occurs in mid-to-late childhood with the insidious onset of ataxia, vertical supranuclear gaze palsy and dementia.

Methods: We report on a patient with progressive cognitive decline after the age of 12yo with decreased school performance, cerebellar ataxia and difficulty of performing routine tasks. No similar family history. Clinical exam uncovered impaired walking in tandem, dysdiadochokinesia, dysarthria, dysphagia, deep reflexes exalted in upper and lower limbs and vertical supranuclear gaze palsy. Further investigation, revealed splenomegaly, cerebellar atrophy, low chitotriosidase, an inconclusive filipin test and mutation of NPC1 gene, confirming diagnosis and allowing start supportive care and Miglustat.

Results: There is no cure for NPC but Miglustat has shown promise in slowing the progression of the disease. Hence, be able to recognize the disease is critical to delay the progression of symptoms through the introduction of early treatment. Therefore, the pediatrician must be aware for signs and symptoms of a storage disease with neurodegeneration, specially visceromegaly and regression.

Conclusions: NPC has an estimated 500 cases diagnosed worldwide. It is believed, however, the number of people affected by NPC is higher. It is not uncommon for a family to spend several years seeking a diagnosis before NPC is identified.

Keywords: Niemann-Pick disease type C
Background and aims: 3M syndrome is an autosomal-recessive disorder characterized by prenatal and postnatal growth retardation, facial features and normal intelligence. Uptil now, mutations in either CUL7, OBSL1 or CCDC8 have been identified in the etiology.

Methods: Clinical and molecular features of 17 patients from 13 families with 3M syndrome were evaluated.

Results: Seven distinct CUL7 or OBSL1 homozygous mutations were identified in 10 patients. Of mutation positive patients, 4 CUL7 (n=5/10, 50%) and 3 OBSL1 (n=5/10, 50%) mutations were detected. Although no genotype-phenotype correlation was established in 3M syndrome so far, birth weight of patients with CUL7 mutation was significantly lower than the patients with OBSL1 mutation (p=0.016).

Conclusions: CUL7 and OBSL1 mutations were detected in equal frequency in the present study which might be an indicator of a founder effect in Turkish population. A group of patients with no mutations shared similar clinical and radiological features suggesting the involvement of additional gene/genes yet undefined in the common growth pathway.

Keywords: 3M syndrome, CUL7, OBSL1, CCDC8, consanguineous marriage
Background and aims: Problems, connected with a trigger mechanism of thrombosis at secondary cardiomyopathy is relevant. We determined the functional properties of the haemostatic system in children with cardiovascular diseases.

Methods: There were studied 20 patients with cardiomyopathy and 13 children with Hunter syndrome. The comparison group consisted of 20 healthy children. In plasma there were studied haemostatic parameters and platelet aggregation.

Results: In plasma haemostasis statistically significant differences (p<0.05) were observed in activated partial thromboplastin time (median - Me 39 seconds), reflecting a violation on the inner path of blood coagulation and in C protein system (p<0.05). We observed statistically significant differences in aggregation with thrombin (p<0.05) in patients with cardiomyopathy, at that hyperaggregation with thrombin (median 89 U; 95% CI: 33-146) was detected in the majority of patients (60%) with cardiomyopathy. Among patients with Hunter syndrome, we obtained data on platelets hypoaggregation with thrombin (Me - 46 U) and ADP (Me 26.5 U), compared with healthy children (Me 79 U and 44.5 U, respectively).

Conclusions: Violation of the inner path of plasma haemostasis (reduction of anticoagulation system activity) and platelets hyperaggregation with thrombin receptor activator can be regarded as a predictor of thrombotic status. An initial assessment of platelet function contributes to the proper selection of suitable drugs, and dynamic observation of patients helps in correction of possible violations.

Keywords: Cardiomyopathy, Hunter syndrome, thrombosis
CONGENITAL ANOMALY: A SIGNIFICANT CONTRIBUTARY FACTOR TO HIGH NEONATAL MORTALITY RATE IN NIGERIA

Olubunmi Lawal 1 on behalf of Lawal Olubunmi, Tope Obasa 2, John OKENIYI 3, Eugene Onu 4, 5, Iliya Jalo Jalo 6, Isa Abdulkadir 7, Andrew Mbewe 8, Remi Akapa 9, Musilimat Faleye Fakeye 10, Olugbenga Mokunolu 10 and Spina Bifida and Hydrocephalus Care Foundation

1Research and Surveillance, Spina Bifida and Hydrocephalus Care Foundation, Abuja, 2Paediatrics, University of Ilorin Teaching Hospital, Ilorin, 3Paediatrics, Obafemi Awolowo University Teaching Hospital, Ife, 4Research and Surveillance, Center for Clinical Care and Clinical Research Nigeria, 5Research and Training, Center for Clinical Care and Clinical Research, Abuja, 6Paediatrics, FMC Gombe, Gombe, 7Paediatrics, Ahmadu Bello University Teaching Hospital, Zaria, 8New Born Cluster, World Health Organization, Abuja, 9Paediatric, University of Ilorin Teaching Hospital, Ilorin, 10Paediatric, Ahmadu Bello University Teaching Hospital, Zaria, Nigeria

Background and aims: Background: Nigeria lack birth defects surveillance as such, no one knows the magnitude of congenital anomalies, hence no attention paid to the burden associated to congenital anomalies. Reporting congenital anomalies will reveal the burden, concerted effort for prevention as well as a national support for new-born and families of children with defects.

Aim: To reveal the contribution of congenital anomalies on the outcome of pregnancy, raise awareness and develop a framework for uniform and sustainable data generation and surveillance.

Methods: A five-year (2009 – 2013) retrospective audit of available data from six regional tertiary health facilities and a focused group discussion at the first ever national experts meeting on birth defect, surveillance and prevention. Contribution of birth defects to neonatal mortality was established.

Results: It was observed that as at yet, there was inconsistent and poor record keeping. Nonetheless, on average birth defects constitute 44/1,000 neonatal admissions and 9/1,000 of neonatal deaths. The leading defects involved the gastrointestinal tract (10.4/1,000 admissions) and the central nervous system (10.1/1,000 admissions).

Conclusions: Contribution of birth defects to neonatal morbidity and mortality in Nigeria is substantial but there is no systematic means of surveillance, hence the need to establish a comprehensive birth defect register. This was generated and suggested for use at all tiers of health facilities nationwide. Other recommendations to the various problems discussed were highlighted.
Keywords: birth defects, congenital anomalies, neonatal mortality, Surveillance
DENTAL FINDINGS IN PATIENTS WITH MUCOPOLYSACCHARIDOSIS 1 (HURLER SYNDROME) AFTER BONE MARROW TRANSPLANTATION

Reinhard Schilke¹, Werner Geurtsen¹, Lorenz Grigull²

¹Conservative Dentistry, Periodontology and Preventive Dentistry, ²Pediatric Hematology and Oncology, Hannover Medical School, Hannover, Germany

Background and aims: To date, the treatment of choice in patients with Mucopolysaccharidosis 1 (MPS1H) is allogeneic hematopoietic stem cell transplantation (HSCT) as early as possible after diagnosis. Progressive psychomotor deterioration can be stopped by HSCT, while skeletal problems progress to varying degrees. Long-term dental aspects of MPS1H after HSCT have only been documented insufficiently.

Methods: 8 children with MPS1H after HSCT were annually examined prospectively by one dentist (2 boys, 6 girls; mean age at the first examination: 4½ years; mean monitoring period: 5 years). None of the patient received enzyme replacement therapy after HSCT.

Results: The following symptoms were observed: hypoplasia of mandibular condyle (5/5), hypodontia (6/8), microdontia (3/8), root stunting (7/8), delayed dental development (4/8), ectopic eruption of first permanent maxillary (5/8) or mandibular (6/8) molar with root resorption of second primary molar, dystopic germ position of molars (8/8), malocclusion (6/8).

Conclusions: This cohort of MPS1H-patients after HSCT shows a variety of oral symptoms. These are partly attributable to the disease, partly associated to the HSCT and reduce the quality of life of patients. In order to initiate therapeutic measures in time, the patient should be continuously monitored dentally and orthodontically as an integral part of an interdisciplinary care concept.

Keywords: Craniofacial, Dentistry, Hurler syndrome, Teeth
EVALUATION OF SPINAL ULTRASOUND FINDINGS IN BABIES WITH LUMBOSACRAL ANOMALY
Shivanand Hebbandi¹, David Greinke²
¹Paediatrics, Redland hospital & University of Queensland School of Medicine, ²Medical imaging, Redland hospital, Cleveland, Australia

Background and aims: Sacral dimples are common minor congenital abnormality. Occult spinal dysraphism (OSD) is characterized by skin-covered lesions mostly localized in the lumbosacral area. Spinal ultrasound (SUS) is the first-line investigation in suspected spinal dysraphism.

Aims: To evaluate spinal UltraSound findings in babies referred with lumbosacral abnormality and to determine if any relationship between presence of sacral dimple and spinal dysraphism.

Methods: Retrospective data collection of all babies who underwent spinal ultrasound in Redland hospital from 12/12/2011 to 11/12/2015 were identified from computerised medical imaging radiology information system (MIRIS). Indication for imaging, ultrasound results and information on further imaging if any are reported.

Results: 172 babies were referred for spinal ultrasound; data was available for 157 babies. A single indication (sacral dimple) was recorded for 144 babies, 2 or more indications (sacral dimple plus hair or skin tag or haemangioma) for 13 babies. None had spinal dysraphism. 4 of 157 (2.54%) ultrasound images showed some variations of no clinical significance; they were 3mm cyst in filum terminale, 2 and 3 mm fibrous tract extension to the coccyx, thickened filum terminale. All babies had normal neurological examination.

Conclusions: SUS performed for sacral dimple is unlikely to detect spinal dysraphism. Sacral dimple is a poor marker for occult spinal cord pathology.

Keywords: sacral dimple, spinal ultrasound (SUS), occult spinal dysraphism (OSD)
Genetics, Congenital Anomalies

NOVEL CFTR GENE MUTATIONS IN CYSTIC FIBROSIS RUSSIAN PATIENTS USING NEXT-GENERATION SEQUENCING

Kirill Savostyanov 1, 1, Alexandr Pushkov 1, Olga Simonova 1, Yulia Gorinova 1, Leyla Namazova-Baranova 1, Alexandr Baranov 1

1Scientific Center of Childrens Health, Moscow, Russia

Background and aims: Cystic fibrosis (CF) is an inherited disease characterized by the buildup of thick, sticky mucus that can damage many of the body's organs. The aim of our work was to find pathogenic variants of CFTR gene using NGS method.

Methods: We examined 36 children aging from 1 month to 17 years with the clinical picture of cystic fibrosis and high values of nanoduct sweat conductivity measurement. All coding, intronic, promoter, 5' and 3' UTR region of CFTR gene were investigate on 454 next-generation sequencing platform, using SeqCapEZ technology.

Results: As a result in all patients we revealed pathogenic mutations in CFTR gene, three of them are novel. Two were nonsense mutations: c.252T>A, p.Tyr84*; c.1488G>A, p.Trp496* and one – missense: c.4298A>G, p.E1433G. The most frequency mutation was c.1521_1523del, p.Phe508del (51%), as in most of the populations inhabiting the globe. Moreover, this method able to detect pathogenic gene variant c.3718-2477C>T, located deep in the intronic region.

Conclusions: Our method allows to accurately diagnose cystic fibrosis, significantly reducing the amount of material costs of the study.

Keywords: Cystic Fibrosis, next generation sequencing
NOVEL MUTATIONS AND GENETIC DIAGNOSIS OF HERITABLE DISORDERS OF CONNECTIVE TISSUE USING NEXT-GENERATION SEQUENCING (NGS).

Kirill Savostyanov¹, Alexandr Pushkov¹, Tea Margieva¹, Nato Vashakmadze¹, Guzall Yakhyaeva¹, Leyla Namazova-Baranova¹, Alexandr Baranov¹

¹Scientific Center of Children's Health, Moscow, Russia

Background and aims: Heritable disorders of connective tissue - is a group of rare genetic disorders caused by impaired synthesis or breakdown of proteins of the extracellular matrix of connective tissue, leading to disruption of its structure affects the bones, ligaments, eyes, heart, and blood vessels.

Methods: We studied genomic DNA samples obtained from 36 patients with phenotype of heritable disorders of connective tissue to identify the spectrum of mutations in COL1A1, COL1A2, COL3A1, COL5A1, COL5A2, COL2A1, FBN1, TNXB, FGFR3 and FLNB genes by NGS.

Results: 26 patients (72%), we identified mutations that can lead to the development of inherited connective tissue diseases. In ten patients we found mutations in COL1A1 gene (38.5%), one of them c.493delinsTA (p.Tyr165X) was novel nonsense mutation. In seven patients we found mutations in COL1A2 gene (27%), two of them c.596G>A (p.Gly199Asp) and c.2450G>A (p.Gly817Glu) were missense novel mutations. Three patients (11.5%) were carriers of mutations in FBN1 gene, two of them c.6710T>G (Val2237Gly) and c.6025G>A (Glu2009Lys) were novel. Pathogenicity of novel mutations were confirmed by silico analysis.

Conclusions: Our results confirm that the modern technology of new generation sequencing allows you to quickly and accurately detect mutations in the genes for the analysis of extended regions of the genome and successfully used for medical diagnosis.

Keywords: genes, inherited connective tissue diseases, mutations, NGS
OSTEOGENESIS IMPERFECTA IN CHILDREN IN THE RUSSIAN FEDERATION

Guzal Yakhyeva¹, Leyla Namazova-Baranova¹, Tea Margieva¹, Olga Chumakova¹, Alexander Baranov¹
¹Scientific Center of Children’s Health, Moscow, Russia

Background and aims: Osteogenesis imperfecta (OI) is a genetic disorders, characterized by low bone mass, bone fragility, which are associated with long-term high-cost treatment and disability. Planning specialized care to patients, evaluate the quality of treatment can be collected through the establishment of the register. Our aim is to evaluate the validity of the inclusion of the patient in the Federal Register.

Methods: Depersonalized medical records was collected from 335 pediatric patients from 61 regions of Russia

Results: Gender composition represented by 331 patients: 135 girls, 196 boys. Family history positive in 128 (38.6%) cases. The types of OI are clinically established only in 117 (35.3%) patients, of which type I–69 (58.9%) patients, type-III 32 (27.3%) patients, type-IV 16 (13.6 %) patients. Fractures were revealed in 104 (31.4%) at birth, in 146 (44%) patients fractures continued in the first 6 months of life, in 295 (89.1%) patients had fractures after 6 months of life. Deformation of the upper limbs are observed in 51 (15%) patients, the lower limbs in 174 (52.5%) patients. Bisphosphonate therapy take 123 (37.1%) patients.

Conclusions: The OI patients live with their family and do not get adequate counseling from the medical community, due to the lack of uniform standart of diagnosis and therapy. It is necessary to develop the federal guidelines for the diagnosis and treatment of osteogenesis imperfecta in children.

Keywords: bone fragility, fractures, osteogenesis imperfecta
Genetics, Congenital Anomalies

PRADER-WILLI SYNDROME BODY NUTRITION SUPPORT CASE REPORT
Shuyin Mao*1
1nutrition department, chimei medical center, tainan, Taiwan, China

Background and aims: genetic defect from the father, lighter hair color, almond eyes developmental delay, sexual function hypoplasia. There thermoregulation from infancy problem of poor, When the baby was born this disease is more pale skin, and there is the phenomenon of low muscle tone, sucking some difficulties first year

Methods: Mother of a 29-year-old G2P1AA1, pregnancy weeks 39 weeks (104/4/29), due to the pregnancy third child IUGR, and continued regular uterine contraction mining c / s 2556gm delivered a baby boy, Height: 48cm, birth Apgar score7 → 8 (1min → 5mins), due to respiratory failure and poor activity later admitted SNB Care, was discharged in stable condition, good appetite because of sick infants and mothers worry about lack of nutrition, but the medical team feel sick infants overweight, to weight control and diet hope not too fast growth rate, height, some sick infants have administered growth hormone to fight.

Results: Use of a nasogastric tube feeding body, now 10 months old body weight 10.8 kg, body height 71cm, formula milk a day on average about 850CC, and another non-staple food to eat two meals of about 250 grams, but sometimes still hungry

Conclusions: Literature that Prader-Willi syndrome disease at 1 year old baby sucking and swallowing dysfunction ago 1 year ago typically grow in poor, after 2-4 years getting good appetite should pay attention to weight control, but this case is now 10 months old, weight> 97%, required strict attention to the rate of weight gain

Keywords: PDW syndrome
PREVALENCE OF BIRTH DEFECTS AT THE PHILIPPINE GENERAL HOSPITAL FROM 2011 TO 2014

Ebner Bon Maceda¹, Maria Melanie Liberty Alcausin¹
¹Pediatrics, University of the Philippines, Manila, Philippines

Background and aims: In the Philippines, there is limited data on birth defects despite it being in the top ten causes of national infant mortality for the past five decades. This study aims to determine the prevalence of birth defects among neonates born at the Philippine General Hospital (PGH) from January 2011 to December 2014.

Methods: All deliveries with birth defects from January 2011 to December 2014 were coded using the International Classification of Diseases -10. The codes were tallied and classified as either an isolated, part of a recognizable syndrome, chromosomal syndrome or multi-malformed case. Period prevalence was calculated.

Results: Of the 20,939 deliveries from 2011 to 2014, 574 babies had a diagnosis of at least one birth defect. A total of 934 birth defects were identified and counted. Of the 574 babies with birth defects, 47.56 % are with isolated defects; 22.65 % with associated defects in multi-malformed cases; 18.47% with defects that are part of recognizable syndromes; and 11.32% with defects as part of chromosomal syndrome.

Conclusions: The most common birth defects in this cohort of newborns were similar to those reported internationally. Our data show that one in 36 births have at least 1 birth defect. With this study showing the burden of the disease, practical strategies towards primary and secondary prevention of birth defects must be looked into.

Keywords: birth defects, congenital anomalies
**Genetics, Congenital Anomalies**

**RUBENSTEIN TAYBI SYNDROME: AN UNUSUAL CAUSE FOR FEEDING AND LEARNING DIFFICULTIES IN THE CHILD HEALTH DEPARTMENT, ACCRA, GHANA**

Ebenezer Badoe* 1, 2

1 child Health, school of Medicine, University of Ghana, 2 Child Health, Korle Bu Teaching Hospital, Accra, Ghana

**Background and aims:** Dysmorphic syndromes are not usually identified and classified at the Paediatric department. There are no reports of Rubenstein-Taybi syndrome in the Ghanaian medical literature. The aim was to determine if the syndrome existed in Ghana.

**Methods:** Active case ascertainment of Rubenstein Taybi syndrome at the Department of Child Health, Korle Bu Teaching Hospital, Accra. Clinical characteristics and clinical photographs with permission were documented. Study covered 2005-2015

**Results:** 10 cases of Rubenstein Taybi were recorded. 5 males and 5 females. 6 cases were diagnosed in the neonatal period and 4 at school age. All presented with feeding difficulties and 4 who were followed up with learning difficulties

**Conclusions:** Rubenstein Taybi syndrome exists in the Ghanaian population

**Keywords:** Ghana, Rubenstein-Taybi syndrome
Genetics, Congenital Anomalies

SCHOOL PERFORMANCE FOR CHILDREN BORN WITH CLEFT LIP OR PALATE: POPULATION-BASED RECORD LINKAGE STUDY

Jane Bell¹, Camille Raynes-Greenow², Robin Turner³, Carol Bower⁴, ⁵, Natasha Nassar¹
¹Menzies Centre for Health Policy, ²Sydney School of Public Health, University of Sydney, ³School of Public Health and Community Medicine, University of New South Wales, Sydney, ⁴WA Register of Developmental Anomalies, King Edward Memorial Hospital, ⁵Telethon Kids Institute, Perth, Australia

Background and aims: Orofacial clefts (OFC) may lead to chronic adverse health and developmental outcomes. We aimed to compare the proportion of children with and without OFC meeting the national minimum standards in two standardised school test programs (WALNA, NAPLAN).

Methods: We conducted a cohort study using linked population-based data. All children live born in Western Australia 1980-2010 with OFC (n=1509) were compared with a random sample of 6603 children born without OFC.

Results: Most students met national minimum standards. Compared to children without OFC, children with cleft palate only (CPO) were less likely to meet minimum standards for NAPLAN reading (aOR 0.57, 95%CI 0.34, 0.96) and grammar and punctuation (aOR 0.49, 95%CI 0.32, 0.76), WALNA writing (aOR 0.66, 95%CI 0.47, 0.92), and WALNA and NAPLAN numeracy (aOR 0.64, 95%CI 0.43, 0.95; aOR 0.47, 95%CI 0.28, 0.82). Children with cleft lip and palate had lower odds for reaching the spelling standard (NAPLAN aOR 0.52, 95%CI 0.29, 0.94). Children with cleft lip only had similar odds for reaching all minimum standards.

Conclusions: Children born with OFC, particularly children with CPO, should be monitored to identify learning difficulties and enable intervention to maximise school attainment and longer term outcomes.

Keywords: cleft lip, cleft palate, medical record linkage, school achievement, Western Australia
A RARE CASE OF LIPOBLASTOMA

Bilal Altan¹, Yunus Burak Bayır¹, Engin Burak Bulut¹, Bahadir Caliskan¹, Ahmet Guven¹, Suzi Demirbag¹, Ilhami Surer¹ and Gulhane Military Medical Academy
¹Pediatric Surgery, Gulhane Military Medical Academy, Ankara, Turkey

Background and aims: Lipoblastoma is a rare, benign, rapidly enlarging and encapsulated tumor arising from embryonic white fat. It is usually seen in the limb and trunk in children under 3 years old. Only a few lipoblastoma cases located in the head or neck have been reported. It is categorized in two types: the circumscribed lipoblastoma (70%), which is a superficial and encapsulated lesion, and diffuse lipoblastomatosis (30%) which is poorly circumscribed and deeply located with infiltrative growth pattern that may affect surrounding muscle structures.

Methods: A 8-months-old female infant was admitted with a painless soft mass at the neck, enlarging rapidly especially at the last six months. At the physical examination, it was detected as a soft and immobile mass at the left posterior triangle. The patient had no other symptom. Although USG showed that it was a clear-cut bordered 45x34mm hyperechoic solid mass, MRI revealed an encapsulated mass of 50x50x60mm with internal lobulation and fatty tissue characteristics. There was a 7mm distance with internal carotid artery and cranial nerve but no relationship could be demonstrated.

Results: The mass was totally excised with a careful dissection from internal carotid artery and accessory nerve under general anesthesia. Scalenius muscle was found totally destructed with fatty tissue invasion and a mass effect. Pathologic findings confirmed the diagnosing of lipoblastoma.

Conclusions: Lipoblastoma is a rare cause of pediatric head and neck masses. It should be considered at the presence of chronic, painless, and rapidly enlarging neck masses. The recommended treatment is the complete surgical excision.

Keywords: head or neck, Lipoblastoma
Hematology and Oncology

A SERTOLI-LEYDIG TUMOR IN A 3-YEAR-OLD GIRL: A CASE REPORT.

Ssoussi Addi Kawtar¹, Nsengiyumva Tharcisse¹, Weinblum Yael¹, Belhadi Baya¹, Lingier Pierre¹, Dehou Marie - Françoise²

¹Pediatrics, Edith Cavell Clinic, ²Laboratory of anatomo-pathology, Pathologic Morphology Center, Brussels, Belgium

Background and aims: Sertoli Leydig tumor is a gonadal tumor and more specifically a sex cord tumor and account for less than 0,5 of ovarian tumors.

Methods: We report the case of a 3-year-old girl hospitalized for gastroenteritis. She presented with abdominal pain, vomiting, diarrhea and fever. Biology showed an inflammatory syndrome with a CRP at 57.2 mg/L and white cells count at 18100/mm3 with 73% of polyneutrophiles. In the second day, we observed an unproductive diarrhea and rectal tenesmus. An abdominal ultrasound was realised and showed a mass above the bladder with a contact with the appendix which was dilated. The abdominal CT scan confirmed a liquid, multilobar, heterogeneous 88X55X65mm mass suggestive of appendicitis complicated by an abscess of the left annex. We begun an antibiotic therapy and a laparoscopic surgical exploration was planned.

Results: Laparoscopy revealed a cystic and hemorrhagic mass suspicious of a necrotic and twisted left ovarian teratoma. A left annexectomy and appendectomy were performed. The anatomo-pathology diagnosis was a Sertoli - Leydig tumor. The immuno-marking was positive for inhibin and a mutation for DICER gene was found. The Ki67 rate was inferior of 1%. A regular monitoring by abdominal ultrasound was programmed.

Conclusions: This case shows that we have to make the differential diagnostic with gonadal tumors for a girl with an abdominal mass.

Keywords: Sertoli Leydig Tumor, Sex cord Tumor, abdominal mass
ACUTE LYMPHOBLASTIC LEUKEMIA IN A 9YR OLD IMMUNOSUPPRESSED CHILD WITH PREDOMINANT GASTROINTESTINAL SYMPTOMS

Olusegun Adeniyi Adewuyi

Paediatric and child health, University of Limpopo, Medunsa campus c/o Life Hospital, Piet Retief, South Africa., Pretoria, South Africa

Background and aims: A 9 yr old boy unknown HIV status, seen at A&E with a 3-day hx of abd pain, diarrhea, cough, vomiting, loss of appetite, no fever; nil medical or surgical hx. O/E (-) resp distress, plane warts on the forehead, oral thrush, (-)pale, (-)dehydration,(+) generalized lymphadenopathy, no clubbing. BP 117/55 P 90, wt 24.4kg >25th cent, Ht 129cm >50th cent

Mild tenderness RUQ, (-) organomegaly, normal bowel sound, (-)ascites, normal male genitalia. (+) crepitations, normal S1S2. Urea 3.6mmol/L, Cr 44umol/L , ALT 48, Albumin 37g/L ,wcc 7.47, Hb 12.4, Plt 464,Neut 4.35(58%), Lym 2.14 (28.6%).HIV Elisa(+), VL 88235 cp/ml CD4 262 (7.06%).Serum ADA 14.3 PPD(-), AFB, geneXpert & culture(-). Normal AXR, CXR miliary pattern.

WHO stage IV dx with disseminated TB was diagnosed. TB Rx commenced; ARV initiated 1 mth after TB Rx started.

Methods: Presented 2-month later with vomiting, RUQ mass, & wt loss(-) fever, (-)cough (-)diarrhea.CT abd showed a 7.1 x5.4cm mass RUQ, (-)organomegaly, (-) ascites.

Wcc 11.12, Hb 11.2g/dl, Plt 353 Neut 5.0%(0.56) Lym 23.0% (2.56) Blast 67%(7.45) ESR 2mm/h, ALT 52. BM mildly hypocellular with 95% blasts.

Results: B-cell precursor ALL diagnosed; commenced chemo & now in remission with good virological and immunological response.No clinical & haematological evidence of leukemia at 1st visit, GI symptoms predominated until diagnosis of ALL made. PTB unproven but immune suppression often affects outcomes of TB invest & diagn, & probably unusual presentation of ALL

Conclusions: Leukemia may’ve unusual presentations in immune suppressed children with other associated HIV related diseases.

Keywords: children, HIV, leukemia, non-specific GIT symptoms
Hematology and Oncology

ANGIOMATOID FIBROUS HISTIOCYTOMA: AN UNUSUAL CASE REPORT

Eva Vasquez Gamarra¹, Raquel Garces Ghilardi¹, Mariela Burga Reyes¹
¹Department of Pediatrics, Edgardo Rebagliati National Hospital, Lima, Peru

Background and aims: Angiomatoid fibrous histiocytoma (AFH) is an uncommon, low-grade malignant soft tissue tumor of uncertain histogenesis. The majority of cases occur in the extremities, in children and young adults.

Methods: Case Report: We describe an unusual presentation of a 8-year-old female with a painful well-circumscribed mass located on her right upper back associated with anemia, weight loss, and fever of 3 months. Physical examination was significant for a firm, raised mass measuring 6x6x4 cm along the patient's right upper back, also we find hepatomegaly and proteinuria. An excisional biopsy was performed, and the final pathology revealed an AFH.

Results: Discussion: Presentation usually involves a painless, slow growing mass within the deep dermis and subcutis. Symptoms of anemia, weight loss, and fever are observed in a minority of cases, suggesting tumoral cytokine production. The diagnosis is made on the basis of histopathology and immunohistochemical studies. Half the cases have a strong desmin expression as our patient. Local recurrence has been reported in 11% of patients and distant metastasis in 1%. Management is with wide surgical excision and careful follow-up. If the tumor is unresectable or has metastasized, adjuvant chemotherapy may be helpful.

Conclusions: The tumor is rare with low malignant potential, accounting for approximately 0.3% of all soft tissue neoplasms, albeit incidence may be underestimated due to overlapping histopathological findings. Wide surgical excision with clear margins and post-excisional monitoring is warranted.

Image:
Keywords: Angiomatoid fibrous histiocytoma, Low grade malignancy, Soft tissue neoplasm
CASE REPORT: HIV+ TANZANIAN BOY WITH SPONTANEOUS BLEEDING FOR 6 YEARS

Elizabeth Montgomery Collins¹, Harry Shen², Michelle Cornacchia³

¹Pediatrics, Section of Retrovirology & Global Health, Baylor College of Medicine/Baylor International Pediatric AIDS Initiative (BIPAI), ²Baylor College of Medicine, Houston, United States, ³Pediatrics; Medicine; and Medicine-Pediatrics, Baylor College of Medicine, Houston, United States

Background and aims: A 7-year-old HIV+ boy presents to an ER in the United States, stable, afebrile, and nontoxic, with bleeding from eyes, ears, and scalp. After a blood transfusion (which transmitted HIV to him) for malaria in Tanzania at 14 months old he spontaneously began bleeding most days, with hematochezia and hematuria most weeks, yet no underlying injuries were found when the blood was wiped away. Despite hospitalizations (up to 18 months long) in Tanzania he had no diagnosis made there.

Methods: Diagnosis was made by excluding other causes of bleeding, documenting episodes in clinic, and sending fluid from his bleeding scalp for microscopy.

Results: Common and rare blood and rheumatologic disorders were ruled-out. RBCs were confirmed in scalp exudate. After 10 wks of propranolol 0.25 mg/kg/d he had reduced frequency and quantity of bleeding.

Conclusions: Hematidrosis, a diagnosis of exclusion reported in the literature <20 times, is characterized by blood oozing spontaneously from unbroken skin & mucosa which makes it appear as if a patient is sweating blood, often during stress. Our patient had characteristic bloody sweat & tears when comfortable + when stressed in medical facilities. β-blockers, which helped decrease bleeding in our HIV+ boy, have been successful in treatment, as have benzodiazepines, atropine patch, cyproheptadine & psychotherapy to reduce stress levels.

Image:
Keywords: bleeding, hematidrosis
Background and aims: Apoptosis is the main mechanism that regulates cell life span and the elimination of damaged or infected cells. Our aim was to investigate the expression of Caspase 3, Caspase 8 and BCL-2 in Immune thrombocytic purpura (ITP) and whether the type of treatment could affect it.

Methods: We carried out a prospective study at hematology unit of Mansoura Children’s Hospital Center. It included thirty ITP children, ten chemotherapy related thrombocytopenia (CRT) and ten healthy children as control group. The mentioned apoptotic markers were measured in three groups by flow cytometry. Then, children in ITP group were randomized according to base line apoptotic markers levels into sixteen child (9 males & 7 females) received IVIG and 14 child (7males & 7females) received Methyl prednisolone. Finally, post-treatment apoptotic markers were evaluated.

Results: Expression of caspases 3 and 8 was significantly higher in ITP group than CRT and control groups ($p<0.05$). Regarding BCL-2, the difference between groups was insignificant. Treatment with IVIG was associated with significant reduction in both caspases 3 and 8, and significant elevation of BCL-2 expression ($p<0.05$). On the other hand, methyl prednisolone was associated reduction of both caspase 8 and BCL-2 expression ($p<0.05$).

Conclusions: Pro-apoptotic markers are unregulated in ITP. Furthermore, IVIG treatment reduce the apoptotic activity in ITP.

Keywords: caspase 3, caspase 8, BCL-2, ITP
Hematology and Oncology

CHANGES IN LYMPHOCYTE SUBPOPULATIONS AND CD3+ HLA-DR+ IN CHILDREN WITH GAUCHER DISEASE

Azza A. Eltayeb*1, Asmaa M. Zahran2, Khalid I. Elsayh3, Khaled Saad3
1Pediatrics, Children University Hospital, 2Clinical Pathology, South Egypt Cancer Institute, Assiut University, 3Pediatric, Faculty of Medicine, Assiut University, Assiut, Egypt

Background and aims: Gaucher Disease (GD) is the most prevalent lysosomal storage disease. GD is associated with remarkable alterations in the immune system, and GD patients are more susceptible to infections and are at a higher risk of developing autoimmune disorders and malignancies. Aim: to determine the changes in lymphocyte subpopulations and activated T lymphocytes (CD3+ HLA-DR+) in children with GD under enzyme replacement therapy (ERT) managed in Assiut Children university hospitals.

Methods: This prospective case-control study was conducted among 18 children aged from 2-14 years (10 males and 8 females) with GD type 1 under enzyme replacement therapy (ERT) admitted to Assiut children university hospitals. Three-color flow cytometric immunophenotyping was used for determining the frequency of lymphocyte subpopulations and activated T lymphocytes in these patients.

Results: A significant increases was found in the frequencies of total lymphocytes, CD19+, CD3+, CD4+ and CD8+ in children with GD1 when compared to healthy control. The frequencies of activated T-Lymphocytes (CD3+ HLA-DR+), activated CD4 (CD4+ HLA-DR+) and activated CD8 (CD8+ HLA-DR+) were significantly higher in GD1 as compared to healthy children.

Conclusions: The increased proportion of activated T-lymphocytes in children with GD1 raises the issue of their involvement in the pathogenesis of the immune dysfunction seen in these patients. Activated T-lymphocytes could play a role in the clinical course of GD1.

Keywords: Activated T Lymphocytes, Children, Gaucher Disease
Background and aims: Pediatrician may associate alterations in blood count to other diseases before to suspect any hematologic disease. Child abuse syndrome (CAS) may present many signs as number of systems affected. The differential diagnosis is a challenge

Methods: Two cases of patients who arrived to emergency department in a first level hospital. CAS was suspected before they were referred to the hematology service for a correct diagnosis

Results: Male 2 years 5 months. August 20, patient bit a cable. No physical alterations. August 23, fell and sprained left ankle, splint placed. October 4, fever 39°, bacterial pharyngitis is diagnosed. October 6, fracture left lateral malleolus, splint is replaced. October 22, fever, general discomfort, abdominal pain. PE: pale skin, systolic heart murmur, abdominal pain, left ankle with pain, poor hygiene. CAS is suspected and paraclinical are solicited. Anemia leukopenia thrombocytopenia. Referred to hematology service on October 25. Acute lymphoblastic leukemia


Conclusions: In this cases the suspicion of CAS was the cause of soliciting more paraclinical exams, alterations in blood count led to correct diagnosis. A complete blood count can help to establish the differential diagnosis of child abuse syndrome

Keywords: child abuse syndrome, emergency department, Hematologic malignancies
Hematology and Oncology

CLINICAL CHARACTERISTICS AND MANAGEMENT OF TRANSFUSION DEPENDENT BETA-THALASSAEMIA MAJOR IN A SPECIALISED CENTRE IN SRI LANKA

Wathsala Hathagoda¹, Sachith Mettananda*²
¹Colombo North Teaching Hospital, ²Department of Paediatrics, University of Kelaniya, Ragama, Sri Lanka

Background and aims: Thalassemia is an inherited disorder of hemoglobin characterized by severe anemia. In this study we aim to evaluate the clinical characteristics, management and complications of patients with transfusion dependent beta-thalassemia at a specialized center.

Methods: All patients with transfusion dependent beta-thalassemia attending the Paediatric Thalassemia Centre of Colombo North Teaching Hospital, Sri Lanka were recruited to the study. This was conducted in 2015. Interviewer-administered questionnaire was used to collect data.

Results: 16 patients were recruited. Mean age is 6.1±3.3 years. Mean age of diagnosis is 4.6±2.0 months. All patients received first blood transfusion in 1st year of life. Majority (11/16) were transfused 4-weekly whereas 3/16 patients require frequent transfusions. 3/16 has growth failure, 2/16 has short stature and 5/16 has facial features. Average pre-transfusion hemoglobin level was low (<9g/dl) in all but three patients. 15/16 patients were on iron chelator therapy - most common was oral deferasirox (12/16). Satisfactory serum ferritin level (<1000ng/ml) was seen only in 4/16 patients; in 5/16 ferritin was dangerously high (>2500ng/ml).

Conclusions: Under-transfusion and iron overload are still common problems among patients with beta-thalassaemia in Sri Lanka. Development of low cost iron chelators is timely to reduce the disease burden of iron overload.

Keywords: iron overload, thalassaemia
ENURESIS: AN UNDER REPORTED ADDITIONAL BURDEN ON THE NIGERIAN CHILD LIVING WITH SICKLE CELL DISEASE (SCD)?

Oluwafunmilayo Oluwabiyi¹ ¹, Rahman OKEOWO¹
¹PAEDIATRICS, MATERNAL AND CHILD CENTRE IKORODU GENERAL HOSPITAL, LAGOS, Nigeria

**Background and aims:** Paediatric subjects with (SCD) are at greater risk of exhibiting enuresis when compared to the general population. Each year, >50% of all children delivered globally with SCD are born in Nigeria. This survey is aimed at determining the prevalence of enuresis in Nigerian children with SCD, perceived causes, interventions used and possible contributory factors.

**Methods:** A prospective cross sectional study was done using a structured validated questionnaire which was administered to caregivers of 91 children with SCD aged 5-18 years attending the Sickle Cell Clinics of Isolo and Ikorodu General Hospital Lagos and 72 sibling control after an informed consent was obtained.

**Results:** Prevalence of bedwetting among SCD subjects was 47.3% while that among sibling control was 29.7%. Of the affected subjects, 81% had nocturnal enuresis while 83% had primary enuresis. 94% of caregivers had sought no previous medical attention with 14% convinced that the child’s genotype may be a causative factor for enuresis. Average age of dryness among non SCD sibling=3.2±1.5yr while that among subjects with SCD=5.0±2.8yrs. (p=0.004)

**Conclusions:** Subjects with SCD were more likely to bed wet and achieve dryness at an older age compared with their sibling. The presence of enuresis should be **actively** sought in this group of children.

**Keywords:** ENURESIS, NIGERIAN, SICKLE CELL DISEASE
**EVALUATING THE FREQUENCY OF HOSPITALIZATION, AND DEATH CAUSES OF PATIENTS WITH BETA-THALASSEMIA MAJOR IN ALI-ASGHAR HOSPITAL DURING 2006 TO 2010**

Khadijeh Arjmandi Rafsanjani¹, Anahita Esmaeeli²

¹Iran University of Medical Sciences - Ali Asghar Children Hospital, ²Ali-Asghar Children Hospital, Tehran, Iran

**Background and aims:** Patients with Beta-Thalassemia major (BTM) are frequently hospitalized due to complications of the disease. Because of unclear hospitalization causes in these patients, we conducted this study to assess the prevalence of different causes of hospitalization and death.

**Methods:** In this cross-sectional study, patients with BTM, who admitted to Ali Asghar Hospital from 2006 to 2010 were studied retrospectively. Study variables included age, sex, cause of hospitalization, frequency, serum ferritin, outcome of patients in the hospital and cause of death which were obtained from patient records. Finally, all the collected data were analyzed using SPSS 16 software.

**Results:** A total of 146 patients with BTM, with a total of 241 hospitalization, were included. 71 patients (48.6%) were male and the mean age of patients was 13.8 ± 6.6 years (range 1 to 33 years). The most common causes of hospitalization of patients included: 66 cases splenectomy (27.4%), infectious diseases, 50 (20.7%), hematologic problems 27 (11.2%), hypertension and cardiac 31 patients (12.9%), digestive system problems 25 cases (10.45), endocrine system diseases 25 patients (10.4%), respectively. Among all patients, only 4 patients (1.7%) died during admission. Two cases of these deaths were due to sepsis. Others included a GVHD case and a heart failure after a splenectomy.

**Conclusions:** According to the results of this study, the most common cause of hospitalization in patients with BTM are splenectomy and infectious diseases. Identifying these causes can be carried out for preventive measures to improve survival in these patients.

**Keywords:** None
Hematology and Oncology

GETTING PARENTS WHOSE FAITH TRADITION FORBIDS BLOOD TRANSFUSION TO ALLOW TRANSFUSION TO OCCUR THROUGH EFFECTIVE COMMUNICATION, WITHOUT RESORTING TO THE JUSTICE SYSTEM.

John Wu¹,² and Honorary consultant in social service, Caritas Hong Kong.
¹Pediatrics, University of Calgary, Calgary, Canada, ²social services, Caritas, Hong Kong, Hong Kong, China

Background and aims: Children requiring blood transfusion but whose parents belonged to a faith tradition that is opposed to transfusions of blood products often comes into conflict with health care workers. The author wishes to share the techniques in gracefully resolving these conflicts that he uses over the past 39 years as a pediatric hematologist without ever requiring the Justice system getting involved and the situation becoming confrontational.

Methods: Using three different actual patients, a 4 year old with sickle cell and red cell aplastic crisis, a baby with neonatal thrombocytopenia, and a 11 year old with aplastic anemia to demonstrate that with appropriate use of language and honest and open dialogue, transfusion of blood products was achieved without ever having to apply to the courts. How to communicate through:- 1. the language of faith, showing understanding of their faith, 2. mutual respect for each other’s faith, and 3. explaining the facts through scientific truth and their church teaching leading to understanding, will be outlined in the presentation. How to avoid long term social consequences of blood transfusion will also be addressed.

Results: The result was all patients that needed the blood product received it without the social services becoming the legal guardian and no confrontational conflict resulted.

Conclusions: Transfusions can be done without the late consequences such as the child becomes an outcast of the family and with parents thanking you despite of what you did, after child was discharged from hospital.

Keywords: Blood transfusion for children with a faith tradition that do not allow them to accept transfusion., Effective communication can result in the child receiving blood products without involving the court or social services., Social consequences after blood transfusions
IMPACT ON HOSPITALIZATION RATE AND TREATMENT REGIMEN FOLLOWING THE INTRODUCTION OF A NEW PROTOCOL FOR THE CARE OF CHILDHOOD ACUTE ITP

Roxane Labrosse¹, Uyen Phuong Nguyen¹, Caroline Chartrand¹, Melanie Vincent¹, Lydia Di Liddo², Yves Pastore³

¹Pediatrics, ²Pediatric Emergency, ³Pediatric Hematology-Oncology, CHU Sainte-Justine, Montreal, Canada

Background and aims: Childhood immune thrombocytopenia (ITP) is associated with low bleeding rate and frequent spontaneous remission, but children still receive platelet-enhancing therapies by fear of complications. We hypothesized that the introduction of a standardized SP would help reduce hospitalization rate and may reduce the intensity of pharmacological treatment in children diagnosed with acute ITP.

Methods: A retrospective chart review was performed on all new cases of ITP diagnosed before (January 2010 to December 2012) and after (January 2013 to December 2014) SP introduction.

Results: 91 patients were included in the study. The SP resulted in a 34% decrease in hospitalization rate (p<0.001) at diagnosis. Prednisone duration at diagnosis was significantly reduced (13.1 vs 5.8 days, p=0.004). Those older than 3 years old were 3.8 times less likely to be hospitalized (95% CI 1.94-7.61) and 2.3 times less likely to receive treatment (95% CI 1.2-4.3). There was no difference in the rate of persistent ITP (38% vs 30%, p=0.43), nor in serious bleeding complications (7% vs 5%, p=0.70).

Conclusions: The implementation of our SP significantly reduced hospitalization rates and length of prednisone treatment without any increase in disease complications.

Keywords: immune thrombocytopenia, ITP
LEUKAEMIA PRESENTING AS RECURRENT ACHES AND PAINS WITH NORMAL INITIAL BLOOD COUNTS

Joyce Ching Mei Lam*, Shui Yen Soh*
1Paediatric Subspecialties, KK Women's and Children's Hospital, Singapore, Singapore

Background and aims: Musculoskeletal aches and pains can be an early presentation of leukaemia. We describe two patients with acute lymphoblastic leukaemia (ALL) whose initial symptoms were musculoskeletal in nature. They had completely normal full blood counts (FBC) at first presentation. There was diagnostic delay as they presented multiple times before bone marrow biopsies were done.

Methods: The case records were retrospectively reviewed.

Results: Patient 1 presented to ED with chest pain. He was discharged with symptomatic treatment but reattended 2 weeks later with chest and neck pain. FBC was normal and he was referred to the Rheumatology clinic. He reattended a 3rd time with neck, chest and thigh pain. FBC showed new onset of anaemia and thrombocytopenia but no blasts. MRI showed abnormal marrow signals in the sacroiliac and vertebral bones. Bone marrow biopsy was diagnostic of ALL.

Patient 2 presented to ED with acute back pain. FBC was normal and he was discharged with symptomatic treatment. He reattended 5 days later with worsening lumbar and right thigh pain and was referred to the Rheumatology clinic. The FBC performed at the clinic 1 week later revealed thrombocytopenia and presence of blasts. Bone marrow biopsy was diagnostic of ALL.

Conclusions: Paediatricians should be aware of acute leukaemia as a differential diagnosis of children presenting with recurrent aches and pains who develop abnormalities in the FBC, despite completely normal initial blood counts.

Keywords: leukaemia, musculoskeletal, presenting symptoms
LOW PLASMA HEPcidIN LEVELS IN CONTROL SUBJECTS OF DIFFERENT PAEDIATRIC AGE GROUPS: RESULTS OF A PILOT STUDY FROM NORTHERN INDIA

Aditya Singh 1, Prateek Bhatia 1

1Pediatric Hematology-oncology, PGIMER, Chandigarh, India

Background and aims: Hepcidin a key regulatory molecule involved in iron homeostasis. Normal hepcidin range in adults is 20-260 ng/ml. However, paediatric studies are limited and define a relatively lower reference range than adults. The aim of present pilot study was to study hepcidin levels in normal paediatric cohort.

Methods: Paediatric cases were screened from OPD/Vaccinology clinic and those with normal hemogram, RBC indices and ESR were enrolled. 2ml EDTA sample was taken after informed consent and plasma stored at -20°C for ferritin and hepcidin analysis. Ferritin was performed by Chemilumniscence assay and hepcidin by ELSIA.

Results: A total 50 cases were enrolled in two age groups (0-2 years-group I) and (2-6 years-group II). However, 16/50 (32%) cases were found to have a low ferritin value (range 0.2-5.75 µg/L) and hence were not included due to early iron deficiency state. Of remaining 34 cases, 20 (59%) were in group I and 14 (41%) group II. The mean serum hepcidin levels were 32.4 (range 19.96-36.6 ng/ml) in group I and 32.84 (range 9.54-36.15 ng/ml) in group II. There was no statistically significant difference in serum hepcidin ranges between group I and II.

Conclusions: The mean hepcidin levels and ranges in our pilot study in paediatric age were low as compared to adult reference ranges but in accordance with other pediatric study results from West (G Cangemi et al Italy 2013) and Asia (HS Choi et al Korea 2012). However, a larger cohort needs to be studied before our data results can be used for routine clinical interpretation of hepcidin levels in our population.

Image:
Keywords: cohort study, hepcidin ranges, India, PAEDIATRICS
Hematology and Oncology

MCL-1 EXPRESSION CORRELATES WITH TUMOR DIFFERENTIATION AND PREDICTS FAVORABLE OUTCOMES IN NEUROBLASTOMA

Hsiu-Hao Chang¹, Chun-Yi Lu¹, Wen-Ming Hsu²
¹Pediatrics, ²Surgery, National Taiwan University Hospital, Taipei, Taiwan, China

Background and aims: Mcl-1 is a member of BCL-2 family which regulates programmed cell death and apoptosis. Mcl-1 has been reported to be immunopositive in neuroblastic tumor tissues, but its prognostic role is not clear. The aim of this study was to evaluate the prognostic role of Mcl-1 expression in patients with neuroblastoma (NB).

Methods: Mcl-1 expression in NB tumors was examined by immunohistochemical staining. Correlations between Mcl-1 expression, various clinicopathologic factors, and patient survival were studied.

Results: Among 77 NB tumors, Mcl-1 was expressed in 37 (48%) patients. Positive Mcl-1 immunostaining was correlated with differentiated histology in tumors and early clinical stages (P<0.05). Kaplan-Meier analysis showed that patients with positive Mcl-1 expression had a better 5-year survival rate than those with negative Mcl-1 expression (P<0.001). Multivariate analysis demonstrated Mcl-1 expression to be an independent prognostic factor. In addition, NB cell lines treated by retinoid acid showed increased Mcl-1 expression when compared with vehicle treated controls.

Conclusions: The expression of Mcl-1 correlates with the differentiation of NB tumors and predicts a favorable prognosis. Further investigation of Mcl-1 regulation may shed light to the tumorigenesis of NB.

Keywords: Apoptosis, Mcl-1, Neuroblastoma
Pharmacokinetic study proved the mechanism of combined oral chelators can reach maximum efficacy iron removal in transfusion-dependent thalassemia major

Chien-Heng Lin¹,², Xianxiu Chen³, Chin-Ching Wu³, Kang-Hsi Wu⁴, Ta-Shu Song⁵, Te-Fu Weng⁴, Ching-Tien Peng⁶,⁷

¹Division of Pediatric Pulmonology, China Medical University Children's Hospital, ²Department of Biomedical Imaging and Radiological Science, ³Department of Public Health, China Medical University, ⁴Division of Pediatric Hemato-oncology, China Medical University Children's Hospital, Taichung, ⁵School of Pharmacy, China Medical University, Taichung, ⁶Department of Biotechnology, Asia University, Taichung, Taiwan, ⁷Division of Pediatric Hemato-oncology, China Medical University Children's Hospital, Taichung, Taiwan, China

Background and aims: Combination therapy of DFP and DFX had been used in transfusion-dependent thalassemia major (TDTM) patients. This study investigates the mechanism of combined chelators in TDTM patients by pharmacokinetic study.

Methods: TDTM patients’ data were collected and they were assigned to receive 3 treatments in rotation as DFX, DFP, and combination therapy of DFX and DFP. Primary outcome was the difference of iron excretion, and the secondary outcome was plasma concentrations of DFX and DFP.

Results: The iron excretion volume was lower in pretreatment period and in monotherapy of DFX, but higher (p=0.001) in monotherapy of DFP, and higher in combination therapy (p=0.041). The mean iron excretion and the mean plasma DFX value were significantly higher in combination therapy than pretreatment, and the mean plasma DFP value was significantly higher in monotherapy of DFP than combination therapy.

Conclusions: Our study revealed that combination therapy can reach a maximum efficacy iron removal in TDTM patients compared with monotherapy.

Keywords: None
Hematology and Oncology

PRODUCTION OF AN ANTI-FZD7 SCFV AND ITS ANTI-PROLIFERATIVE EFFECT AGAINST WILMS’ TUMOR CELLS

Foroogh Nejatollahi* 1, 2, Neda Zarei3

1Immunology, 2Shiraz HIV/AIDS Research Center, Shiraz University of Medical Sciences, 3Biotechnology, Shiraz University of Veterinary, Shiraz, Iran

**Background and aims:** Wilms’ tumor (WT), nephroblastoma, is the most frequent renal solid tumor in children which affects approximately 1 in 10,000 children before their 15th birthday. The tumor has been linked to aberrant Wnt signaling. Interaction of Frizzled 7 (Fzd7), a Wnt receptor, with Wnt ligand affects cellular proliferation, polarity, and differentiation. The method of treating Wilms’ tumor through modulation of Fzd7 may involve the use of antibodies against Fzd7. ScFvs (single-chain fragment variable) have provided an alternative to full-length monoclonal antibodies. In this study a specific scFv antibodies against Fzd7 was produced and its effect on Wilms’ tumor cell line was investigated.

**Methods:** A phage antibody display library of scFv was used and selection of specific scFvs was performed by 4 rounds of panning process against an immunodominant epitope of Fzd7 and followed by PCR and fingerprinting of the selected clones. ELISA was used to confirm the specificity of the clones. The effects of the selected scFv on WiT49 cell line were assessed by MTT assay.

**Results:** A specific scFv with the frequency of 35% was selected which produced positive ELISA with the corresponding epitope. A significant reduction (65%) on cell survival was observed in the test group.

**Conclusions:** Due to unique properties of scFvs including human origin, high affinity and specificity, these agents has been applied in cancer immunotherapy. The specific anti-Fzd7 scFv selected in this study has the potential to be used for inhibiting the wnt signaling pathway in Wilms’ tumor cells.

**Keywords:** anti-Fzd7 scFv, Frizzled receptor, Wilms’ tumor
Hematology and Oncology

REFRACTORY MULTISYSTEM LCH - DRAMATIC RESPONSE TO BRAF INHIBITOR

Shui Yen Soh¹, Lu Lu Htet², Derrick Wen Quan Lian³
¹Haematology / Oncology, ²Pharmacy, ³Pathology and Laboratory Medicine, KK Women's and Children's Hospital, Singapore, Singapore

Background and aims: BRAF V600E mutations can be found in over half of patients with Langerhans cell histiocytosis (LCH).

Methods: We report the use of BRAF inhibitor in refractory LCH.

Results: An infant presented at 4 months of age with multisystem risk-organ+ LCH. She showed response to prednisolone and vinblastine, but at week 19 of continuation, she developed disease progression (rash, hepatosplenomegaly, fever, malaise, cytopenias), which failed to respond to salvage chemotherapy. Immunohistochemistry for BRAF V600E was performed on a skin biopsy at disease progression, which showed equivocal staining. Sequencing with two sets of primers (240bp & 210bp) showed mutation at EXON15, c.1799T>A, confirming the presence of BRAF V600E mutation.

With parental consent, vemurafenib was started at 60mg BID, and gradually increased to 120mg BID (12mg/kg/dose) over 8 weeks. Within days, the parents reported improvement in the child's well-being. After 3 weeks, she no longer needed transfusions and her hepatosplenomegaly was regressing. Four months into vemurafenib, she continues to be well, and has not demonstrated toxicities.

Conclusions: There is limited literature reporting the use of vemurafenib in young children. Although our follow-up duration is still short, the remarkable response is encouraging. More studies are warranted to explore the utility of BRAF inhibitors in LCH.

Keywords: BRAF, LCH, Vemurafenib
Hematology and Oncology

ROLE OF BASIC HEMATOLOGICAL TESTS IN DIAGNOSIS OF COMMON PEDIATRIC INFECTIONS: A TERTIARY CARE HEMATOLOGY LAB EXPERIENCE

Rajendra Marathe¹, prateek bhatia¹
¹paediatric hematology oncology unit, PGIMER, chandigarh, India

Background and aims: Common infectious diseases accountable for large scale morbidity in the Indian sub-continent include malaria, leishmaniasis and dengue fever. Aim is to highlight the importance of hematological evaluation during diagnostic work-up of these infections.

Methods: Review of CBC’s, PBF’s and Bone marrow material in all cases was done. Scoring system after validation of 100 positive malarial blood films was developed and subsequently evaluated on consecutive 150 samples with fever and differential of malarial infection. TLC (>12X10⁹/L), AMC (>0.8x10⁹/L), Platelet count (<100x10⁹/L), nRBC’s on smear, left shift and RBC clumps were scored as 1(+) or 0 (-).

Results: Of 150 fever PBF’s screened, 80 (53.3%) were positive for malaria. Of these, 72 (90%) had score 5-6, 6 (7.5%) a score 3-4 and 2 (2.5%) <3. On screening 16 BMA and biopsy smears of pediatric leishmaniasis, common (70.5%), uncommon (46%) and atypical (49%) morphological findings were noted. On screening 300 cases of serology positive dengue, 100% had platelet count < 100,000/ul and > 10% activated lymphoid/plasmacytoid cells and 80% a TLC <5,000/ul at presentation.

Conclusions: Our study highlights high sensitivity (90%) of malarial parasite detection in fever cases if the scoring system gives a high score (5-6). Certain morphological findings can suggest presence of leishmania parasite on BMA smears/biopsies and prevent need for costlier detection methods. A triad of low platelets and TLC with plasmacytoid cells on PBF can help differentiate dengue infection from other viral infections in endemic regions.

Keywords: hematological tests, malaria, paediatric, parasite, viral
SERUM MARKERS OF BONE TURNOVER IN THALASSEMIC CHILDREN SEPARATED ACCORDING TO CHRONOLOGICAL AGE

Ehab Saoud Abd El-Moneim1,2, Mohammed Zolaly1, Zakaria Ai-Hawsawi2, Shereen El-Tarhouny4, Manal Hanafi5, Abeer Abdelmoneim1,2

1Pediatrics, Taibah University, Almadinah Almonawara, Saudi Arabia, 2Pediatrics, Sohag University, Sohag, Egypt, 3Pediatrics, Maternity and Children Hospital, 4Biochemistry Department, 5Family and Community Medicine Department, Taibah University, Almadinah Almonawara, Saudi Arabia

Background and aims: To compare bone turnover markers (BTMs) in thalassemic children (TC) at different ages.

Methods: 47 children (1.5–18 years) with β-thalassemia major were recruited. BTMs were compared to eighteen healthy children and to 16 thalassemic adults (19.7–31.1 years).

Results: With the exception of tartrate-resistant acid phosphatase 5b (TRACP5), the normally present correlations between age and BTMs were lost in TC. Increased bone resorption and decreased bone neoformation were evident in TC very early and to the same magnitude as thalassemics adult. Regression analyses showed influence of sex hormones replacement therapy on TRACP5b; pretransfusion hemoglobin on serum receptor activator of nuclear factor-kappa B ligand (sRANKL); and pretransfusion hemoglobin and serum ferritin on osteocalcin (OC).

Conclusions: The early onset of bone turnover disturbances in TC indicates the need to investigate possible options to intervene early.

Keywords: Bone turnover, Osteopathy, Thalassemia
SICKLE CELL INTRA-HEPATIC CHOLESTASIS IN A 15 YEAR OLD BOY: A CASE REPORT AND REVIEW OF LITERATURE.

Yetunde Israel-Aina¹, Magdalene Odunvbun¹, Ejiro Ogonor¹
¹CHILD HEALTH, UNIVERSITY OF BENIN TEACHING HOSPITAL, BENIN , Nigeria

Background and aims: Sickle cell intra-hepatic cholestasis (SCIC) is a rare form of sickle cell hepatopathy that is associated with a high fatality rate. There are few reports on the incidence of SCIC worldwide as well as in children with SCA in Nigeria.

Methods: Till date, there are no well defined diagnostic and treatment modalities for management of this potentially lethal condition. We describe a 15 year old previously undiagnosed sickle cell anaemia boy who presented with right upper abdominal pain, hepatomegaly and markedly elevated bilirubin levels. The liver enzymes were elevated but there was no evidence of viral hepatitis and extra-hepatic biliary duct dilatation or obstruction.

Results: A diagnosis of SCIC (as a form of sickle cell hepatopathy) was promptly considered and he was successfully managed with exchange blood transfusions, transfusions with fresh frozen plasma to restore coagulation factors and other conservative management.

Conclusions: The diagnosis of SCIC requires high index of suspicion. Early diagnosis and prompt institution of exchange blood transfusion and other supportive management may improve the chances of survival of patients with this condition.

Keywords: Sickle cell intra-hepatic cholestasis, sickle cell hepatopathy, exchange blood transfusion
Hematology and Oncology

THINKING ABOUT CHILDHOOD CANCER: A CASE REPORT

Bárbara Pinto Nasr* 1

1Universidade do Grande Rio, Rio de Janeiro, Brazil

**Background and aims:** One-third of all childhood cancers are leukaemia, with approximately 700 new cases in Brazil each year. Around three out of four of these cases are Acute Lymphoblastic Leukaemia (ALL).

**Methods:** We report on a 13 year old that came to the Emergency Room with fever lasting more than five days, purple spots on the body and bone pain. He reports that the bruises and petechiae appeared after football match and the bone pain showed up before the match, with predominance at night and during rest. Thru clinical exam presents with body temperature 38, 8 °C (102 °F); pallor; petechiae in upper and lower limbs and bone pain disproportionate to the touch of the sternum and tibia. Further investigation revealed anemia, thrombocytopenia and leukopenia and presence of blasts on the peripheral blood smear. Patient went through a bone marrow aspiration and biopsy that confirmed the diagnosis of ALL.

**Results:** For many types of cancers, diagnosis at the earliest possible stage makes treatment much more effective. But at this time there are no special tests to detect ALL early. The best way to find leukemia early is through clinical and laboratorial examination during medical check-up.

**Conclusions:** There are no specific signs or symptoms in childhood cancer. All manifestation can occur in many different and more common children disease, such as infectious disorders. Therefore, the pediatrician must be aware for signs and symptoms that last more than expected despite of previously treatment.

**Keywords:** Early diagnosis, Leukaemia
INFANT SLEEP SAFETY RECOMMENDATIONS IN PARENTING BOOKS: THE PAST 100 YEARS
Jodi A. Mindell\textsuperscript{1,2}, Elizabeth Culnan\textsuperscript{3}, Erin S. Leichman\textsuperscript{4}, Russel M. Walters\textsuperscript{5}
\textsuperscript{1}The Children's Hospital of Philadelphia, \textsuperscript{2}Saint Joseph's University, \textsuperscript{3}Drexel University, Philadelphia, \textsuperscript{4}Kennedy Krieger Institute, Baltimore, \textsuperscript{5}Johnson & Johnson Consumer Inc, Skillman, United States

Background and aims: We investigated how infant sleep safety recommendations in baby guides have changed over time.

Methods: Books published over the last 100 years (n=64) were analyzed for recommendations regarding sleep position, bedsharing, and crib bumpers.

Results: Before 1992, when the AAP recommended the supine position, books recommended that babies sleep prone (29\%), on their side (9\%), or were neutral/silent (63\%). Since 1992, all recommend supine (83\%) or supine/side (17\%). Until 1979, all books recommended against bedsharing (50\%) or were silent (50\%). In 2000, the AAP recommended against bedsharing, and since then, books supporting bedsharing (10\%) or were neutral (48\%) increased, while books against (24\%) or silent (19\%) decreased. Before 1971, books were silent regarding crib bumpers, after which, books were silent (48\%), in support (26\%), against (4\%), or neutral (22\%).

Conclusions: Most baby guide recommendations are based on best practices. Only 10\% of books published after 1990 discuss all topics integral to infant sleep safety. There is a need to ensure that guidance provided to parents is current and consistent with evidence-based practice.

Keywords: baby guides, history, infant, parenting, safety, sleep
“DRUG RESISTANT TUBERCULOSIS IN CHILDREN IN A TERTIARY CARE HOSPITAL”
Vinod Ratageri¹, Shameer Hasabulla¹
¹Paediatrics, Karnataka Institute of Medical Sciences, Hubballi-580021, Karnataka, India

Infectious Diseases

Background and aims: The emergence of drug resistance tuberculosis (TB), and particularly multidrug-resistant TB (MDR-TB), has become a significant public health problem. Data on DR-TB in Indian children are sparse. AIMS AND OBJECTIVES: To determine the prevalence of drug resistance in all forms of tuberculosis in children in retreatment group in the age group of 0-18 years.

Methods: Hospital based observational study at Department of Paediatrics KIMS, Hubli from 1/12/2013 to 30/11/2014. Inclusion Criteria: All children between the age 0-18 years, who were diagnosed as any form of tuberculosis [re-treatment group] by RNTCP guidelines. Detailed clinical history including risk factors and physical examination were taken. Sputum or gastric lavage of all cases sent for Culture and Drug susceptibility test (DST). DST was done by either CB-NAAT or LPA. Statistical analysis was done using SPSS Statistics.

Results: The number of children fulfilled inclusion criteria were 62. Drug resistance was detected in 13 cases (23.64%). MDR TB was observed in 8 cases (14.55%). No cases were INH resistant alone. Mean age was 15.7±3.2 year and Male: female was 1:1.6. Majority (61.54%) of DR TB were defaulters; 30.77% cases were failures. MDR TB contact was seen in 2 cases (15.38%). Contact with person died of TB and contact with person failed TB treatment were found in 2 (15.38%) and 3 (23.08%) cases respectively. HIV was seen in 1 case (7.69%). Defaulters and contact with MDR TB were significantly associated with the development of DR TB.

Conclusions: Defaulters and contact with MDR TB were the risk factors associated with development of DR TB.

Keywords: children, DR TB, MDR TB
**Background and aims:** After the Bacillus Calmette-Guérin (BCG) vaccine was recommended until 6 months of age, cases of BCG osteitis have been increasing in Japan.

**Methods:** We report the case of a 2-year-old boy with BCG osteitis.

**Results:** He was vaccinated with BCG when he was 3 months old. After about 2 years, he came to the orthopedic clinic because of left foot claudication and was admitted to the pediatric ward for detailed examination. His knee joint had mild pain, but there was no swelling or erythema. X-ray of the leg showed destruction of the edge of the left proximal tibia. Laboratory data showed signs of mild inflammation. Tuberculin test was strongly positive, but T-Spot was negative. Furthermore, polymerase chain reaction analysis of bone biopsy specimens detected mycobacterium tuberculosis of the BCG strain. After a final diagnosis of BCG osteitis, the patient was started on oral isoniazid, rifampicin, pyrazinamide, and ethambutol, and surgical bone curettage was performed. Despite improvement in his laboratory data, another operation was required due to continued bone destruction. After five months, his leg bone neoplasticity was confirmed and he was eventually able to ambulate normally by himself.

**Conclusions:** Although BCG osteitis typically has a good prognosis with few reported sequelae, some cases need surgical treatment in addition to oral medicines. We should carefully observe for this possibility in order to avoid dysfunction.

**Keywords:** BCG osteitis
A CHARACTERIZATION OF MYCOPLASMA PNEUMONIAE ASSOCIATED COMPlicated PNEUMONIA IN A PEDIATRIC POPULATION

Aaron St-Laurent¹, Ashley Roberts², Sotindjo Tatiana³, Joseph Ting⁴
¹Respiratory Medicine, Montreal Children’s Hospital, Montreal, ²Infectious Diseases, BC Children's Hospital, Vancouver, ³Adolescent Medicine, Montreal Children's Hospital, Montreal, ⁴Neonatology, BC Children's Hospital, Vancouver, Canada

Background and aims: Mycoplasma pneumoniae is implicated in 11% of community acquired pneumonia requiring hospitalization in North America. Despite this, its pathogenicity is unclear. Parapneumonic complications due to M. pneumoniae pneumonia (MP) are generally considered rare. The purpose of this study was to characterize the clinical course of complicated MP and to compare its course to complicated pneumonia due to other etiologies, chiefly Streptococcus pneumoniae.

Methods: A retrospective, observational chart review of all complicated pneumonia cases at a tertiary care centre from Jan2005-Jun2012. After exclusion criteria, subjects were divided into two groups: M. pneumoniae (n=13), and S. pneumoniae (n=24).

Results: M. pneumoniae was involved in 18.8% of complicated pneumonia. When compared to S. pneumoniae, MP showed significantly lower neutrophil counts and less anemia (See table). Notably, no statistically significant difference was seen in a number of important clinical markers of disease severity, including admission to intensive care unit, need for chest tube, complication of pneumothorax, total length of stay (See Table).

Conclusions: M. pneumonia accounts for a significant proportion of complicated pneumonia. Our review suggests that complicated MP demonstrates a similar clinical disease severity to S.pneumoniae pneumonia.
<table>
<thead>
<tr>
<th>Clinical Course</th>
<th>M. pneumonias (n=13)</th>
<th>S. pneumoniae (n=23)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days of symptoms prior to admission</td>
<td>8 (2-21)</td>
<td>8 (2-21)</td>
<td>0.948</td>
</tr>
<tr>
<td>Received Antibiotics before admission^</td>
<td>12 (52.3%)</td>
<td>13 (53.5%)</td>
<td>0.080</td>
</tr>
<tr>
<td>Highest Neutrophil Count (x10^9/L)^</td>
<td>8.9 [5.8,13.7]</td>
<td>19.8 [15.4, 26.6]</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Lowest Hemoglobin (g/L)^</td>
<td>95 [94,113]</td>
<td>85 [68, 101]</td>
<td>0.037</td>
</tr>
<tr>
<td>C-Reactive Protein (mg/L)^</td>
<td>180 [38, 318]</td>
<td>202 [126, 335]</td>
<td>0.336</td>
</tr>
<tr>
<td>Chest tube^</td>
<td>7 (53.8%)</td>
<td>19 (82.6%)</td>
<td>0.064</td>
</tr>
<tr>
<td>Days with chest tube in situ^</td>
<td>5 (1-13)</td>
<td>8 (3-33)</td>
<td>0.497</td>
</tr>
<tr>
<td>Air leak^</td>
<td>2 (15.4%)</td>
<td>7 (30.4%)</td>
<td>0.317</td>
</tr>
<tr>
<td>Pneumatoceie^</td>
<td>3 (25.0%)</td>
<td>7 (30.4%)</td>
<td>0.735</td>
</tr>
<tr>
<td>PICU admission^</td>
<td>3 (8.1%)</td>
<td>4 (10.8%)</td>
<td>0.679</td>
</tr>
<tr>
<td>Days of PICU stay^</td>
<td>6 (5-8)</td>
<td>4 (1-17)</td>
<td>0.629</td>
</tr>
<tr>
<td>Intubation^</td>
<td>1 (7.7%)</td>
<td>2 (8.7%)</td>
<td>0.917</td>
</tr>
<tr>
<td>Non-invasive ventilation^</td>
<td>3 (13.6%)</td>
<td>3 (13.0%)</td>
<td>0.438</td>
</tr>
<tr>
<td>Surgical procedures other than chest tube^</td>
<td>0</td>
<td>5 (21.7%)</td>
<td>N/A</td>
</tr>
<tr>
<td>Total length of stay^</td>
<td>9 (3-17)</td>
<td>14 (4-53)</td>
<td>0.060</td>
</tr>
</tbody>
</table>

* Expressed as Median [Range]; by Mann-Whitney U test, as appropriate  
^ Chi-square/ Fisher’s exact test, as appropriate

**Keywords:** Complicated Pneumonia, Empyema, Mycoplasma, Mycoplasma pneumoniae, Pneumonia, Streptococcus pneumoniae
Background and aims: Dengue fever/dengue hemorrhagic fever cases is on the rise during the monsoon. We conducted a clinical study since a large number of cases with bleeding manifestations were referred to our Hospital. To determine the need for platelet transfusion in dengue fever cases in our hospital and the final outcome.

Methods: This is an observational study. Serological evaluation of dengue fever cases were done by immunochromatographic technique for NS 1 antigen and IgM and IgG antibody capture. Patients with dengue hemorrhagic fever were treated with (FFP) and blood if the platelet counts were below 20,000 cells/cu mm.

Results: Out of 100 children admitted and studied 84 were real dengue seropositive of which dengue fever cases were 55, dengue hemorrhagic fever were 27 and dengue shock syndrome were 2 cases only. Total 4 cases with dengue hemorrhagic fever whose platelet counts were below 20,000 cells/cu mm, were given platelet concentrates. Timely platelets transfusions in those cases helped to prevent severe hemorrhagic complications, and there were no deaths.

Conclusions: The dengue fever cases studied in our institute out of the total managed cases 10 shows bleeding manifestations 4 had epistaxis, 3 had malena and 3 had gastric bleeding. Critically ill patients were given blood products.

Keywords: None
A NEW SCREENING APPROACH FOR THE MANAGEMENT OF RSV INFECTION USING INNOVATIVE BUT OLD-FASHIONED ALGORITHM.

Yoshihiko Morikawa¹, Shogo Kato², Tatsu Takayama³, Isamu Hokuto⁴, Eisuke Inoue⁵, Naohisa Yahagi⁶
¹Clinical Research Support Center, Tokyo Metropolitan Children’s Medical Center, ²Division of Data Science for Clinical Research, Department of Data Management, Center for Clinical Research and Development, National Center for Child Health and Development, Tokyo, ³Department of Pediatrics, Yokohama municipal citizen’s hospital, Yokohama, ⁴Pediatrics and Neonatology, St. Marianna University of Medicine, Kanagawa, ⁵Division of Biostatics, Department of Data Management, Center for Clinical Research and Development, ⁶Division of Data Science for Clinical Research, Department of Data Management, National Center for Child Health and Development, Tokyo, Japan

Background and aims: This study demonstrates the importance of history taking and physical examination in diagnosis. There is widespread use of rapid antigen detection tests (RADTs) for the diagnosis of respiratory syncytial virus (RSV) in pediatric patients. We propose a RSV-specific signs and symptoms checklist (RSV-SSC) for accurate diagnosis and avoiding unnecessary RADT.

Methods: A prospective cohort study conducted from 2012 to 2013 in a community hospital in Yokohama, Japan. A pre-examine questionnaire was administered to all of 23,851 children 15 years or younger at the outpatient division or emergency department.

All children who completed the pre-exam questionnaire and met the RSV-SSC criteria were enrolled into study. Any child presenting with cough and/or rhinorrhea received the RADT.

The primary outcome was diagnostic accuracy and the curtailable medical costs. We compared the RSV-SSC results with the RADT results as the gold standard.

Results: The incidence of RSV determined by the RADT was 9.7% (654/6742). Then, 1,369 children were positive RSV-SSC. Of these, 654 were true positives and 737 were false positives. The RSV-SSC resulted in 22 false negatives.

The curtailable annual medical costs was estimated as ¥23,238,225 JPY by performing the RADT only for children with positive RSV-SSC.

Conclusions: The RSV-SSC can be used effectively to accurately diagnose serious cases of RSV and to evaluate the unnecessity of diagnostic tests. Clinicians should give greater import to gathering disease-specific signs and symptoms from their patients to provide the best value for them.
Keywords: RADT, diagnostic accuracy, history taking, physical examination, rapid antigen detection test, RSV
**Infectious Diseases**

**ACCURACY OF CLINICAL DIAGNOSIS IN RELATION TO DENGUE NS1 ANTIGEN IN ACUTE FEBRILE ILLNESS: A HOSPITAL BASED STUDY**

Sabina Sultana¹, Nurun Naher²

¹Paediatrics, Apollo Hospitals, Dhaka, ²Paediatrics, Apollo Hospitals Dhaka, Dhaka, Bangladesh

**Background and aims:** Dengue virus infection is a public health problem in our country. Dengue fever initially presents as nonspecific fever and dengue antibody may be negative at initial stage. So dengue nonstructural protein (NS1) detection has been recently developed for diagnosis of dengue infection. As this test is not available everywhere in our country, our study aimed to correlate the clinically suspected dengue cases with NS1 positivity at initial stage.

**Methods:** This study has been done in admitted patient aged 6 months to 16 years with fever (≥100°F) at least for 48 hours in Apollo hospitals, during April 14 to October 14. All included children were tested for dengue NS1 antigen (by immunocromatography) within 5 days of fever. The sensitivity, specificity of this test in relation to RT-PCR and/or viral culture was 92.8%, 98.4% respectively.

**Results:** Total 113 children were included; of them clinically probable dengue cases (WHO guideline) were 51 and NS1 positive was found in 46 cases among 51. The sensitivity, specificity of clinically suspected dengue with dengue NS1 were 90.20%, 100% respectively and positive and negative predictive values of a clinical diagnosis were 100% and 92.54% respectively.

**Conclusions:** NS1Ag positivity was found in most of clinically probable dengue cases. This test is a useful tool for diagnosis of dengue at early febrile stage. But in a resource poor country, we can use our clinical judgment also.

**Keywords:** Dengue, NS1 antibody
Infectious Diseases

ANALYSIS OF CLINICAL MANIFESTATIONS AND LABORATORY FINDINGS IN CHILDREN WITH INFLUENZA B-ASSOCIATED MYOSITIS, SINGLE CENTER STUDY FOR 5 YEARS

Seung-Taek Yu¹, Du-Young Choi*¹

¹Pediatrics, Wonkwang University, College of medicine, Iksan, Korea, South

Background and aims: Influenza associated myositis is a rare condition characterized by severe lower extremity pain, refusal to walk in children.

Methods: We observed 30 influenza B associated myositis patients for 5 years (2010 - 2015).

Results: The presence of influenza B was confirmed by PCR tests performed on the samples from 210 children. 30 children (14.2%) complained of severe pain in the calves of both legs, gait disturbance. In the same period, a total of 42 children complained of severe pain in the calves of both legs. 30 of these children tested positive for Influenza virus B. Median age was 6.3 years old. All children were male and had a median fever lasting for a duration of 4.3 days. Median period from the onset of fever to the onset of calf pain was 2.5 days, and that from the onset of calf pain to improvement of calf pain was 4.2 days. Median WBC count was 4840/mm³. 3 patients had mild leukopenia. Median PLT count was 156,000/L. 4 patients had mild thrombocytopenia. Median AST was 135 IU/L, and ALT was 34 IU/L, with median ESR of 4 mm/hr and CRP level of 0.8 mg/L. Median CK and LDH levels, which are typically increased in myositis, were elevated to 3387 IU/L and 752 IU/L, respectively. The duration of symptoms did not correlate with CK values (P = 0.619). None of all children had any other complications.

Conclusions: We aimed to understand the association between myositis and Influenza virus B in children.

Keywords: Influenza , myositis
ANALYSIS ON DRUG RESISTANCE AND COMMON PATHOGENIC BACTERIA WHICH INFECT VULVOVAGINITIS

Chun Zhen Hua1,1, Li Ying Sun2
1Infectious Disease, Children’s Hospital, Zhejiang University School of Medicine, 2Children’s Hospital, Zhejiang University School of Medicine, Hangzhou, China

Background and aims: To study the common pathogenic bacteria causing vulvovaginitis in prepubertal girls, and analyze the drug resistance of the identified pathogens.

Methods: Girls with vulvovaginitis were diagnosed from January, 2007 to December, 2013, bacteria were identified and drugs susceptibility test were completed with Vitek system.

Results: A total of 424 strains of pathogenic bacteria were identified from 825 vagina swabs from girls with vulvovaginitis and the positive rate was 51.4%. The top 5 pathogens with high isolation rates were Candida albicans (12.2%), Neisseria gonorrhoeae (10.7%), Streptococcus pyogenes (7.6%), Staphylococcus aureus (5.3%), and Escherichia coli (5.1%). Both Neisseria gonorrhoeae and Escherichia coli were found in two cases at the same time. The drug sensitivity results showed that all Streptococcus pyogenes were sensitive to penicillin and 18.2% of all Staphylococcus aureus produced β-lactamase and resistant to Oxacillin. There were 38.1% of the Escherichia coli strains producing ESBLs and 57.0% of all Neisseria gonorrhoeae isolations producing β-lactamase.

Conclusions: Candida albicans, Neisseria gonorrhoeae, Streptococcus pyogenes, Staphylococcus aureus and Escherichia coli are common pathogenic bacteria causing vulvovaginitis in prepubertal girls.

Keywords: None
**Infectious Diseases**

**ANTIBODIES IN LYMPHOCYTE SUPERNATANT IN DIAGNOSING CHILDHOOD TUBERCULOSIS WITH SEVERE MALNUTRITION AND PNEUMONIA**

Lazina Sharmin*¹, A S M S B Shahid², K M Shahunja², M J Chisti²

¹Paediatrics, Enam Medical College& Hospital, Savar, ²NCSD, icddr,b, Dhaka, Bangladesh

**Background and aims:** Lack of availability of improved tuberculosis (TB) diagnostics in severely malnourished children with pneumonia prompted us to evaluate the performance of antibodies in lymphocyte supernatant (ALS) for the diagnosis of TB in such children.

**Methods:** Children 0–59 months with severe malnutrition and radiologic pneumonia admitted to the Dhaka Hospital of icddr,b were enrolled. Gastric lavage fluid and induced sputum were tested for microbiological confirmation of TB. ALS was measured from venous blood and results were evaluated in children classified as “confirmed”, “probable” or “not TB”.

**Results:** Among 224 children having ALS analysis, 12 (5.4%) children had microbiologically “confirmed TB”, a further 41 (18%) had clinically diagnosed “probable TB” and “not TB” in the remaining 168 (75%) children. ALS was positive in 89 (40%) and negative in 85 (39%) of children, with a large number (47 or 21%) reported as “borderline”. These proportions were similar between the three TB diagnostic groups. The sensitivity and specificity of ALS when comparing “Confirmed TB” to “Not TB” was only 67% (95% CI: 31–91%) and 51% (95% CI: 42–60%) respectively.

**Conclusions:** Our data suggest that ALS is not sufficiently accurate to improve the diagnosis of TB in children with severe malnutrition.

**Keywords:** None
ANTIDIPTHERIA IMMUNITY IN NIGERIAN MOTHERS AND THEIR NEWBORNS

Henry Cummings¹,², Ayebo Sadoh³, Osawaru Oviawe⁴, Wilson Ehidiamen Sadoh⁵
¹Paediatric Infectious diseases, Delta State University Teaching Hospital, Delta State, Nigeria, oghara,
²Paediatric Infectious diseases, University of Benin Teaching Hospital, Benin, Nigeria, ³Paediatric Infectious
diseases, University of Benin Teaching Hospital, Benin, Niue, ⁴Paediatric Respiratory Unit, ⁵Paediatric
Cardiology unit, University of Benin Teaching Hospital, Benin, Nigeria

Background and aims: Immunity to diphtheria has been noted to wane with age such that previous studies
have shown that a significant proportion of females with characteristics comparable to those of Nigerian
women of reproductive age have inadequate levels of immunity to diphtheria. Thus, it is envisaged that
Nigerian newborns may inherit inadequate levels of immunity to diphtheria from their mothers.

Methods: Cord blood and peripheral maternal blood samples were collected from 231 mother-infant pairs at
delivery. Anti-diphtheria antibody titres were assayed using Enzyme-linked immunocorbent assay (ELISA)
technique. Recruited babies were those born at term with normal birth weight.

Results: As much as 29.9% of both mothers and their babies had no protection (antibody titre < 0.01IU/ml)
from diphtheria. Ninety (39.0% CI 33%, 45%) mothers and 107 (46.3% CI 40%, 52%) babies were
inadequately protected (antibody titre < 0.1IU/ml) from diphtheria. There was a strong positive linear correlation
between maternal and newborn antibody titres ("r" = 0.983, p < 0.0001), such that, as mothers antibody titres
increased those of their babies also increased.

Conclusions: Significant proportions of Nigerian mothers and newborns are at risk of developing diphtheria.
Vaccination of parturient women with booster doses of diphtheria toxoid vaccine is recommended.

Keywords: Anti-diphtheria, Immunity, Mothers, Newborns, Nigerian
**Infectious Diseases**

**ANTIMICROBIAL SUSCEPTIBILITY OF SELECT RESPIRATORY TRACT PATHOGENS IN DAKAR, SENEGAL**

Assane Dieng¹, Makhtar camara², Diop abdoulaye¹, Amadou DIOP¹, Younoussa Keita³, Boireau Djibril⁴, Jean Baptiste Niokhor Diouf⁵, Assane Sylla³, Oussmane NDIAYE⁴, Cheikh Saad Bouh Boye¹

¹faculte de medecine dakar, ²laboratoire de bacteriologie virologie Le Dantec, ³faculte de medecine dakar, service de pediatrie Le Dantec, ⁴faculte de medecine dakar, service de pediatrie Abass Ndao, ⁵faculte de medecine dakar, service de pediatrie Roua Baudouin, dakar, Senegal

**Background and aims:** Streptococcus pneumoniae, Haemophilus influenzae and Moraxella catarrhalis are the most common causative agents of acute respiratory tract infections (RTIs), mainly in children and during the elderly.

The objectives of this study were to identify these clinical isolates, and to assess their susceptibility to several antibiotics.

**Methods:** A total of 120 strains including S. pneumoniae (n = 16), H. influenzae (n = 19) and M. catarrhalis (n = 23) were isolated from RTIs and their antibiotic susceptibility was tested using a standard disk diffusion method. The minimum inhibitory concentrations (MICs) were determined using the E-test.

**Results:** High β-lactams resistance rates had been observed among S. pneumoniae strains, including penicillin (31.3%) and cephalosporins (18.7 to 31.3%). Only 50% of isolates were susceptible to azithromycin. However, all strains were resistant to trimethoprim-sulfamethoxazole.

Among H. influenzae isolates, 10.5% were resistant to ampicillin, and cefaclor while 100% were resistant to trimethoprim-sulfamethoxazole.

91.3% of M. catarrhalis isolates β-lactamase positive were resistant to ampicillin while susceptible to the most tested antibiotics.

**Conclusions:** Except M. catarrhalis ampicillin-resistant β-lactamases producing strains, frequency of antibiotic resistance was mainly observed among S. pneumoniae, and to a lesser extent among H. influenzae clinical isolates, suggesting the need for continuous surveillance of antimicrobial resistance patterns.

**Keywords:** S. pneumoniae; H. influenzae; M. catarrhalis; respiratory tract infections; Antibiotic resistance
ASSOCIATION BETWEEN GENITAL WARTS AND MALIGNANCIES: A 14- YEAR ANALYSIS IN TAIWAN

Ching- Yi Cho on behalf of Pediatric department, Taipei Veterans General Hospital, Yu- cheng Lo on behalf of Pediatric department, Taipei Veterans General Hospital

1Pediatric, 2Pediatrics, Taipei Veterans General Hospital, Taipei, Taiwan, China

Background and aims: This study aims to analyze relative risk of developing malignancies among patients with genital warts in Taiwan.

Methods: The study used National Health Insurance Research Database for research. The following period extended from year 2000 to 2013. By collecting the subjects with the diagnosis of ICD-9 078.11 or 078.1 plus the record of urological/ gynecological clinic visiting, 19298 cases (7612 men and 11686 women) were identified. The age-specific incidence rates of genital warts and standardized incidence ratios of malignancies were analyzed.

Results: Altogether, 19298 patients diagnosed as genital warts were followed for a median of 5.4 years. The highest incidence rate peaked in the age intervals 20-29 years. A total of 829 malignancies were identified, 255 in men and 574 in women, yielding a SIR of 1.4 (95% CI 1.3-1.5). The overall excess risk was higher in men (SIR 1.5), which is partly contributed by HPV-related (SIR 12.9) and anogenital cancers (SIR 12.9). The most markedly increased risk was found for vulva cancer, with SIR 24.3. Significantly elevated risks were also noted for smoking-related cancer for both genders, anal, penile, lung, nomelanoma skin cancer, and renal cancer for men; cervical carcinoma in situ and hepatic cancer for women.

Conclusions: Patients with genital warts have increased risk of certain malignancies in Taiwan. The trend emphasizes the importance of preventive and therapeutic strategies. The possible change of the relationship after the initiation of Pap smear screen and HPV vaccination in Taiwan could be further investigated.

Keywords: genital warts, human papillomavirus, malignancy
ASSOCIATION OF ANTIBIOTIC UTILIZATION AND NEONATAL OUTCOMES IN VERY-LOW-BIRTH-WEIGHT (VLBW) INFANTS WITHOUT PROVEN SEPSIS

Joseph Ting¹, Ashley Roberts², Anne Synnes², Vanessa Paquette³, Simon Dobson¹, Kyong-Soon Lee⁴, Kimberly Dow⁵, Prakesh Shah⁴ and Canadian Neonatal Network

¹Pediatrics, University of British Columbia, ²Pediatrics, University of British Columbia, ³Pharmacy, University of British Columbia, Vancouver, ⁴Pediatrics, University of Toronto, Toronto, ⁵Pediatrics, Queen's University, Kingston, Canada

Background and aims: There is paucity of literature exploring antibiotic exposure and neonatal outcomes other than these infection-related morbidities. Our objectives are: to evaluate (i) the trend of antibiotic utilization in all hospitalized very-low-birth-weight (VLBW) infants across Canada; (ii) association between antibiotic utilization rates (AUR) and outcomes among neonates without culture proven sepsis or NEC.

Methods: We conducted a retrospective analysis of VLBW infants from the Canadian Neonatal Network database admitted during 2010-2014. Multivariate logistic regression analysis was used to assess adjusted odds ratio (AOR) and 95% confidence interval (CI) the association between AUR quartiles and neonatal mortality and morbidities among newborns without culture proven sepsis or NEC.

Results: Among 13738 eligible infants, 11669 (85%) received antibiotics during their hospital courses. The annual AUR decreased from 0.24 in 2010 to 0.20 in 2014 (p<0.01) in parallel with the reduction in late-onset sepsis; 19% to 14% (p<0.01) during the same period. Among the 8824 infants without sepsis or NEC, the higher AUR (Q4 vs.1) was associated with the composite outcome of mortality or major morbidity (AOR 2.50; 95%CI 2.13-2.94), chronic lung disease (AOR 1.45; 95% CI 1.20-1.75), persistent periventricular echogenicity / echolucency on neuroimaging (AOR 1.53; 95% CI 1.09-2.14) and retinopathy of prematurity stage 3-5 (AOR 2.76; 95% CI 1.76-4.32).

Conclusions: There was a decrease in AUR from 2010 to 2014. High AUR was associated with adverse neonatal outcomes among infants without culture-proven sepsis or NEC.
Table 1: Infant & maternal characteristics and AUR in babies without sepsis-related complications (those who had any of sepsis or NEC were excluded)

<table>
<thead>
<tr>
<th></th>
<th>Quartiles of AUR</th>
<th>Association</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
<td>Q3</td>
</tr>
<tr>
<td><strong>Number of infants</strong></td>
<td>2195</td>
<td>2216</td>
<td>2210</td>
</tr>
<tr>
<td><strong>Antibiotic utilization</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>AUR range</em></td>
<td>(0.01, 0.09)</td>
<td>(0.09, 0.17)</td>
<td>(0.17, 0.32)</td>
</tr>
<tr>
<td><strong>Infant characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gestational age, weeks; mean (s.d.)</td>
<td>28.1 (2.0)</td>
<td>28.1 (2.1)</td>
<td>28.1 (2.4)</td>
</tr>
<tr>
<td>Birth weight, grams; mean (s.d.)</td>
<td>1100 (254)</td>
<td>1088 (251)</td>
<td>1078 (259)</td>
</tr>
<tr>
<td><strong>Neonatal outcomes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortality or major morbidity**, n (%)</td>
<td>480 (22%)</td>
<td>604 (27%)</td>
<td>660 (30%)</td>
</tr>
<tr>
<td>Mortality, n (%)</td>
<td>3 (0.1%)</td>
<td>14 (0.6%)</td>
<td>25 (1.1%)</td>
</tr>
<tr>
<td>Chronic lung disease, n (%)</td>
<td>400 (18%)</td>
<td>507 (23%)</td>
<td>550 (25%)</td>
</tr>
<tr>
<td>Persistent periventricular echogenticity/echolucency, n (%)</td>
<td>65 (3%)</td>
<td>87 (4%)</td>
<td>82 (4%)</td>
</tr>
<tr>
<td>Retinopathy of prematurity** Stage III, n (%)</td>
<td>47 (3%)</td>
<td>98 (7%)</td>
<td>131 (11%)</td>
</tr>
</tbody>
</table>

* Chi-square test for rates; ANOVA for continuous variables; *Cochran-Armitage test for rates, regression model to test the hypothesis that slope of the best fit line is zero for continuous variables.
** Major morbidities = PVL, ROP, sepsis, CLD.
† Antibiotic utilization rate of each individual patient is calculated as following: antibiotic-day of each patient (the day exposed to one or more antibacterial or antifungal agents administered intravenously or intramuscularly).

**Keywords:** antibiotic, Neonatal morbidity, very low birth weight
BURULI ULCER IN NON-ENDEMIC COUNTRIES: A REPORT OF TWO IMPORTED CASES
Margarida Rafael 1, Inês Marques 1, Catarina Lacerda 1, Patrícia Pais 1, Paula Afonso 1, Carlos Barradas 1
1Pediatrics, Centro Hospitalar Barreiro-Montijo, Barreiro, Portugal

Background and aims: Buruli ulcer (BU) is a debilitating chronic infection of the skin and soft tissues caused by Mycobacterium ulcerans. Despite being the 3rd most common mycobacteriosis, it is considered by WHO a neglected tropical disease.

Methods: We present a 16-year-old boy and an 11-year-old girl from Guinea-Bissau, admitted in our centre respectively 1 day and 2 weeks after arriving to Portugal. He reported 3-months evolution of ulcerative lesions on the right lower limb - 4 ulcerative painful lesions, 1-5cm, undermined edges and necrotic areas. She reported 1-month evolution of a painless ulcerative lesion on the right lower limb. There were no others symptoms and the remaining observation was normal.

Results: On both, the cultures (blood and lesion) for Mycobacterium were negative, immunity’s evaluation and thoracic-abdominal-pelvic CT were normal. Tuberculin skin test revealed a 20 mm induration at 72h and IGRA was positive. On both lesions’ biopsies acid-fast stain was positive (2+), PCR for M. tuberculosis was negative, PCR for M. ulcerans inconclusive and final histopathology was reported as possibly consistent with BU. In both cases BU was considering the most likely diagnosis and the patients started therapy with rifampicin and clarithromycin orally for 8 weeks. After finishing treatment, clinical improvement was observed, with complete regression of cutaneous lesions on both cases.

Conclusions: Mycobacteria’s difficulty in isolation should not overlook a BU diagnosis. This case illustrates the importance of diagnostic suspicion and timely treatment in the prognosis of this patients.

Keywords: Buruli ulcer, Mycobacterium ulcerans, tropical disease
Infectious Diseases

CANADIAN PERINATAL HIV SURVEILLANCE PROGRAM (CPHSP): DEMOGRAPHICS, PERINATAL HIV TRANSMISSION, AND TREATMENT IN PREGNANCY IN CANADA

Laura J. Sauvé, Joel Singer, Ari Bitnun, Ariane Aliment, Terry Lee, Lindy Samson, Jason Brophy, Deborah Money, Wendy Vaudry, Fatima Kakkar, Normand Lapointe on behalf of the Canadian Perinatal HIV Surveillance Program

1Pediatrics, University of British Columbia, 2Oak Tree Clinic, BC Women's Hospital, Vancouver, 3University of British Columbia, 4Canadian HIV Trials Network, Vancouver, BC, 5Hospital for Sick Children, Toronto, ON, 6Children's Hospital of Eastern Ontario, Ottawa, ON, 7BC Women's Hospital and Health Centre, Vancouver, BC, 8University of Alberta, Edmonton, AB, 9Ste Justine Hospital, Montreal, QC, Canada

Background and aims: To describe demographics of mother-infant pairs (MIP), antiretroviral (ART) treatment during pregnancy and vertical transmission (VT) rates in the Canadian perinatal HIV surveillance cohort of births to HIV+ mothers from 1990 to 2014.

Methods: 22 Canadian pediatric and HIV centres report maternal and infant data yearly. VT rates include MIP delivered in Canada identified within 3 months after birth. Data collected include maternal characteristics, pregnancy ART and infant outcome.

Results: Of the 233 identified HIV+ women giving birth in Canada in 2014, 35% were identified in Ontario, 20% in Québec, 18% in Alberta, 11% in BC, 8% in Saskatchewan, and 8% in Manitoba; 70% had acquired HIV heterosexually, 16% through injection drug use (IDU) and 3% perinatally; 54% of mothers were black and 17% were indigenous. Among the 98% of mothers who received combination ART (cART) before delivery, 1 perinatally infected infant was born to a mother with poor adherence. Among 5 MIP who did not receive ART, there were no perinatal transmissions. The proportion treated with cART has steadily increased from 86.5% in 2007 to 97.8% in 2014. Among 3210 MIP identified perinatally in the cART era (1997-2014), the overall VT rate was 2.0% but only 0.7% in MIP receiving cART and 0.1% in women receiving >4 weeks of cART.

Conclusions: VT rates of HIV in Canada are very low. There are still a few women who are not optimally treated leading to rare cases of vertical transmission. Efforts to sustain identification and treatment of pregnant HIV-positive women to enhance their health and that of their infants must continue.

Keywords: None
Infectious Diseases

CHANGING TRENDS IN CLINICOPATHOLOGICAL PARAMETERS IN DENGUE WITH EVLUATION OF PREDICTORS OF POOR OUTCOME IN CHILDREN

Rani Gera* 1, 2
1 Pediatrics, VMMC, 2 Pediatrics, Safdarjung Hospital associated with VMMC, Delhi, India

Background and aims:
To evaluate association between clinical parameters at presentation and prognosis.

Methods:
Retrospective observational study. Children with dengue fever along with serological IgM Elisa positive or antigen NS1 positivity were included.

Continuous variables were analysed using percentage, mean, standard deviation. Categorical variables were analysed using chi-square test. P value <0.05 was considered significant.

Results: 69 patients of dengue, Ig M Elisa or antigen NS1 +ve proven. The mean age of presentation was 7.1±3 years. Complaints were lethargy 72.5%, abdominal pain 71%, persistent vomiting 63.8% mucosal bleed (39.1%) The mean duration of hospital stay was 4.2 days children having more than 4 warning signs and received more than 2 units whole blood had stay longer than 5 days (p<0.003).

There was a significant correlation (p<0.000) between three warning signs and prolonged hospital stay >5 days (p<0.000) and progression to shock. Predictor of poor outcome. 50% had hepatomegaly and 17% third space fluid accumulation, these factors independently had significant correlation with shock (p<0.005 and 0.000).

Conclusions: Children with Lethargy, abdominal pain and mucosal bleed were the commonest for sick children. Fever in all the patients. Lethargy, presence of more than 3 warning signs at the time of presentation, more than 5 days duration of hospital stay can be used as predictors of severe dengue.

Keywords: Dengue, NS1 antigen
CHILDHOOD TB: WHAT DO PARENTS/CAREGIVERS KNOW? – A STUDY FROM NORTHERN NIGERIAN

Adeola Orogade*1

1Paediatrics, Ahmadu Bello University Teaching Hospital, Shika Zaria, Nigeria

Background and aims: Childhood TB is considered a social disease of children from low socioeconomic families that are poor, lack knowledge about disease and live in communities that lack access to health services (WHO, 2013). However, TB has often been found in children of families from high socioeconomic class with access to health services. (Orogade et al, 2013). Parents’ knowledge is an important tool in child TB care (CDC, 2014). This study was designed to identify knowledge gaps among care givers of children with TB.

Methods: A structured questionnaire was administered to consenting parents/guardians of children with TB in 2 health facilities: secondary in Kaduna city and tertiary in Shika, Zaria, a semi urban area. Descriptive statistics were expressed as percentages, while chi - square test was used to determine significance of associations.

Results: The study involved 170 respondents:30 from the city and 140 from the semi-urban area. Majority of them (92.3%) were the parent of the child and all except 4 were women. 21.7%, mostly from the city (χ²=181, p=0.00)knew TB is caused by a germ, although none knew the name. 66.5% knew adults spread the disease, while 90.5% believed that children with TB could also spread disease. Only 17.6% identified their child’s symptoms as TB but there was no difference between groups (χ²=1.9, p=0.16). 80% of the city respondents where in denial on disclosure. 22.9% linked their child’s illness to receipt or otherwise of BCG vaccine and only 2.9% knew the significance of having a BCG scar.

Conclusions: TB knowledge is inadequate across classes and this should be appropriately addressed.

Keywords: Caregivers Perspective, Childhood tuberculosis
Background and aims: Bronchiolitis is an acute infection of the lower respiratory tract that is usually caused by a viral agents. Respiratory Syncytial virus is the most common agent but the other viruses can also be seen. In our study, we aimed to evaluate the viral agents and to evaluate the clinical and demographic data of patients who were hospitalized due to acute bronchiolitis

Methods: Children younger than 3 years of age who were hospitalized for acute viral bronchiolitis between August 2013 and January 2016 were evaluated. Respiratory tract infection agents were investigated with real-time polymerase chain reaction method

Results: A total of 141 children were included in this study. The mean age was 6.3 ± 7.1 months, and 64.5% were male. Of the 141 children, at least one respiratory tract pathogen was detected in 92.9%. Of 52 (37%) had multiple viral infections (50 children had dual infections and 2 (1.4 %) had triple infections). Respiratory syncytial virus (RSV) was the most common virus identified in 65 patients (46.1%) followed by rhinovirus (n=53, 37.6%).

Conclusions: In this study, where viral agents were determined via PCR in patients who were followed up due to the diagnosis of acute bronchiolitis, RSV was detected as the most common agent, as in other studies. In almost half of the RSV positive patients RSV was accompanied by a second or third agent. Rhinovirus, which was seen in more than one third of the patients stood out as the second major pathogen.

Keywords: acute bronchiolitis, infant, polymerase chain reaction, respiratory syncytial virus
Infectious Diseases

CLINICAL SCORE FOR THE DIAGNOSIS OF BORDETELLA PERTUSSIS
Alan Castañeda* 1, Alejandro Almaraz1, Gabriel Salinas1, Carloman Escobar1, Karla Chávez1, Esteban Camacho1, Julieta Rodríguez1, Jesús Santos1 and Hospital Materno Infantil de Alta Especialidad
1Department of Pediatrics, Escuela de Medicina, Tecnológico de Monterrey, Monterrey, Mexico

Background and aims: The disease caused by Bordetella pertussis has reemerged in past years in Mexico. Children less than a year old are at high risk of infection, therefore, three of the six immunizations are given at this time period. The aim of this study is the development of a clinical score for the diagnosis of infection by B. pertussis.

Methods: Patients less than a year old that were diagnosed with Pertussis-like syndrome between the period 2010 and 2015 were selected. Out of 251 patients, two groups were obtained: one with 155 patients infected by B. pertussis, confirmed with PCR or culture, the other with 96 patients without the infection. Using different variables in the clinical history, a clinical score was developed.

Results: Out of 25 initial variables, 6 were chosen to generate the score. These variables were paroxysms of coughing, blushing cough, pneumonia, leukocytes, lymphocytes and wheezing. A value was assigned for each variable. A score of \( \geq 7 \) indicates positive for infection by Bordetella. The score was run through the sample and a sensitivity of 83.7%, specificity of 74.5%, positive predictive value of 92.5% and negative predictive value of 92.8% were obtained.

Conclusions: The score had a better sensitivity compared to other diagnostic tests and a high positive predictive value. Therefore, it is useful for the opportune diagnosis of whooping cough, allowing early treatment for this disease.

Keywords: Bordetella pertussis, cough, Diagnosis, infant, score, whooping cough
Infectious Diseases

CLINICAL, RADIOLOGICAL AND IMMUNOLOGICAL ASSESSMENT OF HOUSEHOLD CONTACT CHILDREN OF PULMONARY TUBERCULOSIS PATIENTS FROM THE CITIES OF MEDELLIN, BELLO AND ITAGUI, COLOMBIA

Dione Benjumea 1, Claudia Beltrán1, Jaime Robledo2, 3, Diana Marín2, Luis Fernando Barrera1, Andrea Restrepo4, Lina Cadavid4, Guillermo Vélez5, 6, Fernando Montes7, Henry Pulido8, Mauricio Suarez7, Maria Patricia Arbeláez1

1Universidad de Antioquia, 2Universidad Pontificia Bolivariana, 3Corporación para Investigaciones Biológicas, 4Hospital Pablo Tobón Uribe, 5Universidad CES, 6Hospital General de Medellín, 7Secretaría de Salud de Medellín, Medellín, 8Secretaría de Salud de Bello, Bello, Colombia

Background and aims: Children contacts of patients with pulmonary tuberculosis (TB) have an increased risk of developing active TB. Isoniazid Preventive Treatment (IPT) decreases the risk but active TB must be ruled out. We describe preliminary results of clinical, radiological and immunological assessment of household contact children of pulmonary TB patients from Medellin, Bello and Itagui, Colombia, before undergoing IPT.

Methods: Prospective cohort study of 176 children undergoing IPT. Household contact children (under 5 years) of confirmed pulmonary TB patients underwent clinical (checklist assessing signs and symptoms of active TB), radiological (chest X-ray, standardized reading), immunological (Tuberculin Skin Test -TST- and Quantiferon TB Gold -QTF-) and laboratory (smear, culture or molecular diagnosis) evaluation.

Results: From March 2015 to January 2016, 202 children were assessed, 55.7% male, median age 2.55 years. After clinical assessment, 40 (19.8%) children met clinical criteria for active TB, 10 (4.6%) met radiological findings consistent with TB, 4 (2%) met both clinical and radiological criteria, 3 children had a microbiological diagnosis of active TB. From 189 children, 138 (73%) were TST positive (≥5mm). Fifty two out of 153 children (34%) classified as QTF+, and 101 (66%) QTF-, for an overall concordance of 54.97%. Ninety (44.6%) children are under IPT.

Conclusions: The combined use of clinical, radiological and immunological assessments (clinical checklist, graphic form for radiological evaluation) to identify M. tuberculosis-infected children may contribute to properly select candidates to undergo IPT.

Keywords: Latent Tuberculosis, preschool child, tuberculosis
CONGENITAL CYTOMEGALOVIRUS INFECTION: A RARE CAUSE OF NEONATAL MOBIDITY IN NIGERIA

Elizabeth-Martha Okorie¹, Cyrina Amadiobi², Joy Eze³
¹Department of Paediatrics, University of Portharcourt Teaching Hospital, Portharcourt, Nigeria, ²University of Portharcourt, Teaching Hospital, Portharcourt, Nigeria, Portharcourt, ³Paediatrics, Department of Paediatrics, Federal Medical Centre, Owerri, Nigeria, Owerri, Nigeria, Owerri, ³Paediatrics, University of Nigeria Teaching Hospital, Enugu, Nigeria, Enugu, Nigeria

Background and aims: Cytomegalovirus (CMV), a member of the herpes virus family, is one of the organisms implicated in intrauterine infections. Invasive congenital CMV infection is characterised by multiorgan system involvement including central nervous system, haematological and musculoskeletal systems. It is an uncommon cause of neonatal morbidity in Nigeria as there is paucity of data on Congenital CMV incidence in Nigeria. We report a case of congenital CMV infection seen in Port Harcourt, Nigeria.

Methods: Baby A.O was a 6 week old male with generalised skin rash, fever, and jaundice from birth; paleness of the body and abdominal swelling of 1 week duration. Pregnancy was uncomplicated and carried till term. He cried at birth and weighed 3350g.

Results: He had generalised ‘blue berry muffin’ like skin rashes, petechiae, hyperpigmented nodular lesions, pyrexia, severe pallor, jaundice, respiratory distress, evidence of meningitis, and hepatosplenomegaly. ELISA was reactive for CMV immunoglobulin G (206.77 u/ML), CMV PCR positive (1700 cps/ml), severe anaemia, thrombocytopenia and conjugated hyperbilirubinaemia (898 umol/l).

He received ganciclovir, antibiotics, repeated blood transfusions for recurrent anaemia; was discharged home 7 weeks later. He is currently on follow-up.

Conclusions: Congenital Cytomegalovirus infection is a rare cause of neonatal morbidity and mortality in Nigeria with long term risk of hearing loss, visual impairment and other neurological complications. There is need for a high index of suspicion and early intervention in order to improve outcome.

Keywords: Blue berry muffin rash, CMV, Ganciclovir, Hepatosplenomegaly, Jaundice, Recurrent anaemia
Infectious Diseases

CYTOMEGALOVIRUS-ASSOCIATED MENETRIER DISEASE IN CHILDHOOD: THREE CASE REPORTS

N. Zafer KURUGÖL, Şule Gökçe

1Department of Pediatrics, Ege University Faculty of Medicine, Izmir, Turkey

Background and aims: Menetrier disease, which is an uncommon gastropaty in childhood, characterized by gastric hypertropy and hypoalbuminemia secondary to protein loss through the gastric mucosa. It can present edema, emesis, diarrhea, anorexia, abdominal pain and vomiting. One of the major causes of Menetrier disease is Cytomegalovirus infection in children. Here we present three cases of Menetrier disease due to Cytomegalovirus infection.

Methods: Routine biochemical measurements, Cytomegalovirus identification, histopathological examinations

Results: A 2-month-old, a 3-month-old and 11-year-old patients were admitted to our hospital with generalized edema. Routine blood counts and biochemical investigations prothrombin time were normal except serum hypoalbuminemia. Serologic tests of blood for cytomegalovirus immunoglobulin G, M, CMV DNA were positive. The third patient was done upper gastrointestinal endoscopy and it was shown us hypertrophic gastropathy with edematous gastric mucosa and thickened gastric folds, as well as signs of gastritis. His biopsies revealed marked hyperplastic foveolar mucosa in the setting of mild chronic gastritis without activity. All patients fully recovered with valgancyclovir and intravenous albumin followed by furosemid, except for third one who was given supportive care. Several weeks later they were asymptomatic with no edema and their albumin levels were normal.

Conclusions: Although MD is rare in childhood, it is important to consider protein losing hypertrophic gastropaty/MD when a child presents with generalized edema, hypoalbuminemia and active CMV infection.

Keywords: child health, hypoalbuminemia, Menetrier disease
DESCRIPTION OF ASKARIDIASIS CASE IN 4 YEAR OLD CHILD
Anastasia Anastassiou-Katsiardani1, Aggeliki Gerovassili2, Kyriaki Velali1, Konstantinos Patris1, Thomas Papalexandris1, Vasileios Vlachopoulos1, Athanasia Stelianidi1, Eleni Koufoglou3, Eirini Koukloumperi1, Grigoris Grivas1
1Pediatric Clinic, Achillopouleio General Hospital, Volos, 2EFYKE, GENETIC IST, LARISA, 3Pediatric Clinic, General hospital Volos, Pediatric clinic., Volos, Greece

Background and aims: Infections/infestations from “nimatelminthes” are common in developing countries, often causing disease both in humans and in pets. Often introduced in industrialized countries. These infections are typically caused by swallowing of eggs or skin penetration of larvae found in soil. Aim: The description and presentation of an incident infection with nematode-roundworms in child from the broader area of Volos.

Methods: In March 2015, a 4 year old child of Greek origin from the region of Volos entered the Emergency Department of the General Hospital of Volos, which was found to have been infected by intestinal nimatelminthe, which was detected during bowel movement.

Results: The differential diagnosis included ascaridiasis, toxokariasis, schistosomiasis and tapeworm infection. The sample was sent to the National School of Public Health for the diagnosis and the incident was recorded. It was found that the child was infected by askaridiasis/roundworms, (possibly by animals (dogs) in their yard). The treatment which was followed was oral mebendazole (vermox), with 100mg/dose for three days both for the patient and his family and direct parasitic control was planned of family members.

Conclusions: Although in the minds of the average Greek doctors, the chapter of infections by parasites may seem too ‘academic’, but the description and recording of this case may reshape this perception. At the same time, prevention is a key pillar in controlling these infections and effective control of this infestation, which has a worldwide distribution, which should be based on the appropriate treatment.

Keywords: animal infections, Askaridiasis, nimatelminthes
Infectious Diseases

EFFICACY OF ANTI TUBERCULAR THERAPY ON SERUM ZINC AND ALBUMIN LEVELS IN CHILDREN IN DIFFERENT FORMS OF TUBERCULOSIS IN THE AGE GROUP OF 0-12 YEARS
Vinod Ratageri* 1, Ajay Sankar1
1pediatrics, kims, hubballi, India

Background and aims: To determine the efficacy of Anti tubercular therapy on serum zinc and albumin levels in different forms of tuberculosis in the age group 0-12 years.

Methods: Prospective hospital based observational study conducted at KIMS, Hubli. Inclusion: All children between the age 0-12 years, who were newly diagnosed tuberculosis. Exclusion: Children who have received zinc supplementation in the previous month, with acute or chronic, liver, renal, or cardiac diseases. For all children, serial estimation of serum zinc and albumin levels were done at the time of enrolment, at 2 months and at 6 months of ATT. Statistical analysis was done using SPSS 20.0.

Results: A total of 31 cases were enrolled. The mean age was 4.36 ± 3.54 years. Male to female ratio was 1.81:1. Among the cases, 16(51.61%) had pulmonary tuberculosis while 15(48.39%) had extra pulmonary disease. All children had hypozincemia at diagnosis. The mean serum zinc levels in children with tuberculosis at diagnosis, at 2 months and at 6 months were 48.34 ± 16.85 µg/dl, 41.10 ± 16.28 µg/dl and 63.32 ± 35.84 µg/dl respectively. The levels of serum albumin at diagnosis, at 2 months and at 6 months were 4.32 ± 0.68 g/dl, 4.70 ± 0.45 g/dl and, 5.01 ± 0.35 g/dl respectively. Although the mean serum zinc level in severe forms of TB (36.82 ± 16.63 µg/dl) was lesser compared to non severe forms (50.05 ± 16.50 µg/dl); All the 31 children improved with ATT

Conclusions: Serum zinc and albumin levels improved significantly after ATT, and are useful markers to assess the efficacy of antitubercular therapy. However, they are not good markers of severity of disease.

Keywords: ATT, Childhood tuberculosis, serum albumin, serum zinc
EFFICACY OF PROBIOTICS IN PREVENTING CANDIDA COLONIZATION AMONG CRITICALLY ILL PEDIATRIC PATIENTS: A META-ANALYSIS
Rhanee Salvado*, Ana Katherina Rodriguez¹, Mary Anne Castor¹
¹Department of Pediatrics, University of the Philippines-Philippine General Hospital, Manila, Philippines

Background and aims: Critically ill patients in intensive care units have altered local defense mechanisms making them susceptible to opportunistic infections. Probiotic supplementation may aid in resisting microbial colonization, eliminating potential pathogens, restoring natural gut flora, and modulating immune function. This study aimed to evaluate the effect of probiotics in preventing Candida colonization among pediatric patients in the intensive care units.

Methods: Electronic searches in various medical databases were conducted. Citations, reference lists of articles, unpublished and ongoing trials were also explored. Primary outcome measure was overall incidence of enteric colonization with Candida species. Secondary outcomes were duration of hospitalization and incidences of bacterial infections and necrotizing enterocolitis. Statistical analyses were conducted in Review Manager 5.3.

Results: Four randomized controlled trials with an overall low risk of bias were included. Probiotics were associated with a decreased incidence of fungal colonization (RR 0.60, 95% CI 0.48 to 0.75) and lessened days of hospitalization (MD -5.01, 95% CI -8.14 to -1.88). Probiotics had no significant effects in reducing the incidences of bacterial infections (RR 0.66, 95% CI 0.36 to 1.19) and necrotizing enterocolitis (RR 0.75, 95% CI 0.15 to 3.91).

Conclusions: Supplementation with probiotics has been shown to decrease the incidence of enteric colonization with Candida species, as well as lessen the duration of hospitalization, when administered orally to critically ill pediatric patients in the intensive care units.

Keywords: Candida colonization, Intensive care, Probiotics
FACTORS ASSOCIATED WITH KLEBSIELLA BACTEREMIA IN UNDER–FIVE CHILDREN ADMITTED WITH DIARRHEA AND THEIR OUTCOME

Shamima Akhter1, Tahmeed Ahmed1, Nur Haque Alam1, Shafiqul Alam Sarker1, Mohammod Jobayer Chisti1
1Nutrition and Clinical Services Division (NCSD), International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh

Background and aims: Although, *Klebsiella* bacteremia in children is perceived to be associated with fatal consequences, data are scarce on *Klebsiella* bacteremia in children with diarrhea. We evaluated the factors associated with *Klebsiella* bacteremia in such children.

Methods: In this retrospective chart analysis, data of all diarrheal children was collected from Dhaka Hospital of International Centre for Diarrheal Disease Research, Bangladesh (icddr,b) from January 2010 to December 2012 who had their blood culture done. Comparison of clinical and laboratory characteristics was done in children with (cases=30) and without (controls=90) *Klebsiella* bacteremia.

Results: As expected the cases had higher fatality rate compared to the controls (p<0.001). In logistic regression analysis, after adjusting for potential confounder such as severe dehydration, the cases were independently associated with lower median age [3.5 (IQR:1,10) months] (p=0.049), severe wasting (p=0.008), lethargy (p=0.003), hospital acquired infection (p=0.001), and positive stool growth (p=0.003).

Conclusions: Under-five diarrheal children presenting at young infancy, with severe wasting, lethargy, hospital-acquired infection are prone to have *Klebsiella* bacteremia and they are also likely to have positive bacterial stool culture. Identification of these simple features may help in early case detection and management of *Klebsiella* bacteremia to reduce the morbidity and deaths in such children.

Keywords: None
Infectious Diseases

HIV EXPOSED, BUT UNINFECTED INFANTS: MISSED OPPORTUNITIES FOR EARLY DEVELOPMENTAL SERVICES FROM A CANADIAN TERTIARY CARE CENTRE

Laura Sauvé1,2, Zahra Pakzad3, Kamal Abdulwahab2, Lanna Olson1, Arash Adjudani1, Ariane Alimenti1,2

1Pediatrics, University of British Columbia, 2Oak Tree Clinic, 3BC Women’s Hospital, Vancouver, Canada

Background and aims: HIV exposed uninfected infants (HEU) are at risk for adverse developmental outcomes. Evidence shows that social determinants of health play a larger role than does HIV. Developmental screening and early referral may improve outcomes.

Methods: A quality assurance retrospective chart review was done of all HEU cared for in a provincial family-centered HIV clinic born from January 1, 2008 to June 30, 2013. We examined developmental screening, referrals, and referral completion in and identified barriers to referral completion.

Results: Of 112 subjects, 64 (57%) were male and 87 (77%) born at term (>37 weeks). All mothers were HIV+ and 78 (66%) families had other social vulnerabilities (parental ill health, parental addictions, poverty, limited literacy, limited English, child protection service involvement). 104 (92.8%) ≥1 standardized developmental assessment. A developmental concern was noted in 46 (44.2%), and of those 40 (87.0%) were referred on. 43 referrals were made to developmental service providers; 58.1% of these had been seen and of those, 60% had reports sent to the clinic. Of 36 referrals to general pediatricians, 69.4% had occurred, 92.0% of whom communicated recommendations back to the clinic. Barriers to referral completion included inability to contact caregivers (7.3%), patient no-show (13.0%), and waiting lists (23.2%).

Conclusions: HEUs had difficulty accessing developmental services with both systematic issues (wait lists, confusing system) and family issues (no phone, difficult to contact, moving frequently.) Future work will examine how to overcome these barriers.

Keywords: access to care, developmental screening, HIV, HIV exposed but uninfected infants
Infectious Diseases

HOSPITAL-BASED PROSPECTIVE MULTINATIONAL MULTICENTER SURVEILLANCE OF KAWASAKI DISEASE (KD) IN CHILDREN FROM 20 LATIN AMERICAN (LA) COUNTRIES: SUCCESS, OBSTACLES AND CHALLENGES OF THE REKAMLATINA NETWORK

Rolando Ulloa-Gutierrez 1, Andrea Salgado2, Adrián Collia3, Luis Martín Garrido-García4, Marco A Yamazaki-Nakashimada5, Dora Estripeaut6, Lourdes Dueñas7, Patricia Saltigeral8, Greta Miño9, German Camacho-Moreno10, Enrique Faugier-Fuentes11, Virgen Gómez12, Olguita del Aguila13, Francisco Rodríguez14, Martha Alvarez-Olmos15, Lucila Martinez-Medina16, Marco T Luque17, Heloisa H de Sousa Marques18, Luisa B Gámez González19, Kathia Luciani20, Mildred Zambrano21, Carlos Grazioso22, Nora Bueno23, Lorena Franco24, Fernanda Cofré25, Paola Pérez-Camacho26, Giannina Izquierdo27, Pilar Picart27, María Catalina Pérez28, Sandra Beltrán29, Mario Melgar30, Carlos Daza31, Eduardo López-Medina32, Arturo Borzutzky33, Adriana H Tremoulet34 and The REKAMLATINA-1 Study Group Members

1Servicio de Infectología Pediátrica, Hospital Nacional de Niños de Costa Rica, San José, Costa Rica, 2Infectología Pediátrica, Universidad Pontificia de Chile, Santiago, Chile, 3Departamento de Pediatría, Sanatorio Mater Dei, Buenos Aires, Argentina, 4Cardiología Pediátrica, 5Clinical Immunology Department, Instituto Nacional de Pediatría, Distrito Federal, Mexico, 6Infectología Pediátrica, Hospital del Niño, Ciudad Panama, Panama, 7Hospital Benjamín Bloom, San Salvador, El Salvador, 8Servicio de Infectología Pediátrica, Instituto Nacional de Pediatría y Star Médica Hospital Infantil Privado, Distrito Federal, Mexico, 9Infectología Pediátrica, Hospital del Niño "Francisco de Ycaza Bustamente", Guayaquil, Ecuador, 10Infectología Pediátrica, Hospital de la Misericordia, Bogotá, Colombia, 11Reumatología Pediátrica, Hospital Infantil de México Federico Gómez, Distrito Federal, Mexico, 12Departamento de Enfermedades Infecciosas, Hospital Infantil "Dr. Robert Reid Cabral", Santo Domingo, Dominican Republic, 13Unidad de Infectología Pediátrica, Hospital Edgardo Rebagliati, Lima, Peru, 14Inmunología Pediátrica, Hospital de Especialidades Instituto Hondureño de Seguridad Social, Tegucigalpa, Honduras, 15Infectología Pediátrica, Fundación Cardio Infantil, Bogotá, Colombia, 16Infectología Pediátrica, Centenario Hospital Miguel Hidalgo, Aguas Calientes, Mexico, 17Infectología Pediátrica, Hospital Escuela Universitario, Tegucigalpa, Honduras, 18Infectología Pediátrica, Hospital Das Clínicas da Faculdade Medicina da USP, Sao Paolo, Brazil, 19Infectología Pediátrica, Hospital Infantil de Chihahua, Chihahua, Mexico, 20Infectología Pediátrica, Hospital de Especialidades Pediátricas de la Caja del Seguro Social, Ciudad Panama, Panama, 21Infectología Pediátrica, Hospital de Niños Dr. Roberto Gilbert Elizalde, Guayaquil, Ecuador, 22Infectología Pediátrica, Sanatorio Nuestra Sra. Del Pilar/Hospital General San Juan de Dios, Ciudad Guatemala, Guatemala, 23Cardiología Pediátrica, 24Reumatología Pediátrica, Hospital Infantil Municipal de Cordoba, Córdoba, Argentina, 25Infectología
Background and aims: Prior to 2013, the regional epidemiology of KD in LA children was unknown and only individual reports from some countries were available. Our main objective is to describe the main success and challenges of prospective surveillance of KD by REKAMLATINA, the largest non-funded multinational network studying the epidemiology, clinical aspects and treatment of KD.

Methods: Ongoing prospective multinational multicenter surveillance study of children with KD at main pediatric/general referral hospitals from 20 LA countries, period 06-1-2014 to 01-15-2016.

Results: 402 patients from 51 hospitals have been enrolled so far. Countries with the most representative data according to their population include Mexico, Costa Rica, Panama, El Salvador, Honduras, Colombia, Ecuador, Dominican Republic and Chile. Other diverse and unexplored aspects of KD have been submitted and presented in 9 research abstracts at international conferences. Main obstacles at many centers include lack of standard echocardiographic descriptions including coronary diameter measurement, z-score determination, and classification of aneurysms into small, medium or giant. Main current challenges include recruiting more cardiologists at each site and more number of centers, especially from large and populated countries (Brasil, Venezuela, Peru and Argentina).

Conclusions: REKAMLATINA network has become an important model research group to study KD in LA children. However, improvement in awareness, surveillance, and reporting is needed, particularly in Nicaragua, Cuba, and Puerto Rico.

Keywords: cardiac disease, epidemiological study, Kawasaki disease, Latin America, Networks, Surveillance
HOST AND VIRUS FACTORS OF CHRONIC HEPATITIS B AND IT’S PROGRESSION IN CHILDREN FROM FAMILY CASES
Feruza Abdullaeva¹, Flora Inoyatova*¹, Matluba Alimova¹
¹Republican Specialized Research-Practical Medical Center of Pediatrics, Tashkent, Uzbekistan

Background and aims: To study specific characteristics of chronic hepatitis B (CHB) in children from family cases (FC) in relation to HBV genotype in the carrying of haptoglobin phenotype (Hp)

Methods: 154 children of Uzbek population with CHB were investigated from FC. Group of comparison has 80 children from “monocases” of chronic HBV-infection

Results: 59.0% of patients from FC have Hp2-2 phenotype, while in the comparative group Hp1-1 prevailed (61.2%), that was 2.8 times higher than in the control group. Hp2-1 was found with similar frequency in the both groups (19.4% and 18.8%). During the study of HBV genotypes in the limits of every Hp prevalence of A-genotype was revealed in Hp2-2 in “family” children (64.8% and 31.3%) and Hp1-1 (42.4% vs. 8.1%). D-genotype was noted only in the one third of patients (35.2%), in groups of comparison in 68.7% of children. Presence of C-genotype was not revealed in both groups. In heterozygous phenotype Hp2-1 C-genotype in “family” children was noted in 33.4% of cases. For A-genotype there was characteristic development of HBsAg-negative hepatitis in the limits Hp2-2 (50.8%) and 1-1(42.4%); for D-genotype–HbeAg-negative hepatitis (57.6%) at carrying of Hp1-1, and hepatitis with classic serological picture–in Hp2-1(66.6%)

Conclusions: Children belonging to phenotype Hp2-2 in association with persistence of HBV-A-genotype should be considered as “risk factor” for formation of the FC of CHB

Keywords: None
HYPERNATREMIA IN CHILDREN WITH DIARRHEA: PRESENTING FEATURES, MANAGEMENT, OUTCOME, AND RISK FACTORS FOR DEATH

Lubaba Shahrin¹, Mohammad Jobayer Chisti¹
¹Dhaka Hospital, icddr,b, Dhaka, Bangladesh

Background and aims: To investigate the clinical features, treatment outcome and risk factors for fatal outcome of hypernatremic (HN) diarrheal children.

Methods: We reviewed two data sets of children under five admitted a decade apart to the in-patient ward of the Dhaka Hospital of icddr,b with diarrhea and HN (serum sodium ≥150 mMol/L): (i) March 2001-March 2002 (n=371) as DS1 and (ii) March 2009-August 2011 (n=360) as DS2. We reviewed their de-identified medical information for analyses.

Results: Childhood prevalence of HN in DS1 was 5.1% (371/7212) and in DS2 was 2.4% (360/15,219). The median (inter-quartile range) age of the children was 5 (3.0, 7.0) and 6.0 (4.0, 9.9) months, with serum sodium of 157.5±6.0 and 163.7±12.7 mMol/L respectively. Case-fatality rate was 15% and 19% respectively. In both DS1 and DS2, 55% of patients with HN were admitted during January through April. In logistic regression analysis, the risk for death significantly increased in association with serum sodium ≥170 mmol/L in both the dataset and with nutritional edema, hypoglycemia, and respiratory distress in the DS1 whereas with absent peripheral pulses in absence of dehydration in DS2. Conversely, the risk of death significantly reduced with the sole use of ORS or its use following IV fluid (if indicated) in the management of hypernatremia (for all, p<0.05).

Conclusions: Managing HN in children using only ORS or using it following IV fluid (if indicated) may help to reduce deaths.

Keywords: diarrhea, pneumonia, hypernatremia, fluid resuscitation, deaths, severe acute malnutrition, severe sepsis
IDENTITY BADGES AND LANYARDS IN PAEDIATRICS – A SOURCE OF VIRAL TRANSMISSION?

Daryl Cheng*, Chun Yi Ting, Despina Kotsanas, Carl Kirkwood, Nada Bogdanovic-Sakran, Rhonda Stuart, Jim Buttery

1Monash Children's Hospital, 2Central Medical School, Faculty of Medicine, Nursing & Health Sciences, 3Monash Infectious Diseases, Monash Health, Clayton, 4Enteric Virus Group, Murdoch Childrens Research Institute, 5Enteric Virus Group, Murdoch Children's Research Institute, Parkville, 6Department of Infectious Diseases, Monash Children's Hospital, Clayton, Australia

Background and aims: Identity (ID) badges and lanyards worn by paediatric health care workers (HCW) are reservoirs and potential vectors of nosocomial bacterial infections. Given the higher incidence of viral infections in children, it is important to better appreciate the potential nosocomial viral transmission risk. This study aims to determine the plausibility of ID badges and lanyards worn by paediatric HCWs to act as vectors for nosocomial infections and patient-to-patient transmission of respiratory and gastrointestinal viruses.

Methods: A cross-sectional study was performed in October 2012 and August 2013. Ninety nine ID badges and lanyards from paediatric HCWs were swabbed and tested using polymerase chain reaction (PCR) for nine commonly encountered respiratory and two gastrointestinal viruses. All respiratory and faecal samples performed on paediatric patients for clinical reasons during 2012-2013 were analysed for comparison.

Results: The rate of positive respiratory ID badges and lanyard samples across the study period was 1.0%. This compares with an overall 56.4% positive PCR nasopharyngeal swab rate in tests ordered on paediatric patients across the study period for the same group of respiratory viruses. There were no positive gastrointestinal viruses detected from HCW swabs whereas 4.9% of clinical paediatric faecal samples tested positive for the two targeted viruses (norovirus and rotavirus).

Conclusions: ID badges and lanyards do not play a significant role in the nosocomial transmission of respiratory or gastrointestinal viruses.

Keywords: infection, lanyard, nosocomial, viral
Infectious Diseases

IMMUNODIAGNOSIS OF MYCOPLASMA PNEUMONIA IN CHILDREN WITH HERPES VIRUS INFECTION
Dono Tadjikhanova¹, Dilorom Akhmedova*¹
¹Republican Specialized Research Medical Center of Pediatrics, Tashkent, Uzbekistan

Background and aims: Aims. Study characteristic of immune system in children with mycoplasma pneumonia associated with herpes virus infection

Methods: Observed 190 children with mycoplasma pneumonia associated with herpes virus infection aged from 1 to 3 years: 60 - with antibodies to mycoplasma infection, 140 - with antibodies to mycoplasma infection with herpes virus infection. Diagnosis was established on clinical and laboratory data including PCR and IFA

Results: In mycoplasma pneumonia associated with herpes virus infection in children of early age there was observed more marked disbalance in the immune status expressed by decrease in amount of CD3+,CD4+- lymphocytes, phagocytary neutrophil activity, reliable increase in CD8+, CD16+, CD20+. CCD25+- lymphocytes, activation of CD95 and changes of immunoglobulin classes A,M,G. In this cases level of IL-1beta and IL-8 increased 2 times. IL-4 – 4,6 times, and concentration of TNF-γ reduced 2,9 time. The results obtained indicated about increase in the contents pro inflammatory cytokines and change of balance of immunoregulatory mediators to the cytokines of Th1-profile

Conclusions: The shifts of cytokine net in mycoplasma pneumonia associated with mixed infection, evidently, contribute to the aggravation of immune deficit and, probably, development or intensification of clinical symptomatic

Keywords: None
IMPROVING QUALITY OF CARE FOR PATIENTS THROUGH COLLABORATION: A REVIEW OF THE ANTIMICROBIAL STEWARDSHIP PROGRAM AT BRITISH COLUMBIA CHILDREN’S HOSPITAL

Ashley Roberts¹, Karen Ng², Vanessa Paquette², Joseph Ting¹, Kristopher T Kang¹, Rod Rassekh¹, Srinivas Murthy¹, Peter Tilley¹, Roxane Carr², Ashley Szpurko¹, Joshua Osowicki¹, Simon Dobson¹ and Provincial Health Services Authority Antimicrobial Stewardship Steering Committee

¹Pediatrics, ²Pharmaceutical Sciences, University of British Columbia, Vancouver, Canada

Background and aims: In the age of increasing antimicrobial resistance, judicious use of antibiotics is crucial. In 2013, BCCH began an Antimicrobial Stewardship Program (ASP), involving the collaboration of infectious diseases, general pediatrics, oncology, pediatric intensive care, neonatal intensive care, medical microbiology, pharmacy and information technology specialists.

Methods: The ASP strategies implemented include: Daily audit and feedback and preparation of evidence-based clinical guidelines. Notably, we have not instituted drug formulary restrictions or automatic antibiotic stop dates. We prospectively collected data on the nature of ASP audit and feedback recommendations, acceptance rate of these recommendations and antibiotic utilization and cost values.

Results: We have audited a mean of 56 patients daily. On average, we provide recommendations for 5.5 patients per day, about 9% of the total audited. The acceptance rate of our recommendations ranges from 85-94%. We have observed an overall decrease in antibiotic utilization and a corresponding decrease in hospital antibiotic costs since the inception of the program (Table 1).

Conclusions: Using a combination of daily audit and feedback, area-specific antibiotic stewardship champions and the implementation of evidence-based, clinical guidelines, we have observed an overall improvement in the optimal use of antimicrobials.

Keywords: antibiotic resistance, antimicrobial stewardship, Infectious Diseases
**Infant Zidovudine Prophylaxis for PMTCT: Is 4 Weeks Enough? Data from the Canadian Perinatal HIV/AIDS Surveillance**

Ariane Alimenti¹, ², Laura J. Sauvé¹, ², Lindy Samson³, Deborah Money⁴, ⁵, Terry Lee⁶, Ari Bitnun⁷, Jason Brophy³, Fatima Kakkar⁸, Neora Pick⁴, ⁵, Canadian Perinatal HIV Surveillance Program (CPHSP)⁹

¹Pediatrics, University of British Columbia, ²Oak Tree Clinic, BC Women’s Hospital, Vancouver, ³Children’s Hospital of Eastern Ontario, Ottawa, ON, ⁴University of British Columbia, ⁵BC Women’s Hospital and Health Centre, ⁶Canadian HIV Trials Network, Vancouver, BC, ⁷Hospital for Sick Children, Toronto, ON, ⁸Ste Justine Hospital, Montreal, QC, ⁹Canadian Perinatal HIV Surveillance Program, Canada, Canada

**Background and aims:** While Canadian PMTCT guidelines still recommend 6 weeks of infant zidovudine (ZDV) prophylaxis, some HIV experts are prescribing 4 weeks only.

**Methods:** Retrospective analysis of the Canadian Perinatal HIV/AIDS Surveillance (CPHSP) database. Inclusion criteria: infant born in Canada between 1997-2014, mother on cART in pregnancy, maternal VL<1000 copies/mL near delivery, infant prescribed ZDV mono-prophylaxis, ZDV duration available.

**Results:** 1252 infants were included. Maternal VL near delivery was <50 copies/mL in 90% and 50-999 copies/mL in 10%. Infant ZDV duration was 6 weeks (39–45 days) in 87%, 4 weeks (25-31 days) in 7% and other durations in 6%. Among 82 infants stopping at 4 weeks, 74 (90%) were in BC, representing 26% of all BC infants. Reasons for discontinuation were: neutropenia, anemia, high lactate, parental decision, low risk. There were no cases of intrapartum/postnatal vertical transmission. There was one in utero transmission with documented maternal cART interruption and transiently detectable VL in the 3d trimester.

**Conclusions:** In the CPHSP, the majority of infants still receive 6 weeks of ZDV prophylaxis. Of those receiving 4 weeks, most are from a single site. In this cohort of well controlled MIPs, the single case of in utero transmission would not have been affected by infant ZDV duration. Although further study is necessary, these data suggest that a 4 week course of ZDV in very low risk situations is reasonable. Shortened duration lessens medication burden, risks of myelosuppression and could decrease longterm adverse effects.

**Keywords:** None
INFLUENZA RELATED COMPLICATIONS AND DEATHS IN AUSTRALIAN CHILDREN: SEASONAL SURVEILLANCE 2008-2015

Yvonne Zurynski\textsuperscript{1}, Greta Ridley\textsuperscript{1}, Amy Phu\textsuperscript{1}, Robert Booy\textsuperscript{2}, Elizabeth Elliott\textsuperscript{2}

\textsuperscript{1}Australian Paediatric Surveillance Unit, \textsuperscript{2}University of Sydney, Sydney, Australia

\textbf{Background and aims:} There are few reports describing serious complications and deaths in children during non-pandemic years. We describe severe influenza complications and deaths in children from 2008-2015.

\textbf{Methods:} National surveillance by the Australian Paediatric Surveillance Unit (APSU) 2008 - 2015, July - September each year, for children <15 yrs, admitted to hospital with severe complications of laboratory proven influenza. Information about presenting symptoms, pre-existing chronic disorders, immunization, complications, treatment and outcome were reported by \textasciitilde1600 paediatricians participating in the APSU.

\textbf{Results:} 457 cases were reported. Median age 3 yrs (range: 0-14.8), 57% were boys. 67% had influenza A. Major complications were pneumonia (61%) and encephalitis (13%). Viral/bacterial co-infections were reported in 18%. 174 children had chronic conditions pre-disposing for influenza and 8% were vaccinated. There were 21 deaths, among the deaths 52% had pre-existing conditions.

\textbf{Conclusions:} Serious complications and deaths due to influenza occurred every year. Given that of the 21 deaths almost 50% were previously healthy, there is a need for rapid diagnosis/treatment of children with influenza-like-symptoms and influenza vaccination should be considered for all children. Health professionals should be vigilant to ensure that children are vaccinated.

\textbf{Keywords:} Influenza
Infectious Diseases

INFLUENZA VACCINATION IS MORE EFFECTIVE AGAINST INFLUENZA-LIKE ILLNESS IN SCHOOL-AGE THAN PRESCHOOL CHILDREN IN HONG KONG

Ting Fan Leung1, Renee Wan Yi Chan1, Kam Lun Ellis Hon1, Paul Kay Sheung Chan2
1Department of Pediatrics, 2Department of Microbiology, The Chinese University of Hong Kong, Hong Kong, Hong Kong, China

Background and aims: Influenza imposes substantial healthcare burden in children, which can be prevented by vaccination. This study investigated influenza vaccine effectiveness (VE) in preventing childhood influenza.

Methods: This prospective cohort study recruited children from 15 kindergartens and primary schools. Parents completed a questionnaire on subjects' health and influenza vaccination history. Influenza-like illness (ILI) was diagnosed by modified WHO case definition. Flocked nasopharyngeal swabs (FNPSs) were collected in biweekly school visits during influenza seasons in 2014-15. Influenza was detected by molecular assays.

Results: 623 children provided a total of 2,633 FNPS samples. Thirty-six (11.2%) and 19 (6.3%) subjects had influenza in 2014 and 2015 respectively. Ninety-nine subjects reported ILI. Influenza vaccination was protective against ILI but not laboratory-confirmed influenza by surveillance. Moderate overall influenza VE of 42-52% was observed for ILI, and subgroup analyses showed higher VE for both ILI and mild laboratory-confirmed influenza in school-age children than preschoolers.

Conclusions: Mildly symptomatic influenza is common in children during influenza season. Influenza vaccination is more effective against ILI in school-age than preschool children. (Funded by Health and Medical Research Fund [13120422], Hong Kong SAR)

Keywords: Community study, Influenza, Surveillance, Vaccine effectiveness
**Infectious Diseases**

**KAWASAKI DISEASE (KD) IN MEXICAN CHILDREN: RESULTS FROM A PROSPECTIVE MULTICENTER HOSPITAL-BASED EPIDEMIOLOGICAL AND CLINICAL STUDY OF THE REKAMLATINA NETWORK**

Rolando Ulloa-Gutierrez¹, Luis Martín Garrido-García², Marco A Yamazaki-Nakashimada³, Patricia Saltigeral-Simental⁴, Enrique Faugier-Fuentes⁵, Lucila Martínez-Medina⁶, Luisa B Gámez-González⁷, Diana López-Gallegos⁸, Raymundo Rodríguez-Herrera⁹, Sarbelio Moreno-Espinosa¹⁰, Angel Flores¹¹, Sergio Bernal-Granillo¹², Julieta González-Palacios¹³, Enrique Chacón-Cruz¹⁴, Paola G Martínez-Victoria¹⁵, Jorge A Vázquez-Narváez¹⁶, Deborah Varela-Vega¹⁷, Enrique López-Valentín¹⁸, Norma López-Lara¹⁹, Rafael Hernández-Magaña²⁰, Ignacio Camacho-Meza²¹, Eunice Sandoval-Ramírez²¹, Rocío A Peña-Juárez²², Gabriel Vega-Cornejo²³, Jesús de Lara-Huerta²⁴, Andrea P Salgado²⁵, Adriana H Tremoulet²⁶ and The REKAMLATINA Mexican Study Group Members

¹Servicio de Infectología Pediátrica, Hospital Nacional de Niños de Costa Rica, San José, Costa Rica, ²Cardiología Pediátrica, ³Clinical Immunology Department, Instituto Nacional de Pediatría, ⁴Servicio de Infectología Pediátrica, Instituto Nacional de Pediatría y Star Médica Hospital Infantil Privado, ⁵Reumatología Pediátrica, Hospital Infantil de México Federico Gómez, Distrito Federal, ⁶Infectología Pediátrica, Centenario Hospital Miguel Hidalgo, Aguas Calientes, ⁷Infectología Pediátrica, Hospital Infantil de Chihuahua, Chihuahua, ⁸Cardiología Pediátrica, Star Médica Hospital Infantil Privado, ⁹Pediatrics Department, Instituto Nacional de Pediatría, ¹⁰Infectología Pediátrica, ¹¹Hospital Infantil de México Federico Gómez, Distrito Federal, ¹²Pediatrics Department, Hospital General de Zona 1 (IMSS) / Hospital Angeles CMP, San Luis Potosí, ¹³Cardiología Pediátrica, Centenario Hospital Miguel Hidalgo, Aguas Calientes, ¹⁴Infectología Pediátrica, ¹⁵Pediatrics Department, Hospital General de Tijuana, Tijuana, ¹⁶Infectología Pediátrica, Hospital Infantil de Morelia “Eva Sámano de López Mateos”, Morelia, ¹⁷Pediatrics Department, Hospital Español, Distrito Federal, ¹⁸Alergología e Inmunología Clínica, Hospital para el Niño de Toluca, Morelia, ¹⁹Alergología e Inmunología Clínica, Hospital para el Niño de Toluca, Toluca, ²⁰Infectología Pediátrica, ²¹Alergología e Inmunología Clínica, Hospital de Especialidades Pediátrico de León, León, ²²Cardiología Pediátrica, ²³Reumatología Pediátrica, Hospital General de Occidente, Jalisco, ²⁴Pediatrics Department, Hospital Infantil Universitario de Torreón, Torreón, Mexico, ²⁵Infectología Pediátrica, Universidad Pontificia de Chile, Santiago, Chile, ²⁶Pediatrics Department, University of California San Diego, Kawasaki Disease Research Center, San Diego, CA, United States

**Background and aims:** Mexico is one of Latin American (LA) countries in which there has been more research about KD epidemiology; however, most publications have been case reports and retrospective
studies. We describe the epidemiology, clinical aspects and treatment of the largest prospective multicenter study of KD in Mexican children (ch) as part of a LA surveillance study.

**Methods:** Ongoing prospective multicenter study of LA ch with KD attended at 13 main pediatric/general referral hospitals of Mexico, period 06-1-2014 to 12-31-2015.

**Results:** 119 patients (pts) have been enrolled so far. 74 (62.2%) were male; 98.3% were hospitalized. Median age at admission was 23 (3-171) months, distribution by age groups was: <6 months, 5.9% pts; <24m, 47.9% pts; <5yrs, 82.3% pts. Days of fever at admission were 7 (1-28). Prior to final KD diagnosis, 99 (83.2%) pts received antibiotic(s) for other diagnoses. Baseline echocardiogram was performed in 118 (99.2%) pts, of which an abnormality was documented in 46 (39.0%); coronary artery dilatations and/or aneurysms detected in 17 (14.4%) pts. No myocardial infarctions were documented. 117 (98.3%) pts received IVIG: 1 dose, 103 (88%), and 2 doses, 14 (12%), respectively. Aspirin, steroids, infliximab and cyclosporine were given in 99.2%, 46.2%, 0.8% and 0.8%, respectively. No deaths occurred.

**Conclusions:** In Mexican ch, KD is associated with a late clinical diagnosis, a significant rate of antibiotic misuse prior to diagnosis, and a considerable rate of initial cardiac abnormalities, particularly coronary artery lesions. Awareness and prompt recognition should be improved across the country.

**Keywords:** antibiotic misuse, coronary artery lesions, epidemiological study, IVIG, Kawasaki disease, Latin America, Mexico, Networks
**Infectious Diseases**

**MENINGEAL TUBERCULOSIS IN CHILDREN’S: PREDICTIONS OF LETHALITY.**
Sara Olivera¹, Manuel Cano² and Universidad Autonoma de Baja California, Mexico
¹Universidad Autónoma de Baja California, Tijuana, Baja California, ²Hospital Infantil del Estado de Sonora, Hermosillo, Sonora, Mexico

**Background and aims:** Meningeal tuberculosis is the most serious extra-pulmonary infection and is the cause of death.¹ In Mexico little is known on the associated risk factors of death, nevertheless, in other countries these have been described as. Such for the diagnosis exist criteria as: Lincoln ², Glasgow, hiperproteinorraquia.

**Methods:** Transversal, descriptive study. Variables interpreted with the NCSS 2007 program with square analysis were analyzed square test and t of student for qualitative and quantitative variables. A odss radio was also obtained.

**Results:** 56 patients group 1 deaths(10) 2 alive(46). The majority of the patients entered stage II and III mortality is at OR (0.011), IC 95% (0.00 - 0.11), p= 0.01. Proteins in cerebrospinal fluid (LCR) as a lethality factor protein value limit (202 proteins > mg/dl) OR (0.45), IC95% (0,152 - 0,747).The patients whitout steroids have 11,3 times a greater risk of passing away with a P= 0.34, OR11,3 with 6 IC95% (2.10-61.3). Motor sequels found in 86% of patients.

**Conclusions:** The clinical characteristics were associated to lethality in stages II and III of Lincoln are directly associate with lethality. Hiperproteinorraquia is the only reasonable biological factor that relates to a direct risk to lethality. A per-clinic diagnosis was established, treatment with steroids has been associated as a protective factor.

**Keywords:** extra-pulmonary tuberculosis, Lincoln criteria, meningeal tuberculosis
Infectious Diseases

MESENCHYMAL STEM CELLS DECREASE CD14++CD16+ MONOCYTES OF SEPSIS patients VIA PROSTAGLANDIN E2

Guanguan Qiu¹, Dengming Lai², Guoping Zheng³, Menghua Ge³, Lanfang Huang³, Jianguo Xu³, Qiang Shu²
¹Zhejiang University School of Medicine, ²Zhejiang University Children’s Hospital, Hangzhou, ³Shaoxing Second Hospital, shaoxing, China

Background and aims: Mesenchymal stem cells (MSC), due to their immunomodulatory properties, have been shown to reduce sepsis-induced inflammation and improve survival in mouse models of sepsis.

Methods: The levels of CD14++CD16+ and CD14+CD16++ monocytes from 12 patients in early phase of severe sepsis/septic shock as well as 12 healthy controls were determined via flow cytometry after coculture with or without MSC. To examine the role of PGE2 on phenotype modulation, monocytes from septic patients were cocultured in the presence or absence of COX-2 specific inhibitor NS-398 or exogenous PGE2.

Results: Coculture with MSC for 24 h significantly reduced the expression of CD14++CD16+ cells in sepsis patients (P<0.01), but not in control subjects (P>0.05). However, the percentage of CD14+CD16++ cells were unaffected by coculture with MSC in both population (P>0.05). Coculture of monocytes with MSC significantly reduced TNF-α and IL-8 levels induced by LPS (P<0.05). In contrast, MSC significantly elevated the antiinflammatory IL-10 level (P<0.05).

Conclusions: We demonstrated that MSC rapidly reduced CD14++CD16+ monocytes of sepsis patients and suppressed the endotoxin-induced proinflammatory cytokines from monocytes in vitro. The regulatory effect of MSC on monocytes is PGE2 dependent.

Keywords: Mesenchymal stem cells, prostaglandin E2, sepsis
OPTIMIZING MANAGEMENT OF DIARRHOEAL DISEASE IN BOTSWANA

Jeffrey Pernica¹, Andrew Steenhoff², Margaret Mokomane³, Kwana Lechiile⁴, Loeto Mazhani⁵, Ketil Stordal⁶, Marek Smieja⁷, David Goldfarb⁸

¹Pediatrics, McMaster University, Hamilton, Canada, ²Pediatrics, CHOP, Philadelphia, United States, ³National Health Laboratory, Ministry of Health, ⁴Botswana-UPenn Partnership, Gaborone, Botswana, ⁵Paediatrics, University of Botswana, Gaborone, Canada, ⁶Norwegian Institute of Public Health, Oslo, Norway, ⁷Pathology and Molecular Medicine, McMaster University, Hamilton, ⁸Lab Medicine, UBC, Vancouver, Canada

Background and aims: We sought to determine the feasibility of a randomized, factorial, clinical trial evaluating both rapid enteric diagnostic testing and the use of Lactobacillus reuteri DSM 17938 in the management of children with severe gastroenteritis.

Methods: Children aged 2-60 months admitted to hospital in Botswana with diarrhoea were randomized to: 1) either rapid enteric diagnostic testing (followed by targeted antimicrobial therapy if indicated) or not (reference standard), PLUS 2) either L. reuteri DSM 17938 or identical placebo. Testing detected Shigella, Campylobacter, ETEC, and Cryptosporidium. Assessment of feasibility outcomes (verification of trial protocols and recruitment rates) was primary. Secondary clinical outcomes, measured at 60 days, included diarrhoea recurrence rate and standardized height (HAZ) adjusted for baseline HAZ.

Results: 76 participants were enrolled. Compared to standard care plus placebo therapy, the use of rapid diagnostics (plus placebo) led to a 0.28SD (95%CI -0.26 to 0.81) increase in HAZ and less recurrent diarrhoea in the followup period (OR 0.45, 95%CI 0.12 to 1.79). The use of rapid diagnostics plus L. reuteri therapy was associated with a 0.63SD (95%CI 0.12 to 1.79, p=0.02) increase in HAZ and a dramatic decrease in recurrent diarrhoea (OR 0.07, 95%CI 0.01 to 0.61, p=0.02).

Conclusions: Our results suggest that a multicentre study is feasible and the interventions hold promise for optimization of diarrhoea management in resource-limited settings.

Keywords: diagnostic testing, gastroenteritis, growth, probiotic
PERSISTANCE DES GÉOHELMINTHES EN MILIEU HOSPITALIER PÉDIATRIQUE DANS LA BANLIEUE DAKAROISE AU SÉNÉGAL
Jean Baptiste Niokhor Diouf ¹, Mariama Kane ²
¹Centre hospitalier Roi Baudouin de Guédiawaye, Sénégal, ²centre hospitalier roi baudouin guédiawaye sénégal, dakar, Senegal

Background and aims: Déterminer la prévalence des géohelminthiases et le profil anémique et nutritionnel des sujets parasités quelques années après l’instauration du déparasitage de masse systématique.

Methods: Une étude rétrospective descriptive allant du 1er mars au 31 décembre 2013 est réalisée au niveau du service de pédiatrie du Centre Hospitalier Roi Baudouin de Guédiawaye. Pour chaque enfant reçu, un examen direct de selles et après concentration par technique de Ritchie étaient effectués. L’état nutritionnel et les paramètres hématologiques étaient également appréciés.

Results: Sur 402 enfants ayant participé à l’étude, 183 enfants étaient porteurs de parasite soit une prévalence globale de 45,5%. Les helminthes était beaucoup plus représentatifs (77,6%) que les protozoaires (22,4%) et les espèces parasitaires les plus fréquentes étaient Ascaris lombricoïdes, Trichuris trichiura et Giardia intestinalis. Nous avons noté une association significative entre la parasitose intestinale et la malnutrition aigüe modérée (p=0,018 et OR=1,74) d’une part et entre la parasitose intestinale et la malnutrition aigüe sévère d’autre part (p=0,021 et OR=1,89). De même il existait un lien entre les parasitoses intestinales et la survenue d’une anémie modérée (p=0,006 et OR=1,69).

Conclusions: La prévalence des helminthes reste élevée en banlieue dakaroise malgré le déparasitage de masse. L’amélioration des conditions de vie et l’élargissement du déparasitage aux enfants de plus de 5 ans pourrait rendre plus efficiente cette stratégie.

Keywords: None
Infectious Diseases


Konstantinos Katsiardanis¹, Kerasia-Evaggelia Gousi¹, Konstantinos Katsiardanis², Aggeliki Gerovassili³, Ioanna Tassiou¹, Lampros Katsiardanis⁴, Eirini Kalantzi¹, Anastasia Anastassiou-Katsiardani¹
¹Pediatric Clinic, ²Pediatric and Maternal Clinic, Achillopouleio General Hospital, Volos, ³EFYKE, GENETIC IST, LARISA, ⁴Pediatric Clinic, EFYKE, Volos, Greece

**Background and aims:** Respiratory infections are the first cause of children’s admission to the hospital. **Aim:** Determining the frequency of (Pneumonia)P/(Brochopneumonia )B in hospitalized children, the years 2005 and 2013 (compared with socio-demographic and environmental factors).

**Methods:** We studied retrospectively the files of children (0-14 yo), and their registered social demographics (sex-age) and environmental characteristics.

**Results:** In 2005 and 2013, 107 and 100 cases of P/B were hospitalized respectively (6% and 6.5% of all hospitalized infections/per year). 5 and 0 cases respectively were referred to tertiary hospitals. The average age was 4 and 5.8 (yo); the average length of stay was 5.1 and 5.3 days respectively. In 2005, 59 boys (B) and 48 girls (G) were hospitalized, comparing to 39 B and 61 G in 2013, respectively. There was a predominance of hospitalization for P and B, during the winter and spring months 37% and 44% compared to 35% and 29%, in 2005 and 2013 respectively.

**Conclusions:** There are increased incidences of respiratory infections, in winter and spring, 81% versus 64%, (2005 and 2013) and a greater dispersion of morbidity in the other seasons. B were more frequently infected in 2005, and the G in 2013. Infants and toddlers were confirmed to be more susceptible in respiratory infections, in 2005, while in 2013 there is a shift in higher pre-school age, because of laxity of precautionary measures, non-compliance with immunization program, low birth rates, due to the economic crisis and everything that this entails to our country.

**Keywords:** Bronchopneumonia, Pneumonia, respiratory infections
Infectious Diseases

PREVALENCE OF ESBL-PRODUCING E. COLI AND K. PNEUMONIAE ISOLATED IN BLOOD AND URINE CULTURES FROM HOSPITALIZED PEDIATRIC SUBJECTS IN NORTHEAST MEXICO: TRENDS FROM 2010 TO 2014

Oscar Tamez-Rivera¹, Jose Luis Copado-Gutierrez*¹
¹Pediatrics, Escuela de Medicina del Tecnológico de Monterrey, Monterrey, Mexico

Background and aims: Infections due to extended spectrum beta-lactamase-producing E. coli (ESBL-EC) and K. pneumoniae (ESBL-KPN) have dramatically increased worldwide. Information on their prevalence in Mexico is limited and mostly focused on adults. The objective of this study was to assess the prevalence of ESBL-EC and ESBL-KPN isolated in blood and urine cultures from hospitalized subjects ≤ 18 years.

Methods: This was a retrospective analysis of prevalence of ESBL-EC and ESBL-KPN in blood and urine cultures from subjects ≤ 18 years admitted in a tertiary-care facility in northeast Mexico. A total of 1,059 positive cultures were collected from January 2010 to December 2014. Production of ESBL was confirmed by disc diffusion testing.

Results: Prevalence of ESBL-EC from 2010 to 2014 behaved as follows: 11%, 13%, 12%, 19%, 17% respectively; and ESBL-KPN 38%, 50%, 42%, 40%, 40% during said years. Only 18% of urine cultures isolated ESBL-positive bacilli, while 52% blood cultures showed ESBL activity. Mean age was 1.9 years and 60.6% were female. Only 8.1% were neonates and mean age was 11 days.

Conclusions: Even though an obvious rise of ESBL-Enterobacteriaceae was not observed, it is noteworthy that the prevalence of ESBL-EC and KPN in our study was higher than that reported in other countries. ESBL-KPN prevalence was almost thrice than ESBL-EC. These results highlight the importance of antimicrobial surveillance and the relevance of antibiotic stewardship.

Keywords: antibiotic resistance, ESBL, ESBL-producing E. coli, Infectious Diseases
Infectious Diseases

PREVENTIVE PRACTICE OF CAREGIVERS AND ITS IMPACT ON MALARIA OUTCOME IN UNDER-FIVES PRESENTING IN A TERTIARY HEALTH INSTITUTION IN NIGERIA

Damian Nwaneri¹, Ayebo Sadoh¹, Michael Ibadin¹
¹Child Health, University of Benin Teaching Hospital, Benin, Nigeria

Background and aims: Use of insecticide treated bed nets has been observed as effective malaria preventive strategy. This study aimed at documenting factors that may influence use of insecticide treated nets, and the impact of malaria preventive practices on outcome (severe malaria prevalence and mortality) in under-5s.

Methods: Cross-sectional study carried out from July 2012–June 2013. Data was obtained by researcher-administered questionnaire and malaria was confirmed in each child by microscopy.

Results: 329 caregiver (31.2 ± 6.0 years) /child (20.7 ± 14.0 months) pair were recruited. Netting of doors/windows (80.0%) was the most practiced preventive methods. 177 (53.8%) caregivers possessed insecticide-treated bed nets, only a quarter of under-5s regularly sleep in these nets. Children from lower social class statistically significantly sleep in the nets (p = 0.03), however, presence of 3 or more nets in a household independently predicted its regular use for under-5s (β = 1.09, OR = 3, p = 0.02). Prevalence of severe malaria was 36.2% and mortality was 52 per 1000. Regular use of insecticide treated nets, environmental sanitation, indoor insecticide spray and netting of household doors/windows combined significantly predicted low prevalence of severe malaria than each of the preventive methods alone (β = 1.66, OR =5.0, p = 0.04).

Conclusions: Integrated malaria vector control strategy should be intensified.

Keywords: bed-nets, insecticide-treated, malaria, mortality, strategy, vector
**PROBIOTICS FOR THE PREVENTION OF PEDIATRIC UPPER RESPIRATORY TRACT INFECTIONS: A SYSTEMATIC REVIEW**

Metehan Ozen¹, Gonca Sandal², Ener Cagri Dinleyici³

¹Pediatrics, Acibadem University, Istanbul, ²Pediatrics, SDU, Isparta, ³Pediatrics, Osman Gazi University, Eskisehir, Turkey

**Background and aims:** Acute upper respiratory infections (URTI) contribute substantially to pediatric morbidity and mortality worldwide. Prevention of these infections in childhood is a very important public health challenge. This study aimed to focus on prophylactic probiotic use in the prevention of URTIs in childhood.

**Methods:** Relevant trials on two databases were identified in a systematic review from inception to June 2014. Study selection, data extraction and quality assessment were carried out by two reviewers. The Jadad score was used to assess the methodological quality of studies. In this review, the effects of probiotics, particularly *Lactobacillus* and *Bifidobacterium* strains, on the incidence and symptom scores of URTIs in otherwise healthy children were evaluated for the first time.

**Results:** A significant decrease in the incidence of URTIs was reported in 7 of the 12 RCTs. A significant reduction regarding the severity of symptoms of RTIs was found in 7 of 11 RCTs. At least one beneficial effect of prophylactic probiotic use was observed in the majority (10/14 RCTs) of these high-quality studies.

**Conclusions:** This systematic review suggests that probiotics in immunocompetent children have a modest effect both in diminishing the incidence of URTIs and the severity of the infection symptoms. Even a minimal reduction of 5-10% in the incidence of URTIs would have an important clinical and economic impact on societies.

**Keywords:** Probiotics
Infectious Diseases

PROSPECTIVE STUDY ABOUT THE EPIDEMIOLOGY, CLINICAL PRESENTATION AND TREATMENT OF KAWASAKI DISEASE IN COSTA RICAN CHILDREN

Rolando Ulloa-Gutierrez1, Kattia Camacho-Badilla1, Alejandra Soriano-Fallas1, Kathia Valverde-Muñoz1, Andrea P Salgado2, Adriana H Tremoulet3, María L Avila-Aguero1 and The REKAMLATINA Costa Rican Study Group Members

1Servicio de Infectología Pediátrica, Hospital Nacional de Niños "Dr. Carlos Sáenz Herrera", Centro de Ciencias Médicas, Caja Costarricense del Seguro Social (CCSS), San José, Costa Rica, 2Servicio de Infectología Pediátrica, Universidad Pontificia de Chile, Santiago, Chile, 3Department of Pediatrics, University of California San Diego (UCSD), Kawasaki Disease Research Center, San Diego, CA, United States

Background and aims: During the last two decades, Costa Rica (CR) has kept one of the top surveillance systems of Kawasaki disease (KD) in children (ch) from Central America and the Caribbean. However, diagnostic errors and unawareness mainly by general practitioners are still a problem. We describe the epidemiology, clinical manifestations, and treatment of KD in ch admitted to our only national pediatric tertiary referral academic hospital, as part of the REKAMLATINA Network surveillance study of KD in Latin America.


Results: 55 patients (pts) have been enrolled so far. 28 (50.9%) pts were male; all were hospitalized. Median age at admission was 19 (2-95) months, distribution by age groups was: <6 months, 10.9% pts; <24m, 58.2% pts; <5yrs, 87.3% pts. Days of fever at admission were 6 (2-30). Prior to KD diagnosis, 47 (85.5%) pts received antibiotics for other diagnoses. Baseline echocardiogram was performed in all pts, of which coronary artery dilatations or aneurysms were detected in 8 (14.5%) pts. 54 (98.2%) pts received IVIG: 1 dose, 49 (90.7%), and 2 doses, 5 (9.3%), respectively. Aspirin and steroids were given in 100% and 1.8%, respectively. No deaths occurred.

Conclusions: Despite being a developing country, the proportion of coronary artery lesions in CR ch with KD is similar to that from many developed nations. The high rate of antibiotic misuse prior to diagnosis suggests that KD unawareness is still a problem in CR.

Keywords: antibiotic misuse, coronary artery lesions, developing countries, epidemiological study, Kawasaki disease, Surveillance
PTME DU VIH : DEVENIR SÉROLOGIQUE ET NUTRITIONNEL DES NOURRISSONS NÉS DE MÈRES SÉROPOSITIVES SUIVIS DANS L’OPTION B+ À GUÉDIAWAYE

Jean Baptiste Niokhor Diouf 1, Mariama Kane1

1Centre hospitalier Roi Baudouin de Guédiawaye, Sénégal, dakar, Senegal

**Background and aims:** L’Objectif Est d’Étudier les Risques de la transmission mère - enfant du VIH et le Devenir nutritionnel des Nourrissons Suivis Dans l’Option de B + à Guédiawaye.

**Methods:** Il s’agit d’Une Étude rétrospective descriptive Allant du 1er septembre 2012 au 30 avril 2015. Ont Été inclus les Nourrissons Dont les mères ÉTAIENT sous trithérapie, Ayant bénéficié d’allaitement maternel non protégé et D’une prophylaxie ARV et chez qui La sérologie du 14ème mois Était réalisée.

**Results:** Sur 126 nourrissons suivis dans le cadre de la PTME, 42 soit 33,33% respectaient les directives de l’option B+. La majorité des nourrissons (88,1 à %)était née par voie basse à terme (95,2%). Le poids de naissance moyen était de 2880 grammes. Concernant la prophylaxie reçue, la majorité était sous monothérapie prophylactique prophylactique, 27(64,28%) sous NVP, et 4 (9,52%) sous AZT, alors que 11 (26,19%) étaient sous trithérapie à base de AZT+3TC+NVP. L’allaitement maternel exclusif était effectif chez 80,9% des nourrissons et le sevrage à 12 mois chez 80,9% des nourrissons. Sur le plan nutritionnel, à 6 mois 12% et 7,1% avaient respectivement une malnutrition aiguë modérée et une malnutrition aiguë sévère. A 12 mois 19,1% avaient une malnutrition aiguë modérée. La sérologie rétrovirale était négative chez l’ensemble des 42 nourrissons à 14 mois.

**Conclusions:** L’option B + Reste Une Stratégie de lutte Efficace versez Réduire le Taux de la transmission mère enfant du VIH. Cependant la malnutrition précoce des Nourrissons Exige des Nations Unies Soutien nutritionnel des mères allaitantes de même Qu’un accompagnement psychosocial de qualité.

**Keywords:** nutrition, option B+, PTME, VIH
Infectious Diseases

RASH CUTANEOUS AFTER AMOXICILLIN TREATMENT IN ADOLESCENT MALE WITH INFECTIOUS MONONUCLEOSIS
Laura Elena Alvaré Alvaré, María Dolores Lobato, Marta Melo, Niurka Verdecia Gorrita, Ivette González

1Pediatria, 2Microbiologia, CIMEQ, Habana, Cuba

Background and aims: One patient without atopic or allergic history, who received amoxicillin treatment came to our Medical Consultation and we did the Clinical examination and suspected he had an infectious mononucleosis. We made the Epstein Baar test with IgM positive results and IgG negative. According to that we suspended the amoxicillin treatment but before twenty hours after we had suspended the amoxicillin treatment the patient debuted with a several maculopapular skin rash.

It hasn't been clearly understood yet whether sensitization to antibiotics, the virus itself or transient loss of drug tolerance due to the virus, is responsible for the development of maculopapular exanthems following amoxicillin intake in patients with infectious mononucleosis.

We aimed to examine whether sensitization to penicillin develop in one patient with skin rash following amoxicillin treatment within infectious mononucleosis.

Methods: Our patient was investigated for drug sensitization by prick, intradermal and patch test employing the amoxicillin's main antigens.

Results: Prick test was extremely positive and the intradermal test too.

Conclusions: Our Results confirm that sensitization to amoxicillin may develop within an infectious mononucleosis.

Image:
Keywords: Amoxicillin, sensitization, to antibiotics, infectious mononucleosis, Drug test
REALIZING YOUTH POTENTIAL: A NEW GROUP CLINIC MODEL TO FACILITATE IMPROVED ADHERENCE AND OUTCOMES AMONG YOUTH WITH HIV

Jennifer Smitten¹,², Laura J. Sauve¹,², Shannon Krell¹, Karen Friesen¹, Sarah Chown³, Neora Pick¹,⁴, Melanie C. Murray¹,⁴, Mary Kestler¹,⁴, Alicia Hornsberger¹, Ariane Alimenti¹,²
¹Oak Tree Clinic, BC Women’s Hospital, ²Pediatrics, University of British Columbia, ³YouthCO HIV & HepC Society, ⁴Medicine, University of British Columbia, Vancouver, BC, Canada

Background and aims: Youth with HIV have lower rates of engagement in care, medication adherence, and virologic suppression than other age cohorts. Youth are especially vulnerable to stigma and isolation, further impacting their engagement in care and health outcomes. A women and family HIV clinic was the setting for an innovative pilot project to enhance engagement in care.

Methods: The pilot began in July 2015. Each of two cohorts (14-19 years and 20-29 years) meets quarterly. Clinics consist of a medical visit followed by a youth-led gathering facilitated by our partner organization with an education session, meal, and social activity. Outreach workers offer transportation. Quantitative (number of youth engaged, virologic suppression) and qualitative (quarterly session-specific feedback, and end of pilot project interviews and focus groups) evaluation methods are being used.

Results: The two cohorts have each met twice to date. Attendance has been 2 to 8 participants at each clinic, with an increasing trend in both groups. Initial qualitative feedback from youth has been consistently positive. Themes arising from feedback to date include feeling safe, welcome, and belonging to a group.

Conclusions: This model of youth group clinics demonstrates potential to connect, engage, and support youth which may help reduce stigma and isolation and contribute to improved health outcomes. Longer follow up and data analysis at pilot project end is needed to determine the impact on emotional & mental health, quality of life, and virologic suppression rates.

Keywords: None
**Infectious Diseases**

**SEVERE PNEUMONIA IN CHILDREN IN BANGLADESH: INTERACTION BETWEEN DIARRHEA AND PNEUMONIA**

Haimanti Saha¹, Tahmeed Ahmed¹, Lubaba Shahrin¹, Mohammad Jobayer Chisti¹

¹Nutrition and Clinical Services Division (NCSD), International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh

**Background and aims:** Diarrhea and pneumonia are the leading causes of under-five childhood mortality. However, there is limited published information on interaction between diarrhea and pneumonia. We evaluated the interaction in under-five children who were hospitalized with pneumonia and/or diarrhea.

**Methods:** In this retrospective chart analysis we studied all under-five children with severe pneumonia and/or diarrhea admitted to the Dhaka Hospital of International Centre for Diarrhoeal Disease Research, Bangladesh in 2014. Severe pneumonia was defined following WHO classification of pneumonia with radiological confirmation and all the study children at least had hypoxemia. Study children with and without diarrhea were compared.

**Results:** Diarrheal groups were more often presented with severe acute malnutrition (SAM), severe sepsis, reluctant to feed, congenital heart disease (CHD) and hypocalcaemia than non diarrheal groups. In logistic regression analysis, after controlling the potential confounders, such as severe sepsis, CHD, duration of cough, hypokalemia, hyperkalemia, admission WBC; SAM (p <0.025) and raised creatinine (p <0.002) were found to have independent association with severe pneumonia in under-five diarrheal children.

**Conclusions:** Severe acute malnutrition and raised creatinine were identified as the independent predictors of severe pneumonia with diarrhea compared to those without diarrhea. Thus, early identification of these simple features may help in efficient management and minimize severe pneumonia related ramifications.

**Keywords:** None
Infectious Diseases

SOCIO-DEMOGRAPHIC DETERMINANTS OF TB/HIV CO-INFECTION AMONG CHILDREN IN A NIGERIAN TERTIARY HEALTH FACILITY

Agozie Ubesie1, 2, Kenechukwu Iloh1, 2, Adaeze Ayuk1, 2, Ifeoma Emodi1, 2, Ngozi Ibeziako1, 2, Ijeoma Obumneme-Anyim2

1Paediatrics, University of Nigeria, 2Paediatrics, University of Nigeria Teaching Hospital, Enugu, Nigeria

Background and aims: Tuberculosis remains a public health challenge especially in resource poor countries. Co-infection with HIV is a significant cause of morbidity and mortality among children. The aim of the study was to determine the socio-demographic determinants of TB/HIV co-infections among children in Enugu, Nigeria.

Methods: A retrospective study of HIV-infected children seen over an 11 year period at the Paediatric HIV clinic of the University of Nigeria Teaching Hospital. Tuberculosis was defined using clinical algorithm, purified protein derivative, chest x-ray findings and Genexpert. Data analysis was done with Statistical Package for Social Sciences (SPSS) version 19 (Chicago, IL).

Results: Five hundred and nineteen children with complete data were included in the data analysis. Mean age was 9.9 ± 4.6 years and 51.4% were females. The rate of co-infections among males was 26.2% compared to 17.2% among females (p=0.014). Co-infection rate among upper, middle and lower socio-economic classes were 4.2%, 16.8% and 24.5% respectively (p=0.019). HIV status was disclosed to 7 of 64 children (10.9%) with co-infections, compared to 67 of 297 (22.6%) without co-infections (p=0.04). Fifty-nine of 230 (25.7%) orphans compared to 53 of 289 non-orphans (18.3%) had co-infections (p=0.053). Fifty-one of 108 TB/HIV co-infected children (47.2%) compared to 94 of 376 (25%) without co-infections were dead or lost to follow up.

Conclusions: Male gender and lower socio-economic class were associated with TB/HIV co-infections. HIV status disclosure was less likely among children with TB/HIV co-infections.

Keywords: Children, Nigeria, Socio-demographic, TB/HIV co-infection
THE NEED FOR EMPIRIC MRSA COVERAGE FOR COMMUNITY ACQUIRED SOFT TISSUE AND OSTEOARTICULAR INFECTION

Eri Murakami¹, Takanori Funaki², Akira Ishiguro¹, Isao Miyairi² and National Center For Child Health and Development, Tokyo
¹General Pediatrics and Interdisciplinary Medicine, ²Infectious disease, National Center For Child Health and Development, Tokyo, Japan

Background and aims: The need for empiric coverage against community-acquired methicillin-resistant Staphylococcus aureus (CA-MRSA) in children presenting with soft tissue and osteoarticular infection in Japan is unknown. The objective of this study is to evaluate the need for empiric coverage against CA-MRSA for soft tissue and osteoarticular infection among children at our institution.

Methods: We conducted a retrospective study for patients who were treated with parenteral therapy for soft tissue and osteoarticular infection due to S. aureus at our institution. Inclusion criteria consisted of isolation of S. aureus from blood or pus culture and diagnosis of cellulitis, arthritis or osteomyelitis. Patients with underlying disease were excluded. Patients' data was extracted from medical records.

Results: There were 27 patients (median age 84 months, male 16) who fulfilled the inclusion criteria. There were 7 patients with cellulitis, 11 with arthritis, and 9 with osteomyelitis. MSSA was isolated from 20 patients, all whom received antibiotics with anti-staphylococcal activity. MRSA was isolated from 7 (23%) patients, none whom received empiric anti-MRSA agents. In the 6 cases with MRSA infection that received vancomycin within 72 hours, prognosis was good without any sequelae. On the other hand, one case that received suboptimal antibiotics beyond 72 hours of hospitalization developed sequestration.

Conclusions: The prognosis of CA-MRSA soft tissue and osteoarticular infection was fair with appropriate management guided by culture results. Empiric MRSA coverage may not be necessary in our setting.

Keywords: MRSA
THE PREVALENCE OF OPPORTUNISTIC INFECTIONS IN COHORT OF HIV-INFECTED CHILDREN

Fazliddin Shamsiyev, Olga Kim
1Tashkent Institute of Postgraduate Medical Education, Tashkent, Uzbekistan

Background and aims: The most common diseases, contributing to the rapid progression and the development of adverse outcomes in HIV-infected patients are opportunistic infections (OIs). Since the spectrum of OIs depends on the region, the aim of this study was to study the main OIs identified in HIV-infected children in Uzbekistan.

Methods: The study included 334 HIV-infected children.

Results: In children <12 months were not identified clinically significant forms of herpetic infections, while levels of Ig G antibodies to HSV-1 and CMV were extremely high. However, with age, the frequency of clinical manifestations of infection is increasing significantly. Infections, caused Ureaplasma urealyticum and Mycoplasma pneumonia often occurred in acute or chronic form and manifested by defeat of the respiratory system.

Particular relevance in the pediatric population acquired Mycobacterium tuberculosis. In a cohort of HIV-infected children, the incidence of tuberculosis (TB) reached 69.54% and increased with age, indicating the need to find urgent strategies for the early detection, prevention and treatment of TB in HIV-infected patients.

Conclusions: The spectrum of OI in children with HIV/AIDS characterized by the "iceberg" type of carrier and determined by the age and unfavorable epidemiological situation, proves the feasibility of developing strategies to maximize their early detection and prevention, including vaccination of immunocompromised patients.

Keywords: HIV-infection, children, opportunistic infections
Infectious Diseases

THE RESULTS OF THE PASSIVE IMMUNIZATION IN THE CHILDREN WITH A HIGH RISK OF SEVERE RESPIRATORY SYNCYTIAL VIRUS INFECTION

Irina Davydova*¹, Leyla Namazova-Baranova¹, Elena Zimina¹

¹FSBI “SCCH” of the Ministry of Health of the Russian Federation, Moscow, Russia

Background and aims: Respiratory Syncytial Virus (RSV) is the main reason of the lower respiratory tract’s infections during the epidemic season (XI-III for Russia) in children under the age of two years. The only way of RSV-prophylaxis is the passive immunization by monoclonal antibodies to RSV (Palivizumab). Our aim was to determine the effectiveness and the safety of Palivizumab in the high risk severe RSV infection cohort of children.

Methods: 265 children under the age of 2 y.o. received Palivizumab (15mg/kg) during 6 epidemic seasons (2009-2015) every month. There were preterm children with Bronchopulmonary Dysplasia (BPD) (n=201), Congenital Heart Disease (n=5), Cerebral Ishaemia (n=57), Cystic Fibrosis (n=2). RSV infection was to be confirmed within 48 hours of hospitalization using an immunochromatographic test for detection of RSV antigen (QuickStripe™ RSV, Savyon® Diagnostics Limited, Ashdod, Israel) from specimens obtained by nasopharyngeal lavage. The percentages of the exacerbations of the disease was compared with all the database in all Russia.

Results: Only 20% of our patients (39 children) with BPD had exacerbations of the disease, not identified as RSV; 12 of them were admittted to hospital without intensive treatment. There were no any adverse events after the immunization, which corresponds to the all-Russian data.

Conclusions: The passive immunization by Palivizumab during epidemic seasons led to prevention of RSV infection in children under the age of 2 y.o. with a high risk of severe RSV infection.

Keywords: Palivizumab, passive immunization, respiratory syncytial virus
THE SECOND-GENERATION OF HIV-1 VERTICALLY EXPOSED INFANTS: CHALLENGES IN THEIR MANAGEMENT AND LONG-TERM CARE

Fatima Kakkar¹, Marie Julie Trahan*², Christian Renaud³, Normand Lapointe³,⁴, Valerie Lamarre¹
¹Pediatrics, ²Medicine, ³Microbiology, ⁴Immunology, University of Montreal, CHU Sainte-Justine, Montreal, Canada

Background and aims: The first generation of HIV-infected children to have survived into adulthood have now become parents of HIV-exposed uninfected (HEU) children. The objective of this study was to document health outcomes among this the second generation of HEU infants.

Methods: Clinic records of the Centre Maternel Infantil Sur le SIDA (CMIS) mother-child cohort (Montreal, Quebec) were reviewed to identify all pregnancies among perinatally infected women previously followed as children in one of two tertiary care centers in Montreal.

Results: Out of 16 pregnancies among 12 perinatally infected women, there were 11 live births, 4 terminations, and 1 miscarriage. All of the HIV-exposed newborns received 2 or more drugs for prophylaxis. Mean gestational age was 39.1 weeks (range 35-40 weeks) and mean birthweight was 3241g±521. None of the infants are HIV-infected. Of the 7 HEU infants now over age 2, 6 have been diagnosed with significant developmental delay (expressive language delay, n=4, autism, n=2).

Conclusions: While longitudinal follow-up of their infants is underway, early results suggest high risk of developmental delay for this second generation of HEU infants.

Keywords: HIV, Adolescents, outcome, pregnancy
Infecctious Diseases

TOXOCARIASIS: LARVA VISCERAL MIGRANS, IN A PEDIATRIC PATIENT WITH CHRONIC RENAL DISEASE

Tamara Rosales¹, Alida Romero², Maria Jose Montesdeoca³, Leonor Pupo², Stefan Mandakovic⁴, Maria Elizabeth Cardenas⁵, Maria Jose Andrade⁶

¹Infectious Diseases, ²Nefrology, Hospital Pediatrico Baca Ortiz, ³Nefrology, Hospital Pediatrico Baca Ortiz, ⁴Pediatrics-Clinica de Especialidades, ⁵Resident- Clinica de Especialidades, ⁶Resident-Clinica de Especialidades, Hospital Pediatrico Baca Ortiz, Quito, Ecuador

Background and aims: Toxocariasis, a zoonotic disease, usually has a benign course and tends to be chronic, it is globally extended, specially related with domestic animals. Ecuador is an endemic region for this parasite.

Methods: Clinical case:

10 year old, malnourished girl, with previous diagnosis of chronic renal disease since august 2015. She lives in a rural area among domestic animals with poor sanitation conditions. 5 months ago she received Ivermectin for pediculosis. On January 2016, she developed a febrile syndrome lasting 48 hours, followed by cervical/axillary, soft-tender-mobile, 1cm adenopathies. No ocular symptoms or visceromegalies.

Results: The tests showed an absolute Eosinophil count of 6150/mm³ and normal liver function. Periferic blood smear: normal. IgE: border high 175Ui/mL (1.9-170); chest X ray: no anomalies or masses. Serologic tests for Epstein-Barr, Citomegalovirus and Toxoplasmosis: negative. Toxocariasis IgG: positive, IgM/IgG avidity still pending. Parasites in stool: negative. Albendazol 400mg once a day for 21 days was initiated: adenopathy resolved, and eosinophil count decreased to 1080/mm³, within 7 days.

Conclusions: Hypereosinophilic syndrome requires a multidisciplinary evaluation. Patients with chronic renal disease can develop illnesses that healthy patients do not. Toxocariasis is a zoonotic disease that is acquired after food or water ingestion, or contaminated hands from cat/dogs feces infected with the larvae of Toxocara cati or Toxocara canis, respectively. This disease tipically presents with adenopathy and eosinophilia, occasionally eye, lungs or liver involvement may appear.

Keywords: toxocariasis, larva migrans, enfermedad renal cronica
ASSESSMENT OF COGNITIVE FUNCTION AMONG PERI-NATALLY HIV-INFECTED SCHOOL AGED CHILDREN
Agozie Ubesie1,2, Kenechukwu Iloh1,2, Adaeze Ayuk2,3, Ifeoma Emodi2,3, Ngozi Ibeziako2,3, Anthony Ikefuna1,2, Ogochukwu Iloh2
1Paediatrics, College of Medicine, University of Nigeria, 2Paediatrics, University of Nigeria Teaching Hospital, 3Paediatrics, University of Nigeria, Enugu, Nigeria

Background and aims: A wide range of central nervous system (CNS) manifestations of HIV disease has been reported and include cognitive deficits. The aim of this study was to assess the cognitive functioning of school-aged HIV infected children in Enugu.

Methods: A cross sectional study of perinatally HIV-infected children recruited from Paediatric HIV clinic. Controls were children matched for age, sex and socio-economic status recruited from the Children Out-Patient Clinic. Raven’s progressive matrices Test (RPM) was used as a tool for cognitive assessment. Other data obtained were socio-economic status, baseline CD4 count, clinical and immunologic stages, and antiretroviral history. Data analysis was with Statistical Package for Social Sciences (SPSS) version 19 (Chicago IL).

Results: There were 100 HIV-infected and 100 uninfected children. The overall Raven’s progressive matrices mean score of the HIV-infected children was 22.97±11.35 compared to 32.93±15.71 among the contros (p<0.001.) Five (5%) of the HIV-positive children were intellectually superior compared to 34 (34%) of the controls. Twenty-two (22%) of the HIV-positive children were intellectually deficient compared to 6 (6%) of the controls (p<0.001). Predictors of cognitive functioning of the HIV-positive children were immunologic staging, maternal education and socio-economic status.

Conclusions: The neurocognitive functioning of clinically stable HIV-infected school-aged Nigerian children was significantly lower than those of HIV-negative controls matched for age and sex

Keywords: Cognition, HIV-infected, Peri-natal, School aged
CAREGIVERS’ REACTION TO CARE OF CHILDREN WITH SICKLE CELL ANAEMIA IN BENIN CITY, NIGERIA

Israel Odunmayowa Aina1, Alex Ndubuisi Otakpor1, Yetunde Tinuola ISRAEL-AINA2
1Mental Health Department, 2Child Health Department, University of Benin Teaching Hospital, Benin City, Edo State, Nigeria, Benin, Nigeria

Background and aims: Sickle cell anaemia (SCA) is a prevalent chronic disorder in Nigeria with varied clinical manifestations. Chronic physical illnesses are known to provoke psychosocial dysfunction in affected children and their caregivers. This study objectively assessed the reaction of caregivers to the care of their wards with SCA in this locale.

Methods: Caregiver’s Reaction Assessment tool was used to assess specific aspects of the care-giving, including negative and positive dimensions of care-giving reactions of parents/guardians of children with SCA at the Sickle Cell Center, Benin City over an 8 month period.

Results: Of the 108 respondents, 68(63%) were females and 40(37%) were males. Majority of the mothers 88 (81.5%) have at least secondary education, while 92 (85.2%) of the fathers have at least secondary education. The highest mean score (15.59 ± 1.90) was for self esteem. Similarly, high mean scores for disrupted schedule, financial and health problems suggest negative impact on caregivers.

Conclusions: The impact on self esteem in this study suggests a positive impact on caregivers’ experiences. However, most caregivers experience disrupted schedule, financial and health problems possibly because problems in SCA are acute and may require sudden hospital admission, finance with a lot of stress to caregivers.

Keywords: Caregivers', reaction, children, sickle cell anaemia, Nigeria.
EXAMINING PSYCHIATRIC SYMPTOMS IN ADOLESCENTS WITH HISTORY OF MILD TRAUMATIC BRAIN INJURY
Clare Gray¹, Brittany Bishop²
¹Psychiatry, University of Ottawa, ²Children's Hospital of Eastern Ontario, Ottawa, Canada

Background and aims: Concussion, or mild Traumatic Brain Injury (mTBI), is defined as a sudden injury from an external force that affects brain function. Studies have shown that mTBI symptoms can include mental health (MH) disorders such as depression and anxiety. This study examines which patients with mTBI are at risk of developing MH symptoms; which MH symptoms are most common and whether physicians are aware of the link between mTBI and MH symptoms.

Methods: A retrospective chart review was completed for 764 concussion patients. Information about the concussion, any ED visits for MH issues and any referrals for MH issues were recorded.

Results: There were 791 ED presentations for mTBI between April 2014-2015. Information was gathered from 764 charts (96.5%), the remaining charts being unavailable. 53.7% of the sample was male, mean age 14.4 years (SD 1.59). The most frequent cause of mTBI was sports injury (71.9%). 43 patients (5.6%) subsequently presented with MH symptoms in the ED or were referred to MH Intake. Most frequent MH symptoms were depression (83.7%) and anxiety (79.1%). 28.6% of patients with MH symptoms had their mTBI mentioned at presentation/referral and only in 21.4% of cases was the link made between the MH symptoms and prior mTBI.

Conclusions: Some patients with mTBI will present subsequently with MH symptoms. mTBI appears to be increasing among adolescents which makes it important to consider the connection between mTBI and MH symptoms. The subsequent presentation of MH symptoms may affect the recovery from the mTBI. Further research is needed in this area to make more definitive conclusions.

Keywords: adolescent, Mental health, Mild Traumatic Brain Injury
Mental Health

FORECASTING NEURO-PSYCHOLOGICAL DEVELOPMENT DISORDERS IN NEWBORNS AND INFANTS
Svetlana Lazurenko¹, Leyla Namazova-Baranova¹, Svetlana Konova¹, Galina Yatsyk¹
¹National Centre For Child Health, Russian Academy of Medical Sciences, Moscow, Russia

Background and aims: National statistics show continuing growth in the proportion of infants suffering from neuropsychological development disorders. High efficiency of early intervention calls for urgent research to establish predictive neonatal indicators to identify a need for immediate care due to risk of future disorders. Aim: establish key biological and social factors associated with disorders in neuro-psychological development.

Methods: We observed 1500 infants, yr0-1, undergoing care and and receiving prophylactic support in the National Centre for Child Health (2011 through 2013). We compiled data from clinical observations, social assessments and a complex medical-social appraisal of the children’s neuro-psychological development. We developed a scoresheet of risk factors, with each ranked 1 (not manifested) to 10 (manifested intensively and in various forms)

Results: Multivariate linear regression analysis showed neuro-psychological development problems are correlated with: the mother’s health (r=0.233), pregnancy complications (r=0.247), birth complications (r=0.488), infant's aggregate health profile (r=0.788), CNS disorders (r=0.433), neonatal neuropsychological development (r=0.362), social adaptation (r=0.797), infant's behaviour disorders (r=0.678), the family's social profile (r=0.272)

Conclusions: A serious risk of future neuro-psychological development disorders arises where a total score across risk factors exceeds 50, meaning either 5 factors manifested intensively (score 10) or 10 different factors manifested noticeably (score 5). In such case, urgent early intervention care is recommended.

Keywords: Developmental Disability, Mental health, Neurodevelopmental disorders, Psychosocial
Mental Health

LIFE COURSE FOR ABORIGINAL AND NON-ABORIGINAL CHILDREN WITH ADHD

Desiree Silva¹, Lyn Colvin¹, Carol Bower¹
¹Telethon Kids Institute, Perth, Australia

Background and aims: To investigate the early environmental risk factors, education outcomes and juvenile justice encounters associated with Aboriginal and non-Aboriginal children prescribed stimulant medication (SM) for ADHD

Methods: Population information was collected on ADHD case (12,991 non-Aboriginal and 509 Aboriginal) and non-ADHD comparison records (30,071 non-Aboriginal and 1,328 Aboriginal) which were linked to the Midwives Notification System, Hospital Morbidity Database, education results and justice encounters. De-identified linked data files were provided for analysis.

Results: This study found 2.8% of non-Aboriginal and 1.8% of Aboriginal children born between 1981-2000 in Western Australia were diagnosed with ADHD and treated with SM. Mothers of children with ADHD were significantly more likely to smoke in pregnancy have preeclampsia and threatened preterm labour irrespective of race or gender. The ADHD group irrespective of race had significantly more early hospital admissions, for infections, inflammatory conditions, injury and early anaesthetic under 4 years of age. Having ADHD increased the risk of education failure and juvenile justice encounters at an early age irrespective of race and gender. Education failure is an independent risk factor for entry into the justice system particularly for children with ADHD.

Conclusions: This is the first population study to look at the life course of Aboriginal and non-Aboriginal children with ADHD providing valuable information on determining the precursors of ADHD and their education and justice outcomes for Aboriginal and non-Aboriginal children.

Keywords: ADHD, Education, Environmental factor, juvenile justice
PARENTAL HIV/AIDS AND PSYCHOLOGICAL HEALTH OF YOUNGER CHILDREN: A NON-URBAN SAMPLE FROM SOUTH AFRICA

Comfort Asanbe*1 on behalf of 4

1Psychology, College of Staten Island/City University of New York, Staten Island, NY, United States

Background and aims: We examined several indicators of psychological health in a sample of orphans and vulnerable children (OVC) to determine if there are significant differences between those orphaned by AIDS and those orphaned by other causes; and if there are gender differences.

Methods: This is a single-size design. The sample consisted of 119 younger children (ages 6 – 10) who participated in NGO-supported social services program in a low-resource, non-urban community in South Africa (SA). We collected data on three groups: non-orphans-OVC1 (n = 45), orphans due to AIDS-OVC2 (n = 43), and other orphans-OVC3 (n = 31). Parents of non-orphans and legal guardians of orphans rated their children on 112-item, age appropriate Child Behavior Checklist (CBCL), SA version.

Results: Children in OVC2 group were significantly different from their peers on Internalizing Problems and Somatic Complaints, while OVC3 group had a higher proportion of children in the at-risk range on Social Problems compared to OVC2. Females had elevated scores on Anxious/Depressed, Internalizing Problems, Total Problems, and Sluggish Cognitive Tempo scales compared to males. There is an interaction between factors, such that boys in OVC2 had elevated mean scores on Somatic Complaints.

Conclusions: These findings suggest increased vulnerability on emotional issues for girls in the OVC sample and for boys on somatic problems, with implications on general health and wellbeing.

Keywords: non-urban, OVC, Parental HIV/AIDS, psychological health, South Africa
PREVALENCE AND PATTERN OF PSYCHOSOCIAL DISORDERS AMONG CAREGIVERS OF HIV-INFECTED CHILDREN IN ENUGU, SOUTH EASTERN NIGERIA.

Ifeoma Emodi* 1, Anthony Ikefuna1, Ikechukwu Ogbonna1, Ngozi Ojinnaka1

1Paediatrics, University of Nigeria Teaching Hospital, Enugu, Nigeria

Background and aims: Background and Aims: HIV/AIDS is a chronic disease and one of the world’s most serious health challenges with Nigeria presenting the heaviest childhood HIV burden. Evidence abound that chronic disease conditions may result in significant life stressors. This study aims to determine the prevalence and pattern of psychosocial disorders among caregivers of HIV-infected children in Enugu, Nigeria.

Methods: Methods: This was a hospital-based cross sectional comparative study. Study participants were enrolled consecutively on their respective clinic days. Their socio-demographic variables were obtained and GHQ-28 was used to assess their psychosocial status.

Results: Results: A total of 154 caregivers of HIV-infected children and 154 healthy HIV-negative children were enrolled into this study. Forty-two (27.3%) and 37 (24.0%) of the subjects and controls respectively, were males. Prevalence of psychosocial disorders among caregivers of HIV-infected children and controls was 39% and 2.6% respectively (p<0.001; OR: 23.936). The patterns of psychosocial disorders noted among the caregivers of HIV-infected children were somatic symptoms (85%), anxiety/insomnia (80%), social dysfunction (63.3%) and severe depression (48.3%).

Conclusions: Conclusions: There is a significant psychosocial disorder among caregivers of HIV-infected children in Enugu, Nigeria.

Keywords: HIV, Caregivers, Disorders, Psychosocial
PREVALENCE OF MENTAL AND EMOTIONAL PROBLEMS AMONG ADOLESCENTS IN URBAN & RURAL AREAS OF WEST JAVA PROVINCE, INDONESIA

Meita Dhamayanti*,1, 2, Kusnandi Rusmil1, 3 on behalf of Growth & Development-Social Pediatric, Rodman Tarigan1, 4 and Growth & Development-Social Pediatric

1Child Health, Hasan Sadikin General Hospital-Faculty of Medicine, Universitas Padjadjaran, Bandung, 2Chid Protection Task Force, Indonesia Pediatrics Society, Jakarta, 3Children Protection Institution, West Java, 4Adolescent Task Force, Indonesia Pediatrics Society, Jakarta, Indonesia

Background and aims: Adolescents’ mental health is a major public health issue. The environment is one of the contribution factor. This study aimed to identify mental-emotional problems among adolescents in urban & rural area

Methods: Cross-sectional study was conducted on August–October 2015 in high schools across West Java Province. A 11–17 years age students were selected through multistage random sampling. The data was obtained and scored using the Strengths and Difficulties Questionnaire (SDQ) than analyzed by descriptive and X² test

Results: A total of 736 samples were included. Abnormal score on SDQ in 29.8% of samples, predominantly on male. The significant differences in propotions of emotional, hyperactivity, and peer problems between male and female (p=0.00). High proportion of female shown emotional and conduct (37.3%; 28.5%), whereas male of peer problems (43.9%). A significant variation in distribution of problems between urban and rural area. Conduct and peer were identified in nearly half of the subjects in urban and rural area respectively (41.5%; 45.7%)

Conclusions: The mental-emotional problems are different between urban & rural areas. Higher propotions of conduct problems were found in urban, peer problems found mainly in rural area. Female adolescents shown more emotional in contrast to male shown more peer problems

Keywords: adolescent, mental and emotional, prevalence, SDQ
REDUCED FACE/VOICE PREFERENCE IN NEWBORNS: EVIDENCE FOR THE DETECTION OF MATERNAL SYMPTOMS OF ANXIETY AND DEPRESSION

Hui Li ¹, Huiping Zhang², Zeen Zhu³, Qian Su¹, Ding Ding¹, Shaokang Dang¹, Dan Yao¹, Huifang Zhang¹, Junan Zeng¹, Zhongliang Zhu⁴

¹Department of Neonatology, First Affiliated Hospital of Medical College, Xi’an Jiaotong University, Xi’an, Shaanxi, ²Department of Neonatology, First Affiliated Hospital of Medical College, Xi’an Jiaotong University, Xi’an, Shaanxi, ³Medical College of Dalian University, Medical College of Dalian University, Da’lian, Liao’ning, ⁴Shaanxi Province Biomedicine Key Laboratory, College of Life Sciences, Northwest University, Xi’an, Shaanxi, China

Background and aims: Newborns show visual preference for their mothers to strangers. To determine correlation between newborns’ visual preference and maternal anxiety and depression and to examine the change of serum cortisol in mothers – newborns pairs.

Methods: A total of 255 hospitalized pregnant women waiting for delivery have completed the 14-item Hamilton Rating Scale for Anxiety (HAMA) and the 24-item Hamilton Rating Scale for Depression (HRSD), among whom 101 met anxiety criteria (A group), 34 met depression criteria (B group) and 120 met control criteria (C group). Within the postnatal 2 weeks, Neonatal Behavioral Assessment Scale (NBAS) was administered to the newborns’ social interactive behavior. Radio immunoassay was used to detect serum cortisol.

Results: The score of social interactive behavior in A and B group were lower than that in C group ( p<0.01 ); the duration of the newborns preference the mother’s face/voice was shorter than the female stranger ( p<0.01 ) associated with higher serum cortisolin mothers – newborns pairs in A and B group ( p<0.01 ).

Conclusions: Newborns could detect maternal symptoms of anxiety and depression associated with increased serum cortisol in mothers – newborns pairs.

Keywords: anxiety, depression, maternal, Newborns, visual preference
Mental Health

THE EFFECT OF FAMILY-CENTERED PSYCHOEDUCATION ON MENTAL HEALTH AND QUALITY OF LIFE OF FAMILIES OF ADOLESCENTS WITH BIPOLAR MOOD DISORDER

Razieh Mahmoodi¹, Ali Shooshtari¹, Mehrdad Vossoughi², Farkhondeh Sharif³
¹Shiraz University of Medical Sciences, Shiraz, Iran, ²Dental public health, ³community based psychiatric care research center, Shiraz University of Medical Sciences, Shiraz, Iran

Background and aims: Bipolar Mood Disorder (BMD) is a type of mood disorder which is associated with various disabilities. In the present study, we aimed to evaluate the effect of family-centered education on mental health and QOL of families with adolescents suffering from BMD.

Methods: we enrolled 40 mothers of adolescents with BMD referred to psychiatric clinics affiliated to Shiraz University of Medical Sciences. The participants were randomly assigned into case (N=20) and control groups (N=20). All the mothers in the case group participated in a family-centered educational program consisted of six 90-minute sessions per week for 6 weeks. Data were collected using General Health Questionnaire, QOL Assessment Questionnaire and demographic questionnaire. The questionnaires were completed by all participants three times.

Results: The results showed that the interaction between the variables of group and time was significant (p<0.001). The mean of QOL and mental health scores increased in the case group but decreased in the control group at three measurement time points.

Conclusions: family-centered psychoeducation could be effective in promotion of QOL and mental health of the families with adolescents suffering from BMD.

Keywords: None
CONSERVATIVE METHODS OF TREATMENT OF FUNCTIONAL DYSPHONIA

Fazliddin Shamsiyev¹, D Shamsiyev²
¹Tashkent Institute of Postgraduate Medical Education, ²Tashkent stomatology university, Tashkent, Uzbekistan

**Background and aims:** Functional dysphonia is poor voice quality without any obvious anatomical, neurological or other organic difficulties affecting the larynx or voice box.

**Methods:** A comprehensive system of rehabilitation of patients with functional voice disorders included psychotherapeutic influence, work on physiological and phonational breathing, development of the resonator system and raise the voice hearing (phonetic, intonation and accent), the formation of a new voice stereotype, expanding the range of sound development of general and voice motility.

**Results:** Corrective pedagogical work to restore the voice in patients with functional dysphonia based on the general didactic principles and the principles of special education. A special place in the complex of rehabilitation measures took functional training aimed at eliminating pathological ties and the formation of a new voice stereotype. To increase the effectiveness of training and shorten the rehabilitation we used method of biological feedback, which in some cases we combined with vibrotherapy.

**Conclusions:** as a result we braked stereotype of pathological phonation and developed the skills of the physiological mechanism of voice, as well as restored conditioned reflex connections that existed before vocal apparatus diseases.

**Keywords:** otolaryngology
DUPLICATE PUBLICATION AND RELATED PROBLEMS IN THE PEDIATRICS LITERATURE
Rebecca Haworth¹, Katherine Anderson¹, Paul Hong²
¹Medicine, Dalhousie University, ²Pediatric Otolaryngology, IWK Health Center, Halifax, Canada

Background and aims: Duplicate or redundant publication describes a practice in which two or more articles with substantially similar information are published by the same author(s) without reference to the others. This is a widely condemned practice as it uses editors’ and reviewers’ time unnecessarily and saturates the literature with redundant results. Another controversial practice is salami-slicing which refers to dividing a single study to publish multiple articles. Both of these practices have been reported in surgical specialties but little is known about their occurrence in pediatrics literature.

Objectives. (a) Determine the rate of redundant publication in the pediatrics literature and (b) to characterize these articles.

Methods: Index articles were drawn from JAMA Pediatrics, Pediatrics, and the Journal of Pediatrics from 2010 using PubMed. Possible redundant material from 2008 to 2012 were searched using the authors’ names. Suspected duplicates were categorized into “duplicate publication” or “salami-slicing” (i.e. part of the index article repeated or continued).

Results: Redundancy was found in 39 of 1838 index articles (2.1%). Specifically, content corresponding to 39 index articles were identified as salami-sliced into 45 other articles. Fifteen of these salami-sliced articles did not reference the corresponding index article, 2 vaguely referenced the index article, and 28 had clear references to the index article.

Conclusions: Salami-slicing was a common practice. Salami-slicing may be acceptable in certain cases but authors should clearly reference the index article.

Keywords: Duplicate Publication, Pediatrics, Publication Ethics, Redundant Publication, Salami-slicing
IMPLANTING A SHAKEN BABY SYNDROME (SBS) PERINATAL PREVENTION PROGRAM

Jean-Yves Frappier\textsuperscript{1}, Sylvie Fortin\textsuperscript{2}, Line Déziel\textsuperscript{3}

\textsuperscript{1}Paediatrics, CHU Sainte-Justine, Uof M, \textsuperscript{2}Social Paediatrics/Child Abuse, \textsuperscript{3}Social Paediatrics / Child Abuse, CHU Sainte-Justine, Montreal, Canada

**Background and aims:** Prevention of child abuse is an important issue. A 3 phases project on prevention of SBS and young child maltreatment was developed. The first phase is a perinatal program and since 2009, this program was integrated in the perinatal policy of the Ministry of Health. The program is established in most of the 18 administrative districts of the Ministry of Health in the Province. We are presenting some results on the monitoring of this intervention.

**Methods:** The program is a short (10 minutes) intervention by an obstetrical ward nurse, a day after delivery, and uses 3 information cards: Baby’s cries, anger management and SBS. Train the trainers sessions were carried in all districts. Nurses in all hospitals received a 3 hrs training for the intervention. Hospitals were offered to participate in monitoring this intervention. For each nurse’s intervention an anonymous data collection grid was completed, identifying only the administrative district.

**Results:** A total of 61% of the districts were involved in monitoring. Between 2010-15, more than 68,696 interventions were carried. Preliminary results shows a total of 92% of the families had benefited from the preventive intervention and in 87%, the two parents were present, but In Neonatology, it is 75%.

**Conclusions:** The SBS prevention intervention was well received, either by the hospital staff or by parents. Implantation and monitoring are successful but have limitations.

**Keywords:** child abuse, Non Accidental Head Trauma, Prevention
INFANTILE ONSET POMPES DISEASE IN A NIGERIAN CHILD. CASE REPORT AND LITERATURE REVIEW.
Usman Abubakar¹, Edith Eze², Grace Ahmed¹, Oladele OLAGBEGI¹, Umar Mamudu², Adebiyi O Olowu³, Mohammed Adeboye⁴
¹Paediatrics, Federal Medical Centre BIDA, ²Paediatrics, Federal Medical Centre, Bida, Bida, ³Paediatrics, OOUTH, Sagamu, ⁴Paediatrics, University of Ilorin Teaching Hospital, Ilorin, Nigeria

Background and aims: Pompe disease also known as glycogen storage disease (GSD) type II is a rare autosomal recessive genetic disorder of muscle glycogenoses. It is the only GSD with a defect in lysosomal metabolism and the first GSD to be identified in 1932 by the Dutch pathologist J.C Pompe.

Methods: The case record of a Nigerian child with floppiness from birth, recurrent respiratory tract infection and failure to thrive was reviewed. Relevant literatures on Pompe disease were also reviewed.

Results: The index case is a 7 months old Nigerian child with floppiness from birth, recurrent Respiratory Tract Infection and failure to thrive with generalised hypotonia, macroglossia and features of heart failure. Chest X-ray revealed cardiomegaly (C:T ratio 65.5%) with a globular configuration. ECG revealed biatrial and biventricular enlargement with left axis deviation. Echocardiography showed hypertrophic cardiomyopathy with shiny interventricular septum. Biochemistry revealed markedly elevated liver enzymes, creatine kinase and reduced lysosomal acid maltase enzyme activity. Child was placed on bed rest, oxygen therapy, nutritional rehabilitation and antibiotics. She was discharge but readmitted on account of features of Acute Respiratory Tract Infection and subsequently died of respiratory failure 8 days after.

Conclusions: The features of this child are in keeping with infantile-onset Pompe disease and this to our knowledge is the first case reported in Nigeria. Early diagnosis and treatment would have altered the course of the disease in this child.

Keywords: Infantile onset POMPES disease, child, Nigeria
INTRODUCTION OF ADVANCED CARE PLANNING IN A CHILDREN'S HOSPITAL
Mei Yoke Chan¹, Komal Tewani¹, Yi Yi Wynn¹, Noor Aisah Abdul Rashid¹, Lilis Irwani Mohd Yusri¹, Gina Boon-Khing Tan¹, Mavis Poh-Wah Teo¹
¹KK Women’s and Children’s Hospital, Singapore, Singapore

Background and aims: Families with children with life-limiting illnesses often have to make difficult decisions during crises. An advance care plan (ACP) would help them understand options available and balance life-prolonging treatments with best supportive care. Adult ACP was introduced in 2009 in Singapore. Children ACP was launched in 2015. We describe our experience with introducing ACP in the only comprehensive children’s hospital in Singapore.

Methods: From July to December 2015, children were identified or referred for ACP. ACP was conducted by trained facilitators who are MSWs, paediatric palliative nurses and doctors.

Results: Out of 22 patients identified or referred, 11 were completed, 6 are ongoing and 5 rejected or discontinued discussion. Only 5/22 children have terminal cancer, others have progressive neurological, lung or genetic/metabolic disorders. It took an average of 15 hours contact time over 3-4 sessions to complete an ACP. ACP was done with parents mainly. Only 1 child was involved in ACP discussion; majority were not competent. Of the 5 rejected/discontinued ACP, reasons include prognostic paralysis and misunderstanding of ACP aims. 5/11 children with ACP have died, all had their ACP honoured. Challenges faced by ACP facilitators include late referral and difficulty in involving competent children in discussion.

Conclusions: There should be more awareness of benefits of having ACP, even for children. Healthcare professionals need to be educated to identify and refer their patients early. Since ACP is for the child, every attempt should be made to involve them in discussion.

Keywords: Advanced Care Plan, Pediatric Palliative Care
KNOWLEDGE OF PROFESSIONALS ON SBS, BABIES’ CRY AND ANGER

Jean-Yves Frappier¹, Sylvie Fortin², Line Déziel²
¹Paediatrics, CHU Sainte-Justine, Uof Montreal, ²Social Paediatrics / Child Abuse, CHU Sainte-Justine, Montreal, Canada

Background and aims: Child abuse is a public health issue of concern and its prevention is important. Since 2009, around 2000 professionals in the Province were trained to deliver a Shaken Baby Syndrome (SBS) prevention program. The knowledge around the issues pertinent to the program were evaluated between 2013-15.

Methods: The intervention covers Babes’ cries, anger and SBS. The training for the preventive intervention took 3 hrs. At the beginning of the session, participants completed a questionnaire: sociodemographic data and multiple choices questions on SBS, cries of babies and anger.

Results: A total of 474 professionals completed the questionnaire: 61% from the health sector and 39% from psychosocial sector. 68% answered that SBS can be caused by fall from a couch or a table and alike. Regarding cries of babies, 40% mentioned gastrointestinal causes and 80% reported they would do an intervention for persistent cries: medication, changes in feeding, etc. However, 66% mentioned it is normal to feel angry facing persistent cries of a baby.

Conclusions: False beliefs are strong regarding SBS and the cries of babies and their causes. They emphasized the importance of better training of professionals to address the issue properly in order to prevent maltreatment in toddlers, often link to persistent cries.

Keywords: Child Abuse, Non Accidental Head Trauma
LIFE EXPECTATIONS AND DEPRESSION IN GREEK THALASSEMIA MAJOR CHILDREN AND ADOLESCENTS

Ioannis Koutelekos*, 1, Alexandros Makis2, Constantine Vassalos4, Helen Kyritsi4, Christina Koulouglioti5, Christina Frangodimitri6, Maria Polikandrioti4, Evdokia Vassalou3, Chyssa Tzoumaka-Bakoula7, Nikolaos Chaliasos8

1Pediatrics Clinic, Univeristy of Ioaannina/ Faculty of Nursing, Technological Educational Institute of Athens, Ioannina/ Athens, 2Pediatrics Clinic, University of Ioannina, Ioannina, 3National School of Public Health, Faculty of Nursing, Technological Educational Institute of Athens, Athens, Greece, 5West Sussex Hospital NHS Trust, West Sussex, United Kingdom, 6Thalassemia Expertise Unit, Children's Hospital HEE HAGIA SOPHIA, 7Pediatrics, Medical School, University of Athens, Athens, 8Pediatrics Clinic, Medical School of Ioannina, Ioannina, Greece

Background and aims: Thalassemia major in children/adolescents (TMCA) is now considered a chronic illness. Little information is available on their life expectations Exp. Study investigated Exp and depression Dep in Greek TMCAs.

Methods: In September 2014–January 2015, 74 TMCAs (33 boys, 41 girls; average age: 14; oral chelation: 62/74, 83.78%), recruited from thalassemia units at pediatric hospitals/clinics, completed the Multidimensional Expectation Questionnaire for Thalassemia Major Patients* TMCA version and the CDI. Mean scores and squared semi-partial correlation (sr²) were calculated. SPSS.21 was used for analyses. Ethical issues were addressed.

*Koutelekos et al. GJHS 2015; http://dx.doi.org/10.5539/gjhs.v8n2p77

Results: TMCAs had high overall expectations [mean(Exp)=3.07±0.51]. Gaining insight knowledge on modern therapies helped them having expectations [sr²(Exp)=0.124] and projecting their own family and daily life into the future [sr²(Exp)=0.146]. Good relation with nursing staff helped them to define their career path [sr²(Exp)=0.103]. Most TMCAs (66/74; 89.2%) had minimal depression levels. Schooling absenteeism was related to depression [sr²(Dep)=0.123]. Risk of depression was reduced when TMCAs had close relationship with treating physician [sr²(Dep)=0.072] and when working mothers brought workload down to size [sr²(Dep)=0.071]. TMCA pursuing friendship [mean(Exp)=3.22±0.58] was related to low depression [sr²(Exp)=0.095] and oral chelation [sr²(Exp)=0.065] (Graph 1).

Conclusions: Knowledge on modern therapies enhanced TMCA expectations. Friendship networking, depression and oral chelation were interrelated.
Graph 1. Summary of the interactive relationships between invasive chelation procedure, depression, and lower friendship networking expectations in Greek thalassemia major children and adolescents. Golden disc is added for visualization purposes.

Keywords: children and adolescents, depression, expectation, thalassemia major
PREVENTION OF CHILD MALTREATMENT AND SBS : THE ANGER THERMOMETER

Jean-Yves Frappier*, Sylvie Fortin2, Line Déziel2
1Social Paediatrics / Child Abuse, CHU Sainte-Justine, UofMontreal, 2Social Paediatrics / Child Abuse, CHU Sainte-Justine, Montreal, Canada

Background and aims: Child abuse is a public health issue and its prevention is important. A University Hospital has developed a tool, the Anger Thermometer®, that allows parents to understand the progression of emotions and physical signs when faced with constant cries of a baby or any annoying situation with a young child; the tool offers guidance on management during difficult times. We present the results of its implantation.

Methods: The anger thermometer is introduced to families at an early age or at any other time with high risk families. Professionals in community clinics received a 3hrs training. Some centres participate in monitoring the intervention, completing an anonymous grid: age of the child, pertinence of the intervention, parent’s participation du parent, etc.

Results: 70% of the regions in the Province have received the training and implanted the intervention. We have results for 360 interventions: on a scale of 1 to 4, professionals report the tool to be pertinent and useful (3.3) and parents' participation was good (3.1 for mothers, 2.66 for fathers). The majority of the interventions were carried at 30 days and took an average of 24 minutes. Written comments are interesting: “the father acknowledge that he once reached the highest point on the thermometer”; “it was reassuring for her to understand that anger is a normal emotion”.

Conclusions: The Anger thermometer is the second phase of a prevention project of SBS and young child maltreatment. Reaching fathers is a concern. However, training, follow-up and support of professionals are essentials for its efficacy.

Keywords: Child Abuse, Non accidental Head Trauma, Prevention
SELF-BLAME AND AVOIDANCE COPING AS PREDICTORS OF POSTTRAUMATIC STRESS SYMPTOMS AMONG SEXUALLY ABUSED CHILDREN
Anne-Claude Bernard-Bonnin, Amélie Gauthier-Duchesne, Claire Allard-Dansereau, Martine Hébert
1paediatrics, CHU Ste-Justine, 2sexology, UQAM, 3paediatrics, CHU Ste-Justine Université de Montréal, Montreal, Canada

Background and aims: The aim of the study was to test the contribution of self-blame and avoidance coping to the prediction of PTSS in sexually abused children.

Methods: Questionnaires were administered to 447 sexually abused children, aged 6 to 12. Self-blame and PTSS were evaluated by the Children’s Impact of Traumatic Events Scale II and avoidance coping by the Self-Report Coping Scale. Abuse was categorized as less severe (physical contact over clothing), severe (physical contact under clothing without penetration or force) or more severe (physical contact with attempted penetration). The contribution of self-blame and avoidance coping to the prediction of PTSS was tested with linear regression.

Results: The model including child’s gender and severity explains 3.8% of the variance \( (p<0.001) \) in PTSS. Adding self-blame and avoidance coping explains 35.1% of the variance \( (p<0.001) \). Being a girl \( (p<0.001) \), reporting high levels of self-blame \( (p<0.001) \) and using avoidance coping \( (p<0.001) \) are predictors of PTSS. Severity of the abuse was significant in the first model \( (p=0.004) \) but not in the final one \( (p=0.057) \).

Conclusions: Sense of self-blame and using avoidance coping seem to contribute to the prediction of PTSS among sexually abused children and are important targets for clinical intervention.

Keywords: avoidance coping, child sexual abuse, posttraumatic stress, self blame
THALASSEMA MAJOR CHILDREN AND ADOLESCENTS: VALIDATION OF THE MULTIDIMENSIONAL EXPECTATION QUESTIONNAIRE FOR THALASSEMA MAJOR PATIENTS

Ioannis Koutelekos1, Constantine Vassalos2, Alexandros Makis3, Helen Kyritsi4, Christina Koulougioti5, Christina Frangodimitri6, Maria Polikandrioti4, Evdokia Vassalou2, Chyssa Tzoumaka-Bakoula7, Nikolaos Chaliasoss8

1Pediatrics Clinic, University of Ioannina/ Faculty of Nursing, Technological Educational Institute of Athens, Ioannina/ Athens, 2National School of Public Health, Athens, 3Pediatrics Clinic, University of Ioannina, Ioannina, 4Faculty of Nursing, Technological Educational Institute of Athens, Athens, Greece, 5West Sussex Hospital NHS Trust, West Sussex, United Kingdom, 6Thalassemia Expertise Unit, Children's Hospital HEE HAGIA SOPHIA, 7Pediatrics, Medical School, University of Athens, Athens, 8Pediatrics Clinic, Medical School of Ioannina, Ioannina, Greece

Background and aims: Thalassemia major in children/adolescents (TMCAs) is now considered a chronic illness. Having future life expectations is related to patient quality of life. Study seeks to validate the Multidimensional Expectation Questionnaire for Thalassemia Major Patients (MEQ-TMP) [Koutelekos et al. GJHS 2015; http://dx.doi.org/10.5539/gjhs.v8n2p77] in TMCAs to better monitor their coping strategies.

Methods: 74 TMCAs (33 boys, 41 girls; average age: 14) from Children's hospital thalassemia expertise units completed the 4-point Likert scale questionnaire (Figure 1). Psychometric properties were analysed. Exploratory factor analysis was performed. SPSS.21 was used for all analyses.

Results: The optimal three-factor solution explained 63.3% of variance. The original factors ‘supportive social network’ and ‘career advancement’ were replicated and re-named ‘friendship networking’ and ‘vocational aspirations’, respectively. The ‘family and daily life aspirations’ included the former categories ‘raising one’s family’ and ‘ability of daily activities’. Item loadings were between 0.65-0.97. No factor had fewer than three items. Reliability (Cronbach alpha) for the whole scale was 0.81 and for the subscales ranged from 0.78-0.92. The intraclass correlation coefficient varied from 0.74-0.87. No ceiling/floor effect was detected.

Conclusions: The 14-item MEQ-TMP TMCA version proved to be a valid and reliable instrument. It would provide pediatric personnel and researchers information on the as-yet not readily accessible expectations of chronically ill thalassemic children and adolescents.
**Figure 1.** The Multidimensional Expectations Questionnaire for Thalassemia Major Patients – Thalassemia Major Children/Adolescents (MEQ-TMP TMCA) version.

*Note:* The English version of the questionnaire presented here is by no means linguistically validated.
Keywords: children and adolescents, expectations, multidimensional questionnaire, thalassemia major, validation
Neonatology

A CONTINUOUS QUALITY IMPROVEMENT INTERVENTION STRATEGY TO IMPROVE NEONATAL CARE AT JINJA HOSPITAL UGANDA, THROUGH ENHANCED SURVEILLANCE AND NEEDS-DIRECTED MENTORSHIP AND TRAINING

Jane Achan¹ ², Daniel Tumwine* ², Sophie Namasopo³, Harriet Nambuya³, Asadu Sserwanga⁴ ⁵, Rebecca Nantanda² ⁶, Arthur Mpimbaza⁴ ⁶

¹Makerere University College of Health Science, ²Uganda Paediatric Association, Kampala, ³Jinja Regional Referral Hospital, Jinja, ⁴Centre For Health Research And Programs, ⁵Infectious Disease Research Collaboration, ⁶Makerere University College of Health Sciences, Kampala, Uganda

Background and aims: Roughly 45,000 newborns die annually in Uganda. Though overall childhood mortality is decreasing, neonatal mortality (NM) remains unchanged contributing to 50% and 30% of infant and under-five mortality respectively. Efforts to reduce NM in Uganda are partly set back by lack of quality data on neonatal disease burden. We aimed to improve neonatal care at a Regional Referral Hospital, through enhanced neonatal data surveillance and needs-directed mentorship and training.

Methods: Between July 2014 and April 2015, a comprehensive neonatal medical record form (NMRF) was introduced for documentation of information pertaining to illness and care provided to hospitalized neonates. The data was used to identify gaps in practice, and inform training and mentorship needs and other appropriate interventions geared towards improving neonatal care.

Results: There was improved documentation of neonatal trends with NMRF completion rate as high as 80%. Septicemia, 43.6%, prematurity, 21.6% and birth asphyxia, 16.5%, accounted for nearly 82% of neonatal burden. Interventions such as strengthening infection control, timely resuscitation of newborns and streamlining of drugs and supplies were all instituted by health workers after analysis of data. Morbidity reduced from 20% just before the first intervention to under 13% at the end of the study period.

Conclusions: Accurate and consistent documentation of neonatal morbidity and mortality trends is feasible. Surveillance data guides appropriate training needs, health services planning and also provides a platform for monitoring the impact of interventions.

Keywords: Developing countries, East Africa, Hospital, Mentorship, Neonatal morbidity and mortality, Quality
Improvement, Surveillance, Training, Uganda, Uganda Paediatric Association, Uganda Pediatric Association
ACTIVE SCREENING OF ANTIBIOTIC-RESISTANT ESCHERICHIA COLI IN PREMATURE INFANTS: MATERNAL–NEONATAL TRANSMISSION

Aya Koizumi1, Kenichi Maruyama1, Yasushi Ohki2, Tohru Fujiu3, Hirokazu Arakawa3

1Neonatology, Gunma Children’s Medical Center, Shibukawa, 2Pediatrics, Kiryu Kosei General Hospital, Kiryu, 3Pediatrics, Gunma University Graduate School of Medicine, Maebashi, Japan

Background and aims: E. coli is one of the main causes of neonatal early-onset sepsis with high mortality, particularly in premature infants. Recently, the incidence of infections with ESBL-producing E. coli has been increasing in NICU. The aim of this study was to determine the prevalence and risk factors for maternal–neonatal colonization with ESBL-producing E. coli in premature infants.

Methods: We conducted a prospective surveillance in three NICUs between August 1, 2014, to December 31, 2015, involving 246 premature infants, whose birth weight was <2 kg or gestational age was <35 weeks, and their mothers. Both infants and their mothers were screened for colonization with E. coli.

Results: Seven (2.8%) infants showed E. coli colonization, with three showing ESBL-producing E. coli. Three of the seven E. coli-positive neonates (two with ESBL-producing E. coli) developed early-onset sepsis. Ninety-nine (40%) infants were born from E. coli-positive mothers; five of these mothers were colonized with ESBL-producing E. coli. Three infants (two of whom had ESBL-producing E. coli) had vertical transmission from the E. coli-positive mothers.

Conclusions: Maternal colonization with ESBL-producing E. coli was a risk factor for neonatal colonization and early-onset sepsis in premature infants. Routine antepartum screening should be considered to reduce neonatal morbidity and mortality.

Keywords: ESBL-producing E. coli, premature infant, vertical transmission
ACUTE HEPATIC INSUFFICIENCY DISCLOSING CONGENITAL SYPHILIS IN A NEONATE
Mohammed Amine Radouani¹, Amina Barkat²
¹Equipe de recherche en santé et nutrition du couple mère enfantCentre National de Néonatologie et Nutrition, 
²Centre National de Néonatologie et NutritionEquipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: Congenital syphilis is a maternal-fetal infection caused by Treponema pallidum. Early signs are characteristic skin lesions, lymphadenopathy, hepatosplenomegaly, failure to thrive, blood-stained nasal discharge, perioral fissures, meningitis, choroiditis, hydrocephalus, seizures, intellectual disability, osteochondritis, and pseudoparalysis (Parrot atrophy of newborn).

Methods: We report the case of a new born on day 1 of life hospitalized for respiratory distress.

Results: Clinical examination showed signs of respiratory retraction with hypotonia. The assessment carried out revealed: severe liver insufficiency and infected cerebrospinal fluid (CSF) with sterile culture. The diagnosis of congenital syphilis in our patient was confirmed by a positive serology in the neonate and her mother. The outcome was fatal.

Conclusions: Syphilitic infection in the newborn is not very common these days. The management remains difficult.

Keywords: congenital, hepatic, insufficiency, neonate, syphilis
AMBULATORY MANAGEMENT OF UNCOMPLICATED JAUNDICE FOR FULL-TERM NEONATES: AN EXAMPLE OF ACTION-RESEARCH IN RABAT, MOROCCO

Mohammed Amine Radouani*1, Hassan Aguenaou2, Mustapha Mrabet3, Amina Barkat4

1Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Équipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, 2Unité mixte de recherche en Nutrition et alimentation URAC 39, , université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, 3Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie , Université Mohamed V, 4Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Équipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: Jaundice is the most common condition that requires medical attention in newborns. The yellow coloration of the skin and sclera in newborns with jaundice is the result of accumulation of unconjugated bilirubin. The aim is to evaluate ambulatory management of uncomplicated neonatal icterus in its therapeutic and economic aspects.

Methods: Prospective cohort study over 3 years. Were recruited all eutrophic newborns, born in the maternity CHIS and having an uncomplicated jaundice and not extended that requires at least one session phototherapy. Anamnestic, biological and therapeutic parameters were then analyzed.

Results: total of 900 newborn jaundice received outpatient therapy during the study period. The average postnatal age was 4.7 ± 2.2. 43.3% or 391 newborns were completed. The mean birth weight was 3320.3 ± 578.8. 55.2% of patients were born at term. The mode of delivery was instrumentalized in 39.8% of cases. We noted a history of infectious positivity in 30.3% of cases. The median number of hours of phototherapy was 10 hours. The rate of indirect bilirubin admission was 177mg / l, the control rate after phototherapy was 101 mg / l.

Conclusions: Ambulatory management of neonatal uncomplicated icterus of eutrophic and fullterm neonates would seem to give encouraging therapeutic and health economical results.

Keywords: ambulatory, fullt-term, jaundice, Management, neonates, uncomplicated
ANALYSIS OF NOTCH PATHWAY COMPONENTS IN LUNG INNATE IMMUNITY CELLS IN PRETERM INFANTS
Navin Bhopal, Belinda Chan, Ashley Fischer, Deepti Mathur, Parviz Minoo

1Pediatrics, LAC+USC Medical Center & Children's Hospital Los Angeles, Los Angeles, 2Pediatrics, University of Utah, Salt Lake City, United States

Background and aims: The molecular basis of bronchopulmonary dysplasia (BPD) is poorly understood. Dysregulation of immunity genes may contribute to BPD pathogenesis. The Notch pathway functions in many processes such as lung development. It consists of Notch receptor & ligands Delta-like (Dll) & Jagged (Jag). These interactions lead to altered gene expression. The role of Notch in innate immunity of preterm infants has not been described. Here, we examined expression of Notch in innate immunity cells from lungs of intubated preemies.

Methods: Samples of tracheal aspirate fluid (TAF) were obtained per IRB protocol during routine suctioning of intubated neonates of various gestational ages (GA). Total cells in TAFs were used for RNA isolation. PCR using primers for Notch pathway components Notch1, Notch2, Notch3, Jag1, Jag2, DLL1 & DLL2 was used to analyze expression.

Results: Preliminary analysis of samples from 8 infants was completed. Nearly all samples revealed expression of Notch receptors Notch1 & Notch2. Other Notch components including Notch3, Jag1, Dll1 & Dll2 were expressed dynamically. No expression of Jag2 was found. Gene array of FACS-isolated lung macrophages revealed a 44 fold increase in Notch2 between a 24 week GA infant & a 30 week GA infant on day 3 of life.

Conclusions: Notch is important in development & disease. We show that most Notch components are expressed in cells from lungs of human preemies. Their pattern of expression suggest they may be critical in regulating the inflammatory response in lungs of preterm neonates.

Supported By: NHLBI and the Hastings Foundation

Keywords: bronchopulmonary dysplasia, Immunity, premature infant
ANALYSIS OF TRANSFUSION PRACTICES IN NEONATOLOGY: MOROCCAN EXPERIENCE

Mohammed Amine Radouani 1, Hassan Aguenoua2, Mustapha Mrabet3, Amina Barkat4

1Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’EnfantsEquipe de recherche en santé et nutrition du couple mère enfant , Faculté de médecine et de pharmacie de Rabat- Université Mohammed V , Rabat, 2Unité mixte de recherche en Nutrition et alimentation URAC 39, , université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, 3Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie , Université Mohamed V, 4Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: Blood transfusion is a common practice in neonatal but not without risk as well as immunological and infectious.

The purpose is to determine the prevalence of transfusion, the number of transfusion episodes, the age at first transfusion and the main indications for transfusion to critically evaluate our transfusion practice

Methods: It is a prospective and analytical exhaustive study conducted at the National Reference Center for Neonatology and Nutrition Children’s Hospital of Rabat between July 1, 2011 and July 31, 2014.

Results: A total number of 7000 infants were admitted to the center during this period, 300 of them were transfused one or more times a prevalence of 4.2%. The total number of transfusion episodes received by newborn, ranged between 1 and 4 transfusions with an average of 2.5 ± 1.2. It was essentially isolated from red blood cells (RBC) transfusions (66% of transfusion acts). Seventy-five percent of cases were transfused in the first week of life. The main indication was anemia associated with infectious haemolysis . The hypoproteinemia with hypoalbuminemia had indicated the contribution of fresh frozen plasma (FFC). Platelet transfusion was required in a case of thrombocytopenia 4000 / mm3 with hemorrhagic syndrome. No newborn had submitted post-transfusion complications.

Conclusions: In our context, the use of erythrocyte transfusions especially is still very common in the population of preterm infants which prompts us to adopt certain strategies to prevent anemia of prematurity including streamlining of blood samples, the use of micro-methods and optimization of transfusion indications

Keywords: None
ANTENATAL CARE IN MOROCCO: COMPLIANCE AND DETERMINING FACTORS FOR NON-ATTENDANCE

Mohammed Amine Radouani¹, Hassan Aguenou², Mustapha Mrabet³, Amina Barkat⁴

¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’Enfants Équipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat, Université Mohammed V, Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, Faculté de médecine, Université ibn toFAIL-Cnesten; RDC-Nutrition AFRA/AIEA, kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie, Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat, Université Mohammed V, Rabat, Morocco

Background and aims: Antenatal care (ANC) is a preventative measure that improves both mother and newborn health outcomes. The aim is to describe the compliance and determining factors for non-attendance are scarce and urgently needed to improve ANC in Morocco, if necessary.

Methods: During October 2014, mothers attending an urban paediatric hospital in Rabat or a rural clinic in Benslimane with children older than 6 months were approached. Oral informed consent was provided and a questionnaire on ANC filled.

Results: A total of 235 women were recruited, 183 from the urban hospital. 51 women referred not to have done any antenatal visit, 53% of whom pointed distance as the reason for non-attendance. Among those who did at least one visit, 98% had at least one echography done, 78% had their blood group typed, and 73% had the haemoglobin assessed. On the other hand, 33% did not have the glycaemia checked, and no serology was tested in 58% of the women who attend an antenatal clinic. Household monthly revenue was higher among women who did at least one antenatal visit (median revenue 333 euros vs. 185 euros, Wilcoxon rank-sum test p < 0.001). In the multivariate analysis, being uneducated was strongly associated with not attending any antenatal visit. Living in a rural area was also an independent risk factor for non-attendance.

Conclusions: Adverse socio-economic factors are an important barrier to antenatal care in women from Rabat and outskirts, leaving mothers and children from poorer families in higher risk of perinatal morbidity.

Keywords: None
Neonatology

BIRTH DEFECT STATUS IN BANGLADESH: FINDINGS FROM NATIONAL NEONATAL PERINATAL DATABASE (NNPD) AND SURVEILLANCE OF BIRTH DEFECTS

Mohammad Abdul Mannan¹ ¹, Md. Ismail Hossain¹, Sadeka C Moni¹, Mohammad Kamrul Hassan Shabuj¹, Sanjoy Kumer Dey¹, Arjun Chandra Dey¹, Rabeya Khatoon², Mohammed Shahidullah¹

¹Neonatology, Bangabandhu Sheikh Mujib Medical University (BSMMU), ²MNCAH, WHO, Dhaka, Bangladesh

Background and aims: As mortality and morbidity from common neonatal diseases like perinatal asphyxia, prematurity and sepsis becoming comparatively less, birth defects are coming up as an issue of concern. Evidence regarding birth defect is essential yet very limited in Bangladesh. National Neonatal Perinatal database (NNPD) was established in Bangladesh as a collaborating part of the WHO-SEARO.

Methods: Bangabandhu Sheikh Mujib Medical University has been participating as a nodal centre since inception of the NNPD with technical support from WHO-SEARO. Data of all newborns including birth defects were collected from 15 medical institutions over a period of one and half year. All data were entered in database after clinical evaluation in delivery room, post natal ward and in NICU.

Results: During the study period 44,847 babies were born of which 853 had birth defect making the incidence 1.9%. Six percent neonates had consanguineous parents, 18.3% had maternal age >30 years. Birth defects according to the ICD code 10 revealed orofacial clefts 22.7%, CVS 16.6%, skeletal defects 13.7%, CNS malformation 10.3%, NTDs 9.9%, renal 8.6%, GIT 3.4% and others 49 % including multiple birth defects and syndromes.

Conclusions: This study attempted to reveal the current scenario of birth defect which is found to be alarming.

Keywords: None
BREAST-FEEDING PROMOTION TO NICUS: RUSSIAN EXPERIENCE

Irina Belyaeva¹, Leyla Namazova-Baranova¹, Tatyana Turti¹, Olga Lukoyanova¹ and Namazova-Baranova L, Turti T, Lukoyanova O.

¹neonatology, Scientific Center of Childrens Health, Moscow, Russia

Background and aims: BACKGROUND: preterm infants in NICU are often deprived of human milk for objective reasons.

AIMS: to estimate efficiency of supporting breastfeeding in NICUs for preterm infants.

Methods: METHODS: 250 preterm infants at the gestational age <34 weeks receiving treatment in NICU from January 2013 to December 2015 by using new methods of supporting breastfeeding: hospitalization of a child together with the mother, «kangaroo» care, family-oriented care, training supporting breast-feeding methods, elaboration of the mood to breastfeed in mother, founding a donor human milk bank and a supporting breastfeeding after discharge room were included into the prospective study of dates of beginning, frequency and duration of breastfeeding in NICU and after discharge. 200 preterm infants of the same gestational age who received hospital care before 2012 composed the comparison group.

Results: RESULTS: breastfeeding was initiated in NICU in 86% of infants (in the comparison group 37%); during first 3 months 73% of infants were fed with human milk (21% in the comparison group). We managed to prolong breast-feeding until 6 months corrected age in 45% of the main group patients, while patients of the comparison group weren’t fed with human milk at this age.

Conclusions: CONCLUSION: Individualized approach to a breastfeeding woman and help the “mother-child” dyad after discharge enabled to prolong breastfeeding in vulnerable patients.

Keywords: Breastfeeding, family-oriented care, human milk, preterm infants
Background and aims: Objective: To evaluate the feasibility, safety & efficacy of bubble CPAP in preterms with RD.

Background: To reduce NMR, GOI is strengthening FBNC through setting up SNCUs. Bubble CPAP for management of RD in preterms was established at SNCU, DH, Nalgonda by MOH, as a Pilot project.

Methods: Preterm infants with RD, a Silverman score of >5 were subjected to bubble CPAP. A rule of 5 was used for all neonates. The maximum pressure used was 7cms. FiO2 was adjusted to maintain SpO2 between 87-93%. Flow was titrated to maintain continuous bubbling in the bubble chamber. Those infants in whom RD did not resolve with bubble CPAP were referred, as no backup ventilation was available in the unit. Surfactant was not given to any of the infants. Bedside X-ray was done for all babies.

Results: From aug2013 to Dec2015, a total of 112 preterm babies with RD were supported with Bubble CPAP. The mean BW of the babies was 1.45 ±0.49kg. 65 (62.5%) infants were male and 47 (37.5%) female. In 75 infants the age of starting CPAP was < 6 HOL. In 92 infants the maximum pressure used was 5cm of H2O. The mean duration of CPAP was 61.7 ± 19 hours. 94 infants (83.9%) were successfully discharged. 5 infants were referred to a tertiary care for ventilation. 1 infant had pneumothorax.

Conclusions: Early bubble CPAP for RD in preterm babies is feasible, safe & effective at a SNCU in the district hospital. 83.9% of infants survived. No significant nasal trauma. Use of surfactant was reduced. The incidence of pneumothorax was very low.

Keywords: CPAP IMPORTANCE IN SURVIVAL OF PRETERMS
BURDEN OF SEVERE BIRTH ASPHYXIA AT FEDERAL MEDICAL CENTRE ASABA. LESSONS AND PROPOSAL FOR ALLEVIATION.

Obinna Nwankwo¹, Osaretin Chimah¹, Ikechukwu Okonkwo², Angela Okolo³

¹Paediatrics, Federal Medical Centre, Asaba, Delta State, ²Child Health, University of Benin Teaching Hospital, ³Child Health, University of Benin Teaching Hospital, Dept Of Child Health, Neonatal Unit, Nigeria, Benin City, Edo State., Nigeria

Background and aims: Birth asphyxia accounts for 9.4% of global U5 mortality, 27% of neonatal mortality and survivors develop long term neurologic sequelae. Perinatal factors contribute to 90% of birth asphyxia (BA). The incidence, although low in developed countries where contribution from obstetric factors has been reduced remains high in developing economies.

Nigeria is the second highest contributor to Neonatal mortality and BA is the third commonest cause of mortality (24%). Institutional data indicates the incidence of 24 /1000 deliveries and ranks BA as third cause of mortality. The underlying social factor is lack of antenatal care.

We assessed the trend of BA over a four year period to identify a strategy for its reduction as to impact on reduction of neonatal mortality.

Methods: We reviewed SCBU admissions over March 2010 to December 2014 and extracted the relevant information as the APGAR and the HIE scores. All cases with APGAR of <3 at 1 minute or <5 at 5 minute were extracted and HIE scores included.

Results: 356 (161.5/1000) were asphyxiated and 204 (92.6/1000) had HIE 161.5/1000 in a total of 2203 admissions. The asphyxia rates hovered around 16% over the years. Only 22% cases occurred in booked mothers. The overall BA mortality was 26.6%. Major causes of neonatal mortality were prematurity, BA, Sepsis and NNJ for an overall neonatal mortality of (128/1000).

Conclusions: BA, the second highest cause of neonatal mortality was an important cause of admission. 22% of BA mothers were booked. Efforts at improving the situation should also target strategies for improving ANC utilization.

Keywords: Severe Birth Asphyxia, FMC Asaba, Nigeria
**Neonatology**

**CALMER: A NOVEL METHOD OF STABILIZING BRAIN BLOOD FLOW DURING PAINFUL PROCEDURES IN PRETERM INFANTS IN THE NICU**

Liisa Holsti¹, Manon Ranger²

¹Occupational Therapy, ²Pediatrics, University of British Columbia, Vancouver, Canada

**Background and aims:** Preterm infants in the NICU undergo multiple painful procedures. Skin-to-skin holding by parents reduces pain, but parents may not always be available. We invented CALMER, a medical device which simulates skin-to-skin holding including touch, heart beat sounds and breathing motion (PCT Utility Patent #CA2015051002).

**Aim:** To study CALMER treatment effects on preterm infant brain blood oxygen levels during routine blood collection.

**Methods:** In a randomized controlled pilot study, 14 preterm infants (mean BW 1428g, SD 353, GA 30 weeks, SD 2) received either standard care-facilitated tucking (n=8) or CALMER (n=6). Brain blood oxygen levels were assessed with near-infrared spectroscopy (Portalite, Artinis Medical:Netherlands). Changes between groups in total hemoglobin concentration [tHb] across 3, 1-minute phases of blood collection (Baseline, Heel lance, Recovery) were examined.

**Results:** Infants in the CALMER group had more stable cerebral blood oxygen levels ([tHb]) than Controls during heel lance: mean % change -57% (SE 43) CALMER group; -933% (SE 948) Controls. Infants in the CALMER group also had greater stabilization of mean [tHb] during the Recovery phase: mean % change from baseline -27% (SE 42) CALMER group vs -151% (SE 160) Controls.

**Conclusions:** Calmer shows promise as a method for stabilizing brain blood oxygen levels in preterm infants during acute painful procedures.

**Keywords:** pain management, premature infant
CHEMO-PROPHYLACTIC THERAPY FOR NEWBORN BABIES AND SUCCESSFUL TREATMENT OF EXTREMELY LOW BIRTH WEIGHT INFANT SUFFERING FROM CONGENITAL VERTICAL LUNG TUBERCULOSIS

Tae-Jung Sung¹, Su Ji Ryou¹, Seong Mi Jung¹, Yeseoul Han¹
¹Department of Pediatrics , Hallym University Medical Center , Seoul , Korea, South

Background and aims: Prevalence of congenital tuberculosis (TB) is nowadays a rare disease and few reports had been reported for pregnant women and their babies. This report aims to show the case with woman with TB meningitis during pregnancy and her premature baby delivered at 24th weeks of gestational age. In addition, successful chemo-prophylactic therapy applied to all the newborns who were exposed to the infected baby.

Methods: The 34 years old woman delivered a boy at 24th weeks with 760 grams. One month later, she was diagnosed with TB meningitis and her baby was diagnosed with lung TB through sputum culture and PCR. Chest X-ray and PPD test were checked for the 29 babies who stayed with the infected premature baby and prophylactic Isoniazid was prescribed for 3-months with their parents’ consent.

Results: Immediate complete isolation was done for 2 weeks and anti-tuberculosis medications were started for infected infants. After the 3-month chemo-prophylactic therapy for exposed infants, follow-up X-ray and PPD test were done. They all showed negative results.

Conclusions: This report showed a rare case of an extremely low birth weight infant infected with TB transmitted through the placenta. Post-exposure chemoprophylaxis was successful with no further development of TB occurred through an effective infection control.

Keywords: Low Birth Weight, premature infant, tuberculosis, vertical transmission
CLINICAL EFFICACY OF PHOTOTHERAPY IN COMBINATION WITH PROBIOTICS IN THE TREATMENT OF JAUNDICE IN PREMATURE INFANTS

Jun Lu¹, Bo He¹, Qiaolin Cheng¹

¹Pediatrics, Haikou People’s Hospital, Haikou, China

Background and aims: The efficacy of probiotics in the treatment of jaundice in premature infants remains unclear. This study aimed to investigate the efficacy of phototherapy combined with Bifid-triple viable capsule or Saccharomyces boulardii in the treatment of jaundice in premature infants.

Methods: Eighty-seven infants with a gestational age of < 37 weeks and birth weight of > 1000 g were enrolled. The infants were randomized into three groups: A, receiving phototherapy alone (n = 29); B, receiving phototherapy combined with an oral dose of 125 mg S. boulardii twice daily (n = 28); C, receiving phototherapy combined with an oral dose of 105 mg Bifid-triple viable capsule twice daily (n = 30), and treated for 7 days.

Results: No significant difference was observed in the duration of phototherapy (64.83±30.81 vs. 65.00±37.28 vs. 69.73±31.00 hours, P>0.05) among the A, B, and C groups. Complications were mild and all caused by phototherapy, with no significant difference in the frequency of complications among the three groups (P>0.05).

Conclusions: Although phototherapy in combination with Bifid-triple viable capsule or S. boulardii is safe for the short-term treatment of jaundice in premature infants, the combined therapies can not shorten the duration of phototherapy.

Keywords: Bifid-triple viable capsule, jaundice, phototherapy, premature infant, Saccharomyces boulardii
COMPARING THE USE OF METHYLATED SPIRIT AND CHLORHEXIDINE IN UMBILICAL CORD CARE AMONG MOTHERS IN ABAKALIKI, EBONYI STATE, NIGERIA

Uzoma Vivian Asiegbu¹, Chinonyelum Thecla Ezeonu¹, Obiora Godfrey Asiegbu², Obum Ezeanosike¹, Benson Nnamdi Onyire¹, Nwakaego Odoh³

¹paediatrics, ²Obstetrics & Gynaecology, Federal Teaching Hospital, Abakaliki, Ebonyi state Nigeria, Abakaliki, ³paediatrics, State House Hospital, Abuja, Nigeria

Background and aims: Umbilical cord care is essential in the newborn. Various substances have been used to achieve this, among them are methylated spirit and chlorhexidine. This study compares their use in umbilical cord care among mothers at the three levels of health care in Abakaliki, Ebonyi state Nigeria.

Methods: Mothers who brought their babies for immunization were interviewed using semi-structured questionnaires. Consent was obtained from each participant.

Results: Two hundred and seventy three mothers were interviewed. Majority (82.78%) use methylated spirit. Of these, 19.13% were from the primary health care (PHC), 35.21% from the secondary health care (SHC) and 36.96% from the tertiary health care (THC). Use of chlorhexidine was observed among 14.29% mothers out of which 12.82% were from the PHC, 17.95% from the SHC and 61.45% from the THC.

The use of either methylated spirit or chlorhexidine was seen more among mothers from the tertiary health center (p=0.031) who were civil servants (p=0.007), aged 26-35 year (p=0.002) with tertiary education (P=0.004) and those who had between two to four children (p=0.0001). Very few mothers use chlorhexidine at both SHC and PHC.

Conclusions: Chlorhexidine use is low. The use of chlorhexidine as well as methylated spirit increased as the level of care increased, being low at the PHC and SHC levels. This would seem to suggest that other substances are applied on the cord at the lower levels of care. More awareness creation is required at all levels but more at the lower levels. A more detailed study is needed.

Keywords: Abakaliki, chlorhexidine, methylated spirit, Mothers, Nigeria, umbilical cord Care
Neonatology

COMPARISON BETWEEN THE EFFECT OF SWADDLING VS MUSIC ON PAIN RESPONSE DURING A ROUTINE HEEL LANCE PROCEDURE IN NEONATES: A DOUBLE BLIND RANDOMIZED CONTROLLED TRIAL

Wiwi Gunawan¹, Ann tan-ting¹, Joanne Dizon¹, Tracy Victorino¹, Erika Ng Tsai²
¹Pediatrics, cardinal santos medical center, ²Pediatrics, cardinal cantos medical center, manila, Philippines

Background and aims: To compare the effect of swaddling and listening to music on neonates heart rate (HR), oxygen saturation (SpO2), and the Premature Infant Pain Profile (PIPP) scores during a routine heel lance procedure.

Methods: 75 Newborns who were born in Cardinal Santos Medical Center, who passed the Newborn Hearing Test without acute illness were selected as subjects. Each subject was randomly assigned to the three treatment groups (swaddling, music, and control) while undergoing heel lance procedure. Heart rates, oxygen saturation measurement, and PIPP (Premature Infant Pain Profile) scores before, immediately after and 5 minutes after heel lance procedure. Statistical analysis was done using ANOVA

Results: The mean heart rate who received either swaddling and music returned to their baseline Heart rate compared to those without swaddling and music 5 minutes after the procedure (p-value 0.03960). No significant different on SpO2 between three interventions immediately after (p-value 0.06799) or 5 minutes after the procedure (p-value 0.06799). Based on PIPP score, the pain response to procedure under swaddling and music yielded lower score than those without swaddling and music 5 minutes after the procedure (p-value 0.00002).

Conclusions: Swaddling and music significantly reduce the pain response during a heel lance procedure compared to control. However, no significant difference between swaddling and music seen in the vital sign measurements and pain scores among the subjects.

Keywords: Newborn, Heel Lance, Pain, Swaddling, Music
CONTROLLING AN OUTBREAK OF KLEBSIELLA IN A RESOURCE LIMITED NEONATAL INTENSIVE CARE UNIT (NICU)

Sara Singh¹, Leif Nelin², Madan Rambaran³, Narendra Singh⁴

¹Paediatrics, Georgetown Public Hospital Corporation, Georgetown, Guyana, ²Neonatology, Nationwide Children's Hospital, Galena, United States, ³Georgetown Public Hospital Corporation, Georgetown, Guyana, ⁴Humber River Hospital, Toronto, Canada

Background and aims: In Guyana, SA, Georgetown Public Hospital Corporation is the only tertiary referral hospital. GPHC has ~6000 live births per year of which ~40% are high-risk maternal transfers. GPHC has the only Level III NICU in Guyana and receives neonatal transfers. The resulting high volume presents difficult challenges. In 2014, an outbreak of Klebsiella began that resulted in high mortality rates, and was resistant to standard containment practices. The aim of this study was to explore non-standard containment practices and their effect in containing the outbreak and improving survival in a resource limited NICU.

Methods: Data were collected from 1/1/2015 to 12/31/2015, and analyzed using Fisher's Exact Test and standard run charts.

Results: Despite standard infection control measures, the rate of neonatal mortality remained 36% during the first 3/4 of 2015 with most deaths caused by Klebsiella sepsis. In September extraordinary measures were added, including, closing the NICU, admitting patients into new space after thorough sanitization, only allowing essential personnel into the new rooms and requiring personnel to change clothes before entering. In the last 1/4 of 2015 the neonatal mortality fell to 11.7% (p<0.0001), with no deaths from Klebsiella in November or December.

Conclusions: An integrated approach of changing locale, separating patients based on care needs, decreased personnel flow and limiting patient numbers finally contained a difficult Klebsiella outbreak, which resulted in a dramatic improvement in survival in a resource limited Level III NICU.

Keywords: None
CORD BLOOD THYROID PROFILE OF TERM AND POST-TERM NIGERIAN NEONATES.

Kareem Airede, Omoshalewa Ugege

Paediatrics, University of Abuja, Abuja, Paediatrics, Usmanu Dan Fodiyo University Teaching Hospital, Sokoto, Nigeria

Background and aims: Congenital Hypothyroidism is a preventable cause of mental retardation, requiring diagnostic newborn screening. There is paucity of data on neonatal thyroid levels in Nigerian newborns. Hence our comparison of cord blood (CB) thyroid profile of healthy term and post-term (P-T) neonates.

Methods: A prospective, descriptive and cross sectional study done between July-December 2009, at Usmanu Danfodiyo University Teaching Hospital, Sokoto. The cohorts were; 47 consecutively delivered healthy term and 22 P-T neonates. CB assayed for T₃, T₄ and TSH levels using the ELISA technique. Obtained data are expressed as mean and SDs, and Statistical inference was by Student t test.

Results: All P-T neonates were large for gestational age (LGA). The term consisted of 38, appropriate for gestational age; 3, small for gestational age and 6, LGA. The mean (SD) of serum T₃, T₄ and TSH in terms were: 0.58 ± 0.56nmol/l, 91 ± 83.1 nmol/l, and 5.95(5.81) mU/l; and in P-T: 0.60 ± 0.26nmol/l, 140.57 ± 49.01nmol/l, and 4.15 ± 0.78mU/l, respectively. No statistically significant difference in the mean CB T₃ and TSH of term and P-T (p=0.85, 0.16, respectively). However, mean CB T₄ was significantly higher in the P-T than the term (p=0.01).

Conclusions: No significant difference noted between thyroid profiles of study cohorts, except for T₄. Therefore, we recommend that cord TSH be used in screening for hypothyroidism in terms and post-terms. More multicenter collaborative evaluations are required.

Keywords: Neonate, Thyroid profile, umbilical cord, Term, Post-term, Endocrinology
DEBRIEFING DELIVERY ROOM RESUSCITATION

Safaa Elmeneza1, Heba Gafar1, Abeer Kadom2 and Egyptian Neonatal Safety Training Network

1Pediatrics, ALAzhar University, Cairo, 2Pediatrics, MOH, Kafr EL Dawar, Egypt

Background and aims: Auditing neonatal resuscitation allows for quantitative and qualitative assessment of competence and performance of health care providers. Aim of the current study was to determine the frequency of resuscitation interventions, evaluate compliance with neonatal resuscitation guidelines, identify common errors in resuscitation process, as well as teamwork behaviors errors.

Methods: It was prospective study. Data collected from 539 deliveries. We recorded the process of resuscitation and resuscitation team behavior through designated checklist. The checklist includes items to brief the notification, preparation, response, behavioral skill, team performance and resuscitation process steps.

Results: Our results showed that the percentage of errors during resuscitation process ranged between 3% in chest compression to 100% in notification step. Debriefing of neonatal resuscitation decreased significantly preparation errors, behavioral skills errors as communication and leadership and response process, as well as teamwork performance. The notification errors between obstetric and resuscitation teams were the commonest errors that did not improve after debriefing.

Conclusions: Debriefing of neonatal resuscitation in delivery room improve patient safety of newborn infants. We recommend use of observation score sheets to assess processes of neonatal resuscitation and team performance. Further cooperation between obstetrician and neonatologist to improve the notification process.

Keywords: debriefing – resuscitation – newborn
DELIVERY ROOM CPAP IS ASSOCIATED WITH EARLY PNEUMOTHORAX IN TERM NEWBORN INFANTS
Laura Clevenger¹, John R Britton²
¹Newborn Intensive Care Unit, ²Neonatology, Saint Joseph Hospital, Denver, United States

Background and aims: Current neonatal resuscitation guidelines recommend continuous positive airway pressure (CPAP) in the delivery room (DR) for infants with labored breathing or hypoxia unresponsive to free flow oxygen. Because previous workers (Arch Dis Child 2015;100:F382-7) described an association between DR CPAP and pneumothorax (PT) in early-term infants only, we explored this association among all term newborns.

Methods: Records of term infants presenting with PT on the day of birth were compared to those of control term infants with respiratory distress persisting from birth without PT between 2001 and 2013 at a community hospital. Infants receiving positive pressure ventilation in the DR were excluded. For both groups, tabulated data included DR CPAP use and gestational age (GA).

Results: Data were obtained for 169 cases and 850 controls. DR CPAP use increased annually during this period (r=.18, P<.001) and PT rates increased with GA (r=.09, P=.005). Compared to controls, PT infants were more likely to have received DR CPAP (16.8% vs. 40.2%, respectively, P<.001). Logistic regression revealed DR CPAP (Adjusted Odds Ratio [AOR]=3.30, 95% confidence interval [CI]=2.31, 4.72, P<.001) and GA (AOR=1.21, 95% CI=1.05, 1.39, P=.009) to be independent predictors of early PT.

Conclusions: Use of CPAP during neonatal resuscitation is associated with an increased risk of PT on the day of birth for all term infants. Although it is possible that DR CPAP may predispose to early PT, it is also possible that it may merely reflect the degree of distress and need for intervention among infants with PT presenting in the DR.

Keywords: CPAP, Newborn, pneumothorax, Resuscitation
Neonatology

EARLY NASAL CPAP IS VERY EFFECTIVE IN PREVENTING MORBIDITY AND MORTALITY IN VLBW BABIES

Deepak Agrawal¹, Gaurav BHATNAGAR¹, Satyendra bansal¹
¹pediatrics, MANGAL NURSING HOME GWALIOR INDIA, gwalior, India

Background and aims: Introduction: CPAP is a non-invasive method that prevents collapse of lung alveoli and provides respiratory support to immature lungs of preterm babies. If CPAP is applied early in preterm very low birth babies it is quite effective in saving many lives and minimize the complications of prematurity.

Aims And Objective: To determine if early nasal CPAP in preterm VLBW babies reduces the need for mechanical ventilation and its associated morbidities

Methods: Neonates were randomized into 2 groups.

Group 1 – Early nasal CPAP within 10-15 min after birth.

Group 2 – Conventional method of care.

Outcome –

1) Percentage of babies developing RDS and requiring rescue surfactants and ventilator.
2) Percentage of babies developing adverse effects – air leaks, sepsis, ROP.
3) Mortality.

Results: Neonates were followed for 30 days and intubated if required, at specified conditions.40 neonates were randomized into 2 group. In Group 2, 55% developed RDS, required intubation & rescue surfactant, compared to 20% in Group 1. Which is significant ( p value=0.2 ). Difference of incidence of sepsis in Gr2 was significant as compared to Gr1 ( p value=0.4 ). The incidence of air leaks, sepsis, ROP, mortality & Mean duration on ventilator were not significant ( P > .05 )

Conclusions: There is less incidence of RDS, requirement of intubation and associated morbidities in neonates who received early nasal CPAP

Keywords: None
Early Onset Neonatal Sepsis in Canada: 2011-2012

Michael Sgro¹, Koravangattu Sankaran², Mark Yudin³, Anna Kobylianskii⁴, Douglas Campbell¹

¹Pediatrics, University of Toronto, Toronto, ²Pediatrics, Royal University Hospital, Saskatchewan, ³Obstetrics and Gynecology, University of Toronto, ⁴Medicine, University of Toronto, Toronto, Canada

Background and aims: Studies suggest that the organisms responsible for early-onset neonatal sepsis (EONS) are changing with an increase in Escherichia coli (E. Coli) & antibiotic-resistant organisms. The guidelines for prevention and treatment of EONS are based on Group B streptococcus (GBS).

We review the incidence, types of organisms and corresponding resistance patterns involved in EONS in Canada and determine the effects of maternal antibiotic prophylaxis.

Methods: Cases of EONS were identified using the Canadian Paediatric Surveillance Program (CPSP).

Results: 127 cases were identified. 79.5% of cases presented within the first 24 hours of life, 15% presented between 72 h-7 days. GBS accounted for 41.7%, E. Coli. 35.4% with 33.9% resistance. 55.6% of E. Coli were resistant. Ampicillin resistance being common. The species of infecting organism was significantly associated with gestational age, very low birth weight, age at presentation, the mother having received GBS prophylaxis, and rupture of membranes lasting more than 18 h. GBS was most common in term and E. Coli in preterm neonates. The overall EONS case fatality rate was 11%, with most of these being deaths from E. Coli.

Conclusions: There is a lower rate of EONS with differing dominant organisms based on gestational age.

Keywords: ecoli, GBS, maternal antibodies, Neonates, sepsis
EFFECT OF BEDSIDE NURSE TRAINING ON COMPLICATIONS OF MECHANICAL VENTILATION IN THE NEONATAL INTENSIVE CARE UNIT

Nikoo Niknafs1, Parichehr Talu2, Jila Mirlashari3, Naser Bahrani4,4
1pediatrics, 2 faculty of nursing and midwifery, 3faculty of nursing and midwifery, 4tehran university of medical sciences, tehran, Iran

Background and aims: Mechanical ventilation in newborns has complications such as bronchopulmonary dysplasia, need for reintubation, air leak syndrome etc. Nurses are the first line in prevention and management of these complications. There are limited opportunities for them to enhance their skills in newborn care. This study aimed at evaluating the effect of an intensive bedside training course for nurses on the complications of mechanical ventilation in newborns in the NICU.

Methods: The target population was infants undergoing mechanical ventilation in the neonatal intensive care unit of Women’s hospital in Tehran during a 12-month period. A one month course of 10 bedside training sessions each repeated twice in form of group discussions, practical skills teaching at bedside, handouts was held. Complications of mechanical ventilation were compared in two groups of 60 newborns before and after the intervention.

Results: The incidence of re-intubation, air leak syndrome, duration of mechanical ventilation, length of hospitalization and bronchopulmonary dysplasia decreased significantly during the 6 months after the intervention (p<0.05). Retinopathy of prematurity and mortality did not show any significant difference after the intervention.

Conclusions: Intensive bedside training of nurses is effective in decreasing the complications of mechanical ventilation in newborns. With regard to the heavy workload of nurses and their problems for attending educational classes out of the unit, the quality of care of infants under mechanical ventilation can be enhanced by training their caregivers at the infant’s bedside.

Keywords: bedside training, mechanical ventilation, neonatal intensive care unit, Newborn, nursing education
EFFECT OF INITIAL RESUSCITATION GAS ON NEONATAL OUTCOMES IN PRETERM INFANTS

Amuchou Soraisham1, Yacob Rabi1, Abhay Lodha1, Junmin Yang2, Prakesh Shah2, Shoo Lee2, Nalini Singhal1 on behalf of Canadian Neonatal Network

1Pediatrics, University of Calgary, Calgary, 2Pediatrics, University of Toronto, Toronto, Canada

Background and aims: Neonatal outcomes of preterm infants resuscitated with different concentration of oxygen at birth require further clarification. The objective is to compare the neonatal outcomes of preterm infants(<33 weeks) in whom resuscitation was initiated with 21% O2, an intermediate O2 concentration or 100% O2.

Methods: Inborn preterm infants with GA <33 wks admitted to NICUs participating in Canadian Neonatal Network (CNN) between January 2010 and December 2014 were retrospectively evaluated. Propensity score matching was performed to 1-1-1 match in three groups: 21% O2, intermediate O2 and 100% O2 groups. Primary outcome of survival without major neonatal morbidity (i.e. severe neurological injury, NEC, ROP >stage 2, BPD and nosocomial sepsis) was compared between the three groups.

Results: Of the 13159 eligible infants, 5490 infants were matched (1830 each in group) by propensity score. Demographic factors and outcomes are reported in table. Multivariable logistic regression after controlling for maternal age and maternal antibiotics showed the odds of survival without major neonatal morbidity was significantly lower in 100% O2, as compared to 21% O2, but not different between intermediate O2 and 21% O2.

Conclusions: Use of 100% O2 at the initiation of resuscitation is associated with lower rate of survival without major neonatal morbidity as compared to 21% O2 in preterm infants < 33 weeks GA.

Keywords: Neonatal resuscitation, Outcome, Oxygen, Prematurity
EFFECTIVENESS OF SINGLE VERSUS DOUBLE PHOTOTHERAPY IN THE TREATMENT OF NEWBORNS WITH INDIRECT HYPERBILIRUBINEMIA ADMITTED TO NICU, TIKUR ANBESSA HOSPITAL.

Adane Abera*1 and Yabibal Gebeyehu, MD

1Pediatrics, Addis Ababa University, Addis Ababa, Ethiopia

Background and aims: Background: Hyperbilirubinemia is a common problem in neonates. Elevated levels of unconjugated bilirubin have a potentially harmful effect on the central nervous system of newborns. Phototherapy is the most widespread treatment for lowering bilirubin concentration in neonates. The efficacy of phototherapy depended on the light spectrum, irradiance of light, and surface area of the infant exposed to phototherapy.

Aim of this study is to compare the efficacy of double-surface intensive phototherapy (DSIPT) and single-surface conventional phototherapy (SSCPT) in treatment of neonatal indirect hyperbilirubinemia.

Methods: Method: It is a cross-sectional study, data collected prospectively and conducted on neonates with neonatal jaundice admitted to Tikur Anbessa hospital NICU from April to July 2015.

Results: Results: The mean TSB levels of the SSCPT and DSIPT groups at the beginning of phototherapy were 16.38±4.04 mg/dl and 24.86±5.15 mg/dl, respectively, with statistically significant difference between them (p=0.004). A significantly higher decrease in bilirubin levels was observed in the DSIPT group both in the first 24 hours and second 24 hours of phototherapy compared to the SSCPT group (6.13±1.0 mg/dl/day in the first 24hrs and 4.05±0.59 mg/dl in the second 24hrs Vs 2.16±1.1 mg/dl/day in the first 24hrs and 2.71±0.42 mg/dl/day in the second 24hrs, respectively, p<0.001). Duration of hospitalization was shorter in DSIPT subjected neonates

Conclusions: Conclusion: DSIPT was significantly more effective than SSCPT in treatment of neonatal hyperbilirubinemia. It also reduced the duration of hospital stay

Keywords: DSIPT: double-surface intensive phototherapy, NNJ: neonatal jaundice, SSCPT: single-surface conventional phototherapy
Neonatology

ERYTHROMYCIN FOR TREATING AND PREVENTING FEEDING INTOLERANCE IN PRETERM NEONATES: A META-ANALYSIS

Jasmine Ann Javier* 1, Robert Marcel Huibonhoa1

1Pediatrics, Philippine General Hospital, Manila, Philippines

Background and aims: Enteral feeding intolerance is a common problem in preterm infants. To evaluate the efficacy of erythromycin in the prevention and treatment of feeding intolerance in preterm neonates < 37 weeks.

Methods: Electronic databases and local studies were searched. Studies which included neonates less than 37 weeks of age, given erythromycin either as prevention or as treatment. Studies were separated into prevention and treatment studies. Primary outcome was time to full enteral feeding (150cc/kg/day). Subgroup analyses were done to investigate heterogeneity. Secondary outcomes included duration of total parenteral nutrition and hospital stay, weight gain, and incidence of sepsis, hypertrophic pyloric stenosis and necrotizing enterocolitis.

Results: For the treatment studies, the mean difference between the two groups in terms of time to full feeding showed significant difference at a dose of 3-15 mkday at 4.46 days and for preterm infants less than 32 weeks of age at 5.12 days. When used for prevention, the mean difference between the two groups showed that there is a significant benefit in giving erythromycin for 3-15 mkday at 2.18 days and for less than 10 days at 1.37 days.

Conclusions: This study provides significant evidence for the benefit of giving erythromycin in preterm infants diagnosed with feeding intolerance. It was noted that it is beneficial when erythromycin is given in low dose (3-15 mkday) and preterm infants more than 32 weeks of age. When used as prophylaxis, there is a significant benefit in giving erythromycin as low dose (3-15 mkday) for less than 10 days.

Keywords: erythromycin, feeding intolerance, neonate, preterm
ETIOLOGY OF HYDROPS FETALIS AT THE PHILIPPINE GENERAL HOSPITAL: A RETROSPECTIVE STUDY
Michelle Abadingo*1, Maria Melanie Liberty Alcausin1
1Department of Pediatrics, University of the Philippines-Philippine General Hospital, Manila, Philippines

Background and aims: Hydrops fetalis (HF) is defined as accumulation of fluid in 2 or more fetal compartments. HF is a diagnosis with significant morbidity and mortality. An epidemiologic profile of HF in the local population is needed to identify possible etiologic factors.

Methods: This is a retrospective review of hydrops fetalis cases delivered at the PGH from January 1, 2010 to December 31, 2014. Fifty-eight (58) medical charts of patients were reviewed.

Results: The median gestational age at birth was 31 (range 21-40) weeks. There were 19 identified cases (32%) of stillbirth. Of the 32 patients born alive, 30 (93.75%) died in the immediate neonatal period. The etiologies of HF were identified in 12 cases, which included hematologic anomalies (n=5), cardiac anomalies (n=3), infectious problems (n=3) and congenital tumor (n=1). Aside from the 2 confirmed cases of alpha thalassemia, 15 cases presented with microcytic, hypochromic anemia on complete blood count (CBC). The cause of HF was not confirmed in the remaining 47 (80%) cases. There was a lack of laboratory work-ups done.

Conclusions: It is important to fully investigate the causes of HF to aid in the proper management, counselling and treatment planning. Further work-up must be done for mothers presenting with microcytic, hypochromic anemia. This is an important and common feature of alpha thalassemia which is a major cause of hydrops fetalis in Southeast Asian countries.

Keywords: etiology, fetal outcome, hydrops fetalis
EVALUATION THE EFFECTS OF NON-PHARMACOLOGICAL APPLICATIONS IN THE CONTROL OF PAIN ORIGINATING DURING PREMATURE RETINOPATHY MEDICAL EXAMINATION

Gülümser Dolgun¹, Şirin Bozlak²
¹Department of Midwifery, Istanbul University Faculty of Health Science, ²College of Medicine, Gaziosmanpaşa Medical Career College, Istanbul, Turkey

Background and aims: Our aim is to evaluate the effects of swaddle-sucrose, swaddle-breast milk which are the non-pharmacological applications and swaddle-distilled water as a control on the pain perception in premature infants in the control of pain originating during ROP examination.

Methods: Investigation was planned as a prospective, randomized controlled study. Data was collected from Newborn Intensive Care Unit of a university hospital. Data was obtained from 87 of premature infants less than 32 gestation weeks and 1500 g body weights. 0.2 mL of 24 % sucrose and breast milk was given orally to infants immediately before the application. PIPP scale was used in the pain evaluation.

Results: Sucrose-swaddling application was negatively statistically significant relationship between pain score before and during the application in the pain control of preterm infants during ROP examination. An effect of breast milk-swaddling was not determined. Positively statistically significant relationship between pain scores of distilled water-swaddling group during and after the application.

Conclusions: It was seen that painkiller effect of swaddle-sucrose used during ROP examination was statistically significant, there was no different in swaddle-breast milk, but both of them were more effective than swaddle-distilled water in the relief of infants following the application.

Keywords: Pain, breast milk, swaddling, sucrose, retinopathy of prematurity (ROP)
EXCHANGE TRANSFUSION BUT NOT PHOTOTHERAPY CAN NORMALIZE COPPER, ZINC AND MAGNESIUM SERUM LEVELS IN NEONATES WITH INDIRECT HYPERBILIRUBINEMIA

Abdel-Azeem El-Mazary¹, Reem Abdel-Aziz², Madeha Sayed¹, Ahmed Al-Saidy³
¹Pediatric, Minia University, ²Pediatric, Minia, ³Clinical-Pathology, Minia University, Minia city, Egypt

Background and aims: Exchange transfusion and intensive phototherapy are two modalities of therapy for severe neonatal hyperbilirubinemia but which one of them can affect the trace elements serum levels is unknown.

Methods: we measured copper, zinc and magnesium serum levels in full term neonates with indirect hyperbilirubinemia and after exchange transfusion and phototherapy

Results: the levels of micronutrients were significantly normalized after exchange transfusion but not after intensive phototherapy. Significant positive correlations between the total bilirubin levels and copper and magnesium and negative correlations with serum zinc levels were present.

Conclusions: Exchange transfusion but not phototherapy can normalize these levels to be comparable with that of normal healthy neonates.

Keywords: None
FACTURING RISK FOR BRAIN DAMAGE IN A GROUP OF NEWBORNS AT HIGH RISK OF NEURODEVELOPMENTAL SEQUELAE

Mohammed Amine Radouani¹, Hassan Aguenaou², Mustapha Mrabet³, Amina Barkat⁴

¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’Enfants Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie, Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: Developmental outcomes of children born preterm are heterogeneous, yet the risk of poor neurobehavioral outcomes is high. The aim of the study is to identify risk factors for occurrence of perinatal brain injury objectified in transfontanellar ultrasound (TFU) in a group of infants at high risk of neurodevelopmental sequelae.

Methods: It's a retrospective study, conducted at the neonatal intensive care unit of the Children's Hospital of Rabat, during the period from 1 January to 31 December 2012. Were included newborns hospitalized for a medical condition with an intrauterine croissance retardation (ICUR) more than 5 days and have survived. The neurological workup includes TFU made between day 2 and day 5 of life. Data analysis were performed on Excel and SPSS 13.0 software. The level of significance was p <0.05.

Results: The percentage of newborns who developed neurological damage to the TFU was 36%. Patients with abnormalities in the TFU had a breakdown time, duration dependence of O2, duration of hospitalization and a higher frequency of nosocomial infections than patients without abnormality.

Conclusions: Future progress in improving neurobehavioral and cognitive outcomes depends on the conduct of interventions designed to take advantage of neonates.

Keywords: None
FROM MOUSE DEVELOPMENT TO SHEEP LUNG INJURY
Navin Bhopal¹, Changgong Li², Mar Janna Dahl³, Kurt Albertine³, Deepti Mathur¹, Parviz Minoo¹
¹Pediatrics, LAC+USC Medical Center & Children's Hospital Los Angeles, ²Pediatrics, University of Southern California, Los Angeles, ³Pediatrics, University of Utah, Salt Lake City, United States

Background and aims: The molecular basis of BPD remains elusive. Mice & sheep models are useful for studying human BPD. Here, we examined expression of novel genes identified in a mouse model of lung development in lambs exposed to invasive or non-invasive ventilation.

Methods: Genes were identified by microarray of mouse lung tissue RNA during development. The genes Cyr61, Slitrk6 & Pdgfra were selected for analysis in sheep lung based on function. Expression was examined in lungs of sheep delivered at 128 to 150 days (term) gestation. We also analysed lungs of sheep born at 132 days exposed to invasive mechanical ventilation (MV) or non-invasive high frequency nasal ventilation (HFNV) for 3 or 21 days. RNA was isolated & gene expression assessed by qPCR.

Results: In uninjured sheep lungs Slitrk6 & Cyr61 increased at term. Pdgfra trended towards decreased expression at term. In injured lambs Cyr61 increased in both MV and HFNV groups on day 3. Expression in HFNV was greater than MV. Slitrk6 decreased in both MV & HFNV groups on days 3 & 21. Pdgfra expression was higher in HFNV than MV lambs on day 3.

Conclusions: We found progressive rise in Cyr61 & Slitrk6 mRNA during sheep lung development. This suggests they are needed for pulmonary adaptation at birth. Cyr61 & Pdgfra expression is more robust in HFNV than MV sheep on day 3 suggesting an association with better outcome. Slitrk6 decreased in injured lungs. While these results are preliminary, they suggest adaptive changes in expression of developmentally critical genes in the lung in response to preterm birth. Supported by NHLBI & the Hastings Foundation

Keywords: bronchopulmonary dysplasia, premature infant, prematurity
GROWTH CURVES FOR FULL-TERM MOROCCAN NEWBORNS

Mohammed Amine Radouani¹, Hassan Aguenaou², Mustapha Mrabet³, Amina Barkat⁴

¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’Enfants Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie, Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

**Background and aims:** Neonatal anthropometric data is an important reflection of the growth and fetal development. The purpose is knowing the anthropometric standards of Moroccan newborns according to sex, gestational age, parity, age and corpulence of women.

**Methods:** Prospective and cross-sectional study. We gathered the information forward newborns alive, healthy, Moroccan parents, from normal pregnancies, born in Rabat Souissi’s maternity between January 2008 and December 2013.

**Results:** 5000 births were recruited. The ratio was balanced. Anthropometric standards identified according to gestational age and gender were lower than the Frenchs (AUDIPOG) and Tunisians. With our curves, it was determined the new thresholds SGA and macrosomia. Factors influencing fetal growth, it was verified, in addition to sex and gestational age of the newborn, age, parity and maternal body mass index (BMI), that have proven determinants of fetal growth in our context.

**Conclusions:** The curves of birth weight, height and head circumference of Moroccan newborns recruited have determines a news thresholds for hypotrophy and macrosomia.

**Keywords:** None
HELPING BABIES BREATHE PLUS - EDUCATION IS NOT ENOUGH
Sarah Kiguli¹, Nalini Singhal², Josephat Byamugisha³, Jamiir Mugalu⁴, Jesca Nsungwa-Sabiiti⁵, Flavia Namiiro⁶, Abhay Lodha², Doug McMillan⁶
¹Pediatrics, Makerere University, Kampala, Uganda, ²Pediatrics, University of Calgary, Calgary, Canada, ³Obstetrics & Gynecology, Makerere University, ⁴Pediatrics, Mulago Hospital, ⁵Child Health, Ministry of Health, Kampala, Uganda, ⁶Pediatrics, Dalhousie University, Halifax, Canada

Background and aims: Global education programs to reduce newborn mortality and morbidity include Helping Babies Breathe (HBB)-initial care at birth and Essential Care for Every Baby (ECEB)-subsequent care on the day of birth. Our aim was to determine the utilization (knowledge transfer) and effectiveness (outcome) in a Ugandan referral hospital with >32,000 annual births.

Methods: During 3-day courses over a 2 month period, 72 midwives and nurses were taught HBB and ECEB by 6 Ugandan Master Trainers. For 3 months prior and two 3 month periods following education, selected aspects of clinical care and outcome were abstracted from clinical records.

Results: Recorded use of bag and mask ventilation decreased and was surprisingly infrequent for babies who died. Temperature was rarely recorded. Tetracycline eye treatment and vitamin K use progressively increased but less than predicted. Identified barriers included - limited time (to perform or record), lack of acceptance, unavailable equipment/supplies, and transfer of trained personnel.

Conclusions: Although education may improve knowledge and skills, other considerations must be addressed if effective knowledge transfer is to occur to produce the desired outcomes.

Image:
<table>
<thead>
<tr>
<th><strong>Outcome/Treatments</strong></th>
<th><strong>Pre-Education</strong></th>
<th><strong>Post-Education (Period 1)</strong></th>
<th><strong>Post-Education (Period 2)</strong></th>
<th><strong>p-value</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>n=5458</strong></td>
<td><strong>n=6247</strong></td>
<td><strong>n=6298</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Survival</strong></td>
<td>5205 (95.4%)</td>
<td>6009 (96.2%)</td>
<td>6021 (95.6%)</td>
<td>0.072</td>
</tr>
<tr>
<td>Died</td>
<td>253 (4.6%)</td>
<td>238 (3.8%)</td>
<td>277 (4.4%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Place of Death</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Died in birth unit</td>
<td>191 (75.5%)</td>
<td>183 (76.9%)</td>
<td>231 (83.4%)</td>
<td>0.059</td>
</tr>
<tr>
<td>Died in SCN</td>
<td>62 (24.5%)</td>
<td>55 (23.1%)</td>
<td>46 (16.6%)</td>
<td></td>
</tr>
<tr>
<td><strong>Bag/Mask</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>91 (1.7%)</td>
<td>29 (0.5%)</td>
<td>51 (0.8%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>No</td>
<td>5367 (98.3%)</td>
<td>6218 (99.5%)</td>
<td>6247 (99.2%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Temp. ≤ 90 min</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15 (0.3%)</td>
<td>4 (0.1%)</td>
<td>3 (0.1%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>No</td>
<td>5287 (99.7%)</td>
<td>6080 (99.9%)</td>
<td>6085 (99.9%)</td>
<td></td>
</tr>
<tr>
<td>N/A (stillbirth)</td>
<td>156</td>
<td>163</td>
<td>210</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Eyes treated</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>17 (0.3%)</td>
<td>611 (10.0%)</td>
<td>1102 (18.1%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>No</td>
<td>5285 (99.7%)</td>
<td>5473 (90.0%)</td>
<td>4985 (81.9%)</td>
<td></td>
</tr>
<tr>
<td>N/A (stillbirth)</td>
<td>156</td>
<td>163</td>
<td>210</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Vitamin K</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>180 (3.4%)</td>
<td>867 (14.3%)</td>
<td>1317 (21.6%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>No</td>
<td>5122 (96.6%)</td>
<td>5217 (85.8%)</td>
<td>4771 (78.4%)</td>
<td></td>
</tr>
<tr>
<td>N/A (stillbirth)</td>
<td>156</td>
<td>163</td>
<td>210</td>
<td></td>
</tr>
</tbody>
</table>

**Keywords**: Barriers to Clinical Care, Essential Care for Every Baby, Helping Babies Breathe, Knowledge Transfer, Newborn Education Programs
HIGH INCIDENCE OF NEONATAL JAUNDICE AT THE GEORGETOWN PUBLIC HOSPITAL CORPORATION (GPHC), GUYANA, SOUTH AMERICA
Winsome Scott-Pearson¹, Leif Nelin², Seepersaud Chatterdeo¹
¹Paediatrics, Georgetown Public Hospital Corporation, Georgetown, Guyana, ²Neonatology, Nationwide Children's Hospital, Ohio, United States

Background and aims: Neonatal jaundice is one of the most common conditions requiring medical intervention. When significant hyperbilirubinemia is not detected and treated newborns can develop severe morbidity and mortality. GPHC is the national referral hospital for Guyana.

Methods: Prospective review of all neonates diagnosed with clinically significant jaundice (CSJ), defined as requiring medical intervention, between 4/1/2014 and 7/18/2014.

Results: CSJ occurred in 9% (163) of all live-births (1,675) at GPHC. Maternal ethnicity was 42% African descent and 22% East Indian descent. Jaundice was detected between 24 and 48 hours in 50% of patients. Over 86% of patients were term or late-preterm and 51% were exclusively breast-fed. Transcutaneous bilirubin was used to identify jaundice in 96% patients. The aetiology was ABO incompatibility 29%, sepsis 28%, physiologic jaundice 13%, Rh incompatibility 4%, and no identified cause 31%. Phototherapy was used for all patients. 47% remained on the well baby unit after diagnosis. 44% of infants were discharged with follow-up, 8 were readmitted for jaundice. 4 infants died from causes related to bilirubin encephalopathy.

Conclusions: These findings demonstrate a high incidence of CSJ with appreciable morbidities and mortality at GPHC. Follow-up of discharged patients is inadequate. These data can be used to design rational protocols for newborns with CSJ in Guyana.

Keywords: jaundice, neonatal hyperbilirubinemia
HOME CARE FOR ANTIBIOTIC THERAPY IN THE MANAGEMENT OF MATERNAL-FETAL INFECTION: ACTION RESEARCH EXAMPLE

Mohammed Amine Radouani¹, Hassan Aguenou², Mustapha Mrabet³, Amina Barkat⁴

¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’EnfantsEquipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, , université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie , Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

**Background and aims:** Given the progress in medical care in neonatology, the development of neonatal medicine evaluation techniques and management of difficulties in our Moroccan context, the need to increase the alternative structures for complete hospitalization (CH) in this discipline, is clear. The aim is to assess the economic and neonatal outcomes of neonatal infection in case of further outpatient care.

**Methods:** This is a prospective, single-center including newborns hospitalized for infection between 1 January 2011 and 31 December 2013. Exclusion criteria were respiratory distress, birth defects, direct admission neonatal resuscitation.

**Results:** The mean CRP at admission was 35.12mg / L +/- 3.5. The average duration of the PRM was 9.66 +/- 57.7 hours. The examination at the end of treatment was without abnormalities in 89.2% of cases. CRP control was below 6 mg / l in 48% of cases. The evolution of life on day 28 was favorable in 100% of cases. The average length of hospital treatment was 2.87 +/- 1.145 days; the average duration of treatment as outpatients was 2.74 +/- 1.31 days. 100% of newborns received treatment by parenteral perfusion according the protocol of the center. The average number of hospital days per patient spared protocol averaged 3.21 +/- 0.78 days. The average amount saved per patient was 82.65 +/- 5.51 Euros. Total amount saved over three years was 83,000 Euros.

**Conclusions:** The partial hospitalization seems possible for infected newborns without aggravating their illness. It also contributes significantly to the health economy.

**Keywords:** None
HUMAN ALBUMIN INFUSIONS IN NEONATES WITH GASTROSCHISIS IN A TERTIARY GOVERNMENT HOSPITAL: PRACTICES AND OUTCOMES

Kris Lodrono*, Aurora Libadia

1Paediatrics, University of the Philippines Philippine General Hospital, Manila, Philippines

Background and aims: The varying conclusions regarding the utility of albumin in improving outcomes have precluded its use in gastroschisis. This study aimed to determine the association of albumin infusion and mortality among neonates with gastroschisis admitted in a tertiary government hospital.

Methods: This was a retrospective cohort study. A total of 39 records were reviewed and baseline characteristics described. An association between albumin infusion status and each were described: length of hospital stay, incidence of at least one complication and mortality.

Results: Majority had low birth weights, were early term births to young mothers, underwent two-stage repair, had hypoalbuminemia, and had postoperative albumin infusions. Significant differences were noted between neonates given albumin and those who were not given albumin in terms of hospital stay (median Pearson Chi p value 0.027) and the incidence of at least one complication (crude OR 13.2, 95%CI 1.25 – 633.87). There is no significant difference in terms of mortality (crude OR 0.24, 95%CI 0.005 – 2.58).

Conclusions: Human albumin infusion was significantly associated with increased length of hospital stay and higher incidence of at least 1 complication, but with no significant decrease in mortality. However, the small number of data limits further analysis for confounders and modifiers. Larger prospective studies are recommended to further describe these associations.

Keywords: albumin, gastroschisis
IDIOPATHIC SPONTANEOUS INTESTINAL PERFORATION: A DISTINCT CLINICAL ENTITY FROM NECROTIZING ENTEROCOLITIS: A CASE REPORT.

Ejiro Ogonor* 1 on behalf of Prof Augustine Omoigberale
1Childhealth and Paediatrics, University of Benin Teaching Hospital, Benin City, Nigeria

Background and aims: Idiopathic Spontaneous intestinal perforation (ISIP), a close differential of necrotizing enterocolitis(NEC), has a rare occurrence but however it is the second most common cause of neonatal intestinal perforation

This is to show ISIP may mimic NEC in its pattern pf presentation.

Methods: We report a case of ISIP in a male newborn admitted into the Neonatal Unit of University of Benin Teaching Hospital. Benin City. Nigeria.

Results: Abdominal X ray which showed free air under the anterior abdominal wall(pneumoperitoneum), dilated bowel loops, thickened bowel wall with no evidence of pneumatosisintestinalis. Findings at surgery include meconium stained peritoneal fluid, three intestinal perforations(one in the sigmoid colon and two were 8cm from the ileo-cecal junction) and no evidence of necrotic intestinal tissue segment.

Conclusions: ISIP is a distinct clinical entity from NEC, and thus this differentiation is important because of the management and outcome.

Keywords: necrotizing enterocolitis, PERFORATION
IMPACT OF A NEW ORGANIZATION ON THE TREATMENT OF NEWBORNS IN A MOROCCAN NEONATAL CARE UNIT

Mohammed Amine Radouani, Hassan Aguenaou, Mustapha Mrabet, Amina Barkat

Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’Enfants Équipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Unité mixte de recherche en Nutrition et alimentation URAC 39, université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie, Université Mohamed V, Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: Countries can reduce their neonatal and infant mortality rates by improving the quality of management’s neonatal care units. Experience from developed and low- and middle-income countries has clearly shown that appropriate care, can substantially reduce mortality. The aim is to evaluate if the readmission rates of newborns treated in our unit has been affected by the introduction of new protocols.

Methods: Two groups were compared: Group A: newborns readmitted during the period from January 2010 to May 2011, Group B: newborns readmitted during the period from June 2011 until December 2012. Epidemiological data and settings of rehospitalization were collected on a standardized form, the reasons for rehospitalization, and evolution

Results: 105 were readmitted during the first four months of life, the rate of readmission was 1.8%. The difference is not significant between the two periods. The main reasons for readmission are nosocomial infection in 77% and 65% of premature groups A and B respectively, feeding difficulties with dehydration and weight loss, and viral infections in 31% and 21% of premature groups A and B respectively. The death rate was reduced in premature infants in group B (5.8%) compared to preterms of group A (23%).

Conclusions: In our study the introduction of a new protocol support has a considerable gain in the number of patients treated, and the mortality reduction without affecting the rates of rehospitalisation

Keywords: None
IMPACT OF OF A SUPPORT COUNSELLING IN EXCLUSIVE BREASTFEEDING AT THE AGE OF 6 MONTHS
Mohammed Amine Radouani* 1, Hassan Aouenaou2, Mustapha Mrabet3, Amina Barkat4
1Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’EnfantsEquipe de recherche en santé et nutrition du couple mère enfant , Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, 2Unité mixte de recherche en Nutrition et alimentation URAC 39, , université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, 3Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie , Université Mohamed V, 4Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: Exclusive breastfeeding up to 6 months is recommended worldwide as the most optimal feeding for all children. The WHO general assembly (World Health Organization) recommended in May 2001, exclusive breastfeeding during the 6 first month of life and continued breastfeeding up to the age of 2 years or more depending on the desire of the mother.

The aim of the study is to show that the use of a support counseling in breastfeeding can increase its duration.

Methods: Comparative prospective study from November 2012 to April 2013 on 400 women who delivered at the maternity Souissi Rabat. Divided into two groups one of which received support counseling AM. Moms We followed for a period of 6 months. The primary outcome studied was breastfeeding rates.

Results: The average duration of exclusive breastfeeding was 4 months and half against 3 months in the control group.
At a postnatal week, the rate was 76% against 11.5% in the second group with a significant difference, p = 0.00, the additional milk was given in 16% against 31% in the control group.
A6 month breastfeeding rate was 79% against 58% in the control group (P0.00), with an exclusive breastfeeding rate of 58% in the study group and 19% in the control group (p = 0.000) .36% of women gave formula milk versus 63% in the control group

Conclusions: Support counselling can have an impact on the duration of breastfeeding by increasing the duration and especially the duration of exclusive breastfeeding.

Keywords: None
IMPLEMENTING KMC IN SNCU: STUDY OF 500 LBW BABIES IN DH

Yadaiah Damera* 1 and SPECIAL NEWBORN CARE UNIT, DISTRICT HQRS HOSPITAL, NALGONDA, TELANGANA, INDIA

1SPECIAL NEWBORN CARE UNIT(SNCU), DISTRICT GOVT HOSPITAL, NALGONDA, TELANGANA, NALGONDA, India

Background and aims: AIM: To evaluate the safety, feasibility and efficacy of KANGAROOMOTHERCARE in LBW babies.

Background: In order to reduce NMR, Govt of INDIA with the help of UNICEF is strengthening FBNC through setting up SNCU in all districts. The KMC ward at Nalgonda established by MOH as a pilot project. This study is a largest analysis of KMC to LBW babies in any District Hospital

Methods: All LBW <1.8KG were admitted to KMC ward, they were on spoon feeds or breast feeds and did not require oxygen or IV fluids, attended by the mother under the supervision of staff nurse. KMC ward consists of 8 beds and 4 reclining chairs, breast pump, sterilizer, and a demarcated area to clean utensils. Mothers give KMC in KMC gowns. KMC was also done by father and other family members. Ours is a baby friendly hospital we follow exclusive breast feeding, either by DBF or with EBM. IEC material of KMC kept in the Unit. Discharge Criteria - weight gain for 3 successive days and weight >1.5kg. Analysed the following parameters for the babies who were put on KMC - weight on admission & discharge, breast feeding compliance, sepsis incidence, comorbidities and weight on follow up

Results: Duration of NICU stay before KMC- 9.8 days
Mean duration of KMC- 14.3 days
Mean wt. at starting KMC- 1.2KG
Mean wt. at discharge - 1.7KG
Wt. gain/kg/day- 16mg
Mortality - Nil
Sepsis - 8 (3.6%)

Conclusions: CONCLUSION: KMC should be implemented as a policy for care of LBW at all new born units.

Keywords: feasibility and efficacy of KMC in LBW babies
Improving Breast Feeding Practices Among Mothers of Infants Admitted in a Neonatal Intensive Care Unit in New Delhi, India: A Quality Improvement Initiative

Meena Joshi, Poonam Joshi, Jagjit Dalal, Anu Thukral, Ashok Kumar Deorari

PEDIATRICS, College of Nursing, All India Institute of Medical Sciences, NEW DELHI, India

Background and Aims: Breast milk (BM) is the first & the best food for infants. The prevalence of exclusive breastfeeding (EBF) is however far from optimal. The factors associated with low prevalence of EBF include poor early lactation success amongst others. A problem was identified related to EBF practices of mothers in the NICU who started expressing milk only after day 3 of delivery. We aimed to increase the proportion of BM intake in admitted neonates on day 1 from 5% (baseline) to 30% over a timeline of six weeks.

Methods: Baseline data was collected among eight postnatal mothers-newborn dyads over one week. The barriers to BM expression were identified. A team was constituted to look into the problem. We used three main measures to guide our improvement work- frequency of expression of milk, amount of milk expression in the first week & proportion of babies who had EBF on day 7 of life.

Results: The identified problems were addressed. Comprehensive postnatal counseling (CPNC) was done for next five mothers & their BF support was streamlined. The effect of CPNC and teamwork was discussed every day, feedback given & adjustments were made (Plan-do-study-act cycle). The amount of expressed BM (EBM) after the QI initiative increased to 50% (on day 1) in first week leading to improvement in intake of BM by neonates on day 7 from 1/8 (12.5%) to 3/5 (60%) with increased frequency of expression of BM including night. Nearly 83% of the babies were being EBF (at 1 week) 4 weeks after starting initiative.

Conclusions: A simple and feasible QI initiative lead to improved breast milk output in mothers of admitted neonates.

Keywords: breastfeeding, neonate, Quality Improvement
INCREASING MATERNAL BODY MASS INDEX DURING PREGNANCY INCREASES NEONATAL INTENSIVE CARE UNIT ADMISSION IN NEAR AND FULL-TERM INFANTS

Debbie Suk¹, Taehee Kwak¹, Samantha VanHorn², Nayaab Khawar¹, Carolyn Salafia¹,³, Pramod Narula¹
¹Pediatrics, ²New York Methodist Hospital, Brooklyn, United States, ³Pathology, New York Methodist Hospital, Brooklyn, United States

Background and aims: Obesity during pregnancy adversely affects not only the mother, but also the developing fetus and newborn. The objective of this study was to evaluate the association between maternal BMI (mBMI) and NICU admission, and to analyze possible confounders. Gestational diabetes mellitus (DM), hypertension (HT), and pre-eclampsia (PEC) are more common in obese mothers, as is increased obesity among non-Caucasians.

Methods: Using a retrospective cohort design, 1736 mothers and singletons ≥35 weeks’ gestation were analyzed for mBMI, race, diabetes (DM), hypertension (HT), pre-eclampsia (PEC), need for NICU care, and admit diagnosis.

Results: NICU admission was significantly associated with obesity. Comparing mBMI<30 vs. mBMI≥30, OR 1.39 (p=0.045); OR increased to 1.76 (p=0.006) vs. mBMI≥35. DM, HT, and PEC was significantly associated with mBMI, however NICU admission was not correlated with these co-morbidities. Controlling for neonatal hypoglycemia (NH) as the admit diagnosis, there was no mBMI-NICU association. NH rate increased in higher mBMI groups, independent of DM. NICU admission and mBMI was significant in Caucasians vs. borderline significance in African-Americans (p=0.035 vs. p=0.05).

Conclusions: There is a significant association between higher mBMI groups and NICU admissions independent of co-morbidities. As NH eliminates this association, there may be a pre-clinical diabetic pathology in obese mothers. Despite increased percentage of non-whites in higher mBMI groups, African-American race is not a significant contributor in increased NICU admissions in this cohort.

Keywords: maternal obesity, neonatal hypoglycemia, NICU
INFLUENCE OF MODE OF DELIVERY ON THE STRESS RESPONSE IN NEONATES: A MOROCCAN STUDY

Mohammed Amine Radouani¹, Hassan Aguenaou², Mustapha Mrabet³, Amina Barkat⁴

¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie, Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: The finding that neonates from an instrumented delivery are difficult consolables led to several studies on the effects of mode of delivery on the stress response at birth and a few months later. The objective of this study was to analyze the response to stress assisted infants born vaginally compared with those born by cesarean programmed at birth to 15 days and 2 months of life.

Methods: The methodology used was based on: 1- A neonatal analysis of cortisol in the blood of the umbilical artery by Radio-Immuno-Assay, 2. At the age of 15 days and 2 months after the evaluation of the intensity of the pain response to a vaccine act using DAN scores.

Results: The average values of cortisol were 403.4 nmol / L ± 260.90 for bass tracks and 117.1 ± 63.90 for caesarean sections. The difference was statistically significant (p <0.00001). The results of the second part showed that there are significant differences by comparing post-vaccination pain scores as well after BCG at 15 days of life, after Infanrix HIB polio at 2 months of life. p were respectively 0.016 to 15 days of life and 0.0001 to two months.

Conclusions: Newborns extracted vaginally had experienced such stress at birth than their immediate response to stress is significantly higher than in those born by high way before the beginning of work and their response to pain is more intense 15 days and two months of life

Keywords: None
INFLUENCE OF PERINATAL FACTORS ON HEPCIDIN PRODUCTION IN LOW-BIRTH-WEIGHT INFANTS

Kenji Ichinomiya1, Kenichi Maruyama1, Takahiro Inoue1, Aya Koizumi1, Fumitaka Inoue1, Yu Yamazaki1, Mariko Nakao1, Hirokazu Arakawa2

1Neonatology, Gunma Children’s Medical Center, 2Pediatrics, Gunma University Graduate School of Medicine, Gunma, Japan

Background and aims: The iron-regulating hormone hepcidin has not been assessed in low-birth-weight infants (LBWIs), who are vulnerable to iron imbalance. The aim of this study was to investigate the influence of perinatal factors on hepcidin production in LBWIs.

Methods: Serum hepcidin-25 (Hep25) levels were measured by LC-MS/MS in umbilical cord blood samples from 92 LBWIs.

Results: The median Hep25 concentration was 7.3 (interquartile range: 2.85–16.38) ng/mL. Log(Hep25) was positively correlated with log(ferritin) (r = 0.696, P < 0.001), lactate (r = −0.236, P = 0.034), and umbilical artery pH (r = 0.221, P = 0.045), but not with serum iron or hemoglobin. Log(Hep25) was also significantly correlated with birth weight (r = 0.229, P = 0.028). Log(Hep25) was greater in infants with chorioamnionitis and infants born vaginally, and was lower in infants born to mothers with pregnancy-induced hypertension (PIH), than in infants without the respective characteristics. Multiple linear regression analysis confirmed that birth weight, chorioamnionitis, and PIH were independently associated with log(Hep25).

Conclusions: Birth weight, chorioamnionitis or PIH were associated with Hep25 concentrations, suggesting that immaturity, inflammation, or hypoxia are important perinatal factors that might affect hepcidin production in LBWIs.

Keywords: cord blood, hepcidin, hypoxia, inflammation, iron, premature infant
INFLUENCE OF THE TYPE OF MECHANICAL VENTILATION ON THE REGIONAL CEREBRAL OXYGENATION IN NEONATES
Aksana Svirskaya* 1, Dzmitry Sankavets1
1NICU, National Research Centre Mother and Child, Minsk, Belarus

Background and aims: Neonates with severe respiratory disorders often are mechanically ventilated. Use of high mean airway pressure may have adverse effect on the cerebral hemodynamics. However, the exact effect of high-frequency ventilation (HFV) and conventional mechanical ventilation (CMV) on regional oxygenation and extraction in neonates remains unknown. The aim of this study is to evaluate the effects of different types of mechanical ventilation (MV) on regional cerebral oxygen saturation (crSO₂) and cerebral fractional tissue oxygen extraction (cFTOE) using near infrared spectroscopy (NIRS).

Methods: In this prospective observational study preterm and term neonates were included. The crSO₂ was measured by NIRS with the INVOS 5100C. The NIRS sensor was applied in the center of the forehead. Cerebral NIRS was used every 4 hours during first 96 hours of mechanical ventilation. cFTOE was calculated from SpO₂ and crSO₂.

Results: A total of 61 neonates (27 term/34 preterm) with a mean GA of 36 [34-38] weeks and birth weight median of 3090 grams [2370-3480] were enrolled excluding neonates who had any major congenital anomaly (7) or needed a red cell transfusions (7). We found no statistically significant difference in the crSO₂ between different ventilation types. Neonates receiving CMV had a significant lower cFTOE compared to infants on HFV (0,10 vs 0,22, p=0,02) on day four after initiation ventilation.

Conclusions: We conclude that the type of MV has no influence on the crSO₂. However neonates received HFV had a significant higher cFTOE compared to neonates received CMV.

Keywords: mechanical ventilation, near infrared spectroscopy, neonates, regional cerebral oxygenation
INTIMATE PARTNER VIOLENCE IN PREGNANCY: A DOUBLE TRAGEDY

Amsa Mairami¹, Lamidi Audu¹, Lauretta Mshelia¹, Omotayo Adesanya¹
¹Paediatrics Department, National Hospital Abuja, FCT, Nigeria

Background and aims: Intimate partner violence (IPV) especially in pregnancy is a major public health problem and violates the fundamental human rights of women and fetuses. We present this case to highlight some effects of IPV in pregnancy on the unborn child.

Methods: Baby C was delivered via an emergency lower segment caesarean section under general anesthesia at a gestational age of 34 weeks with APGAR scores of 3¹ 4⁵ 5¹⁰ and birth weight of 2.35kg. Mother is a 24 year old P₁ lady that was rushed to the emergency room with a penetrating abdominal injury of 90mins duration. It was sustained during a brawl with her partner who subsequently stabbed her with a knife in multiple places and also kicked her all over the body. She presented with eviscerated omentum from her gravid abdomen as well as lacerations to her forehead and fingers. She had emergency exploratory laparotomy by a team of surgeons and gynecologists with the neonatologist in attendance and was delivered of a live preterm baby, who required bag and mask ventilation for about 15mins. Post resuscitation, a 5x3cm laceration on his left gluteus was noticed which was sutured immediately.

Results: Baby was subsequently admitted into the neonatal intensive care unit and managed for perinatal asphyxia/HIE 1 with stab wound injury. He received tetanus toxoid, antibiotics and other supportive care and was discharged to the mother after 13 days by which time she had recuperated and was successfully breastfeeding.

Conclusions: The fetus, and consequently mother are a vulnerable duo without the added effects of violence.

Keywords: Effects, Intimate Partner Violence, Unborn Baby
Neonatology

INVESTIGATION OF FOOT LENGTH, CHEST CIRCUMFERENCE, AND MID UPPER ARM CIRCUMFERENCE AS TOOLS TO PREDICT NEONATAL MORTALITY AND IDENTIFY SMALL NEWBORNS IN ETHIOPIA

Netsanet Workneh¹, Melkamu Berhane¹, Tsinuel Girma¹, Alemseged Abdissa², Ruth Lim³, Katherine Lee⁴, Fiona Russell⁵, ⁶

¹Department of Pediatrics and child health, ²Department of Medical Laboratory Sciences and Pathology, Jimma University, Jimma, Ethiopia, ³Murdoch Childrens Research Institute, Royal Children’s Hospital, Melbourne, ⁴Murdoch Childrens Research Institute, The Royal Children's Hospital, Melbourne, ⁵Murdoch Childrens Research Institute, The Royal Children’s Hospital, ⁶Department of Pediatrics, The University of Melbourne, Melbourne, Australia

Background and aims: Complications from prematurity and low birthweight (LBW) are the commonest cause of mortality in newborns. In resource-limited settings, tools to identify LBW and premature newborns are often not available. The aim of this study is to identify a health metric to identify those small newborns at higher risk of death. We describe the predictive value of foot length, chest circumference, and mid-upper arm circumference (MUAC) taken <24 hours of birth for predicting mortality in the first six weeks of life and identifying LBW and/or preterm newborns in Ethiopia.

Methods: A prospective observational study is underway at Jimma University Hospital, Ethiopia. Newborns <24 hours old have anthropometric measurements, and a gestational age assessment within 24 hours of birth. Newborns with obvious congenital anomalies were excluded. Outcomes are recorded when newborn reaches four to six weeks of age.

Results: 855 newborns have been recruited so far; foot length, chest circumference, and MUAC were found to be highly predictive of LBW with sensitivities (95% CI) of 81.8 (73.8, 88.2), 86.8 (79.4,92.2), and 81.0 (72.9,87.6), while the specificities (95% CI) of each measurement were 75.8 (72.3,79), 94.1 (92,95.8), and 91.8 (89.5,93.8), respectively. The optimal cut-points for measurements within 24 h of birth indicating LBW were ≤7.6cm for foot length; ≤30.0cm for chest circumference; and ≤ 9.5cm for MUAC.

Conclusions: Interim analyses suggest all anthropometric measurements taken within 24 h of birth were good predictors of LBW. Predictors of mortality and prematurity will be presented at the meeting.

Keywords: LBW, tools to predict neonatal outcome
INVESTIGATION OF LOW BIRTH-WEIGHT NEWBORNS (FROM GENERAL-VOLOS HOSPITAL) TRANSFERRED TO THE NEAREST TERTIARY NEONATE INTENSIVE CARE CLINIC.

Anastasia Anastassiou-Katsiardani 1, Kalliopi-Penelope Giovanetto 2, Konstantinos Katsiardanis 2, Aggeliki Gerovassili 3, Margarita Boudrami 4, Maria Bissa 4, Stavroula Gakikou 4, Dimitra Stamou 5, Kyriaki Velali 6, Maria Gianniki 6, Anestis Moschos 5, Lampros Katsiardanis 7, Apostolos Plakopoulos 5

1 Achillopouleio General Hospital, Volos, Greece, 2 Pediatric and Maternal Clinic, Achillopouleio General Hospital, Volos, 3 EFYKE, GENETIC IST, LARISA, 4 Pediatric Clinic-PD, 5 Maternal Clinic, 6 Pediatric Clinic, 7 EFYKE, Achillopouleio General Hospital, Volos, Greece

Background and aims: Premature newborns, for some reasons come very early in the world (mainly related to the mother's health problems). Aim: To examine the frequency of birth and neonatal course with (Birth-Weight) BW <1400gr, born during a period (2012-2015), compared with pre-perinatal and other factors and in relation to the mother's health history.

Methods: Electronic archival and printed database of the Preterm Department (PD)/Pediatric clinic.

Results: During a 3 year-period, a total of 10 premature infants were born from 9 women (1 twin pregnancy). One of them died in 2012 just after birth. The remaining 9 (6 males and 3 females), 6 Greek children and 3 foreign, referred to the nearest Neonatal Intensive Care Unit (NICU), of Larissa, during their first hours of birth, Gestational age(GA): (24.5-31 weeks (w). One of them (GA: 27w) was referred from Larissa NICU, to Thessaloniki. The average BW was 1099gr (795gr-1390gr). 621 infants (253,206,162) out of the total 745, 683, 676 births respectively (2012, 2013, 20140, were referred for treatment in our Hospital PD. In total 116 newborns were referred to Tertiary Hospital (TH), due to prematurity, or other severe pre-perinatal problem of which 9 are the sample population of this study, 7.5% of the total number of referrals to TH (1.4% of the number of referrals for hospitalization in the PD of our hospital). All newborns took surfactant and entered in CPAP.

Conclusions: All newborns left the NICU, healthy after reaching BW> 2000Kgr, and finished complete Laboratory testing, ( while their psychomotor verbal evolution is monitored and followed-up till now).

Keywords: incu, Low birth weight, Premature newborn
IS INITIATING RESUSCITATION WITH 21% OXYGEN, INTERMEDIATE OXYGEN CONCENTRATION AND 100% OXYGEN ASSOCIATED WITH NEURODEVELOPMENTAL OUTCOMES AT 18-24 MONTHS CORRECTED AGE IN VERY PRETERM INFANTS?

Amuchou Soraisham1, Yacob Rabi1, Nalini Singhal1, Anne Synnes2, Junmin Yang3, Prakesh Shah3, Shoo Lee3, Abhay Lodha1 on behalf of Candian Neonatal Network and Candian Neonatal Followup Network

1Pediatrics, University of Calgary, Calgary, 2Pediatrics, University of British Columbia, Vancouver, 3Pediatrics, University of Toronto, Toronto, Canada

Background and aims: Neurodevelopmental (ND) outcomes of preterm infants resuscitated with different concentration of O2 at birth is lacking. The objective of the study is to compare the ND outcomes at 18-24 months CA of infants born <29 weeks who received 21% O2, intermediate O2 concentration or 100% O2 at the initiation of resuscitation.

Methods: Inborn infants born at <29 wks GA between January 2010 and September 2011, evaluated at Canadian Neonatal Follow Up Network at 18-24 months CA were examined. Mortality and ND outcomes were compared between infants who received 21%O2, intermediate O2 and 100%O2.

Results: Demographic factors and outcomes of 1543 included infants are reported in the table. Multivariable logistic regression analysis after controlling for GA, gender, SGA, antenatal steroid, maternal antibiotics and SNAP II score showed the odds of death or ND impairment was not different between either intermediate O2 (aOR 0.98,95%CI 0.74,1.29) or 100%O2(aOR 1.03,95% CI 0.79,1.36) compared to 21%O2 resuscitation.

Conclusions: Oxygen concentration at the initiation of resuscitation was not associated with composite outcome of death or neurodevelopmental impairment at 18-24 months CA in preterm infants <29 weeks GA. Mortality was higher in the 100% O2 group.

Keywords: Delivery room, Neonatal resuscitation, Neurodevelopmental outcome, Oxygen
KANGAROO MOTHER CARE- AN EXCELLENT ADJUNCT OF CARE IN MANAGING PRETERM LOW BIRTH WEIGHT INFANTS: BANGLADESH EXPERIENCE

Mohammad Abdul Mannan¹, Sharmin Afroze¹, Ismat Jahan¹, Sadeka C Moni¹, Mohammad Kamrul Hassan Shabuj¹, Arjun Chandra Dey¹, Sanjoy Kumer Dey¹, Mohammad Shahidullah¹
¹Neonatology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh

**Background and aims:** Kangaroo mother care (KMC) is a simple, cost effective method for improving survival of low birth weight (LBW) infants. Bangladesh Government has been taken initiatives to adopt KMC since 2012. To sustain this programme national guideline and training module on KMC have been formulated and training is going on in some districts and sub-districts of the country.

**Methods:** An observational study was carried out in 4 centers of Bangladesh over a period of one year. A total of 416 mother–infant pairs were enrolled for KMC. While providing KMC complications and their outcome were documented.

**Results:** During the study period, 32% of admitted preterm received KMC. Mean post natal age of starting KMC was 7±2.3 days, mean gestational age was 30±1.6 weeks and birth weight was 1300±232 g. Exclusive Breast Feeding was given in 100% babies. Mean post natal age of babies to achieve full feeding was 18±2.1 days and 64% regained their birth weight on 22±2.2 days. Common complications were maternal sweating (4%) and hypothermia (2%). Mean hospital stay was 26±3.6 days and 88% babies were discharged to home. Major barriers for KMC implementation were unavailability of mothers and less interest of family members.

**Conclusions:** KMC can be a safe alternative of incubator support for stable LBW babies and can be used in wide scale all over the country.

**Keywords:** None
MEDIUM-TERM OUTCOME IN A COHORT OF NEWBORNS WITH LOW BIRTH WEIGHT: ABOUT 255 CASES

Mohammed Amine Radouani1, Hassan Aguenou2, Mustapha Mrabet3, Amina Barkat4

1Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’EnfantsEquipe de recherche en santé et nutrition du couple mère enfant , Faculté de médecine et de pharmacie de Rabat- Université Mohammed V , Rabat, 2Unité mixte de recherche en Nutrition et alimentation URAC 39, , université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, 3Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie , Université Mohamed V, 4Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: Low birth weight is an important indicator of public health due to strong association between birth weight and mortality and morbidity.

The purpose is to analyze the factors involved in the growth, height and weight in a cohort of newborn low birth weight at 6 months

Methods: It’s a prospective and analytic cohort study over 6 months. We recruited all patients with low weight whatever their feeding mode. To the output of the service a health card was given to them with their growth curve. They are then reviewed each month until the age of 6 months. at each consultation are taken anthropometric measurements (weight, height and cranial perimeter, the information on their feeding and potential morbidities).

Results: The mean birth weight was 1691.49 grams + / - 372.5. The average size was 53.27 cm + / - 8.2 and the average cranial perimeter of 39.47 cm + / - 4.4. Most children are from disadvantaged backgrounds. 76% of patients received parenteral nutrition for 1 month. The exclusive breastfeeding was observed in 14 % of cases. The preterm infants have achieved faster normal growth corridors to the age of 6 months compared to those with delayed intrauterine growth. The prevalence of exclusive breastfeeding are low in both groups and join the national data. The majority of our newborns come from a disadvantaged background. Morbidities are dominated by infection and anemia.

Conclusions: Anthropometric parameters are better than those of the third world countries. The management of infants with delayed intrauterine growth is hardier. We need to accelerate the growth rate by a better nutritional care.
Keywords: None
Background and aims: Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage. The perception of pain among Health Care Workers (HCW) vary and knowledge does not match practice. We seek to ascertain the knowledge, attitude and practice of neonatal pain management (NPM) among health care workers in Nigeria.

Methods: Validated questionnaire was administered in January and February 2015 to consenting medical doctors at the National postgraduate medical college update course in Benin and also to nurses working in various newborn units. Information sought included their knowledge, perception and practice of NPM.

Results: 256 respondents, 228 (89.1%) from tertiary institutions. 91% doctors, 8.6% nurses. 98.3% doctors, 95% nurses perceived that newborn felt pain.

Aware of NPM: 67.1% Doctors; 57.1% nurses.

Teaching on NPM:
Non-classroom: 37.3% Doctors
Classroom: 16.7% Nurses

Knowledge of:
Definition of neonatal pain by Sensation, emotion and report of potential tissue damage > 80% Doctors, nurses

NPM with
Non Pharmacologic
50% > 60% doctors
> 70% nurses

Drugs
< 30% two groups

Perception of Procedures requiring NPM
Doctors:
Umbilical catheterization, Chest tube insertion, Lumber puncture and Circumcision:
57.9%, 93.3%, 82.4% and 93.3%

Quantification of pain

<30% both groups
< 60% both groups knew

the facial coding Scale, neonatal cry score

Conclusions: Perception of pain was high but did not match the knowledge of practice for NPM. Knowledge of NPM was poor. Formal education for NPM was lacking in the training of the health personnel

Keywords: Health Workers, Neonatal Pain Perception
NEUROPROTECTIVE EFFECT OF POSTNATAL MAGNESIUM SULFATE IN TERM NEWBORNS WITH PERINATAL ASPHYXIA: A META-ANALYSIS

Ana Katherina Rodriguez¹, Mark Benjamin Quiazon¹, Leonila Dans¹, Resti Ma. Bautista¹
¹Philippine General Hospital, Manila, Philippines

Background and aims: Perinatal asphyxia is a devastating phenomenon which may cause Hypoxic Ischemic Encephalopathy (HIE) in newborns. This study aims to analyze effect of magnesium sulfate in reducing incidence of short-term neurologic abnormalities in newborns with Hypoxic-Ischemic Encephalopathy; and to determine mortality and adverse outcomes related with magnesium sulfate.

Methods: MEDLINE, Cochrane and various search engines were searched. Two authors assessed quality and extracted data from the studies. Statistical analysis was done using random-effects model. Risk ratios with 95% CI were calculated.

Results: Four randomized controlled trials with general low risk of bias were included in the analysis. Magnesium sulfate was shown to decrease the number of patients with abnormalities in the following on discharge: neurologic examination (RR 0.32; 95% CI 0.17 - 0.62, I² 0%), oral feeding (RR 0.46, 95% CI 0.26-0.79, I² 0%), CT scan (RR 0.54, 95% CI 0.33-0.90, I² 0%), and EEG (RR 0.62; 95% CI 0.40 - 0.98, I² 0%). Reduction in mortality for magnesium sulfate compared to control was not significant. Apnea was the only reported adverse event which was observed in two patients in one study.

Conclusions: Magnesium sulfate was shown to significantly decrease short-term neurologic abnormalities in newborns with HIE, but has no significant effect on mortality. Apnea was the only observed adverse event.

Keywords: Hypoxic-Ischemic Encephalopathy, Magnesium Sulfate, PERINATAL ASPHYXIA
Background and aims: It is now possible from the 11th week of amenorrhea to prenatal diagnosis of fetal trisomy on a simple maternal blood taken without performing amniocentesis or trophoblast biopsy, the risk of miscarriage, even very low, is not zero. The aim is to investigate the feasibility of the introduction of non-invasive prenatal testing NPIT for trisomy 21 actually in Morocco.

Methods: Descriptive observational study including one hundred pregnant Moroccan women recruited during a prenatal consultation in a health center, a level 3 maternity or during a consultation in private obstetrician. We basically evaluated the socioeconomic profile of mothers, their knowledge of trisomy 21, perceptions of trisomy 21 and their knowledge and perceptions of prenatal screening for trisomy 21.

Results: Only 3.6% of women completed the screening for trisomy 21. All these women have taken a reflection time> 14 days. 45.5% of women do not know the definition of trisomy 21. Only 34.5% knew the benefits of prenatal testing. Women who reported being satisfied in case they were screening represent only 12.7%. 90.9% of women would not agree to have a Down syndrome newborn without having prenatal testing. 8.2% would accept it because of religious belief. The high level of education and urbanization would significantly associated here acceptability of screening tests.

Conclusions: The knowledge of Moroccan women on prenatal testing of T21 is very limited even less NTPI. Ethical, religious and socio-economic causes contribute little to widespread screening.

Keywords: None
Neonatology

OUTCOMES OF NON-BACTERAEMIA INFECTION OR COLONISATION WITH MULTIDRUG-RESISTANT (MDR) GRAM-NEGATIVE ENTEROBACTERIACEAE (GNE) IN THE NEONATAL INTENSIVE CARE UNIT (NICU)

Daphne Lu¹, Joseph Ting², Vanessa Paquette³, Horacio Osiovich¹, Simon Dobson¹, Kristopher T. Kang¹, Peter Tilley⁴, Ashley Roberts¹
¹Pediatrics, University of British Columbia, ²Pediatrics, ³Pharmacy, Univeristy of British Columbia, ⁴Pathology and Laboratory Medicine, University of British Columbia, Vancouver, Canada

Background and aims: Multidrug-resistant (MDR) Gram-negative Enterobacteriaceae (GNE) isolated has been on raising trend. Our objective is to compare the outcomes of non-bacteremia infection/colonization by MDR GNE vs. non-MDR GNE in the Neonatal Intensive Care Unit.

Methods: A retrospective review from Jan2011–Jul2014. MDR-GNE refers to strains resistant to all Penicillins & Cephalosporins.

Results: There were no differences in gestational age, birth weight, 5-min Apgar score, gender, mode of delivery or SNAP-II score in infants with and without MDR-GNE isolates. No differences were observed in their mortality and early neonatal outcomes (respiratory distress syndrome, patent ductus arteriosus, bronchopulmonary dysplasia, postnatal steroid use, necrotizing enterocolitis, laparotomy, retinopathy of prematurity≥stage3, duration of ventilation/parenteral nutrition and total antibiotic-days).

Conclusions: In our study, neonates with MDR GNE isolated from sites other than blood were not associated with an increase in mortality or adverse early neonatal outcomes. Further large-scale prospective studies are needed.

Image:
<table>
<thead>
<tr>
<th>Site</th>
<th>Total Isolates</th>
<th>MDR isolates, n</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>E. coli</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep wound swab</td>
<td>15</td>
<td>5 (33%)</td>
</tr>
<tr>
<td>Tracheal aspirate</td>
<td>16</td>
<td>1 (6.3%)</td>
</tr>
<tr>
<td>Urine</td>
<td>38</td>
<td>7 (18%)</td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
<td>3 (60%)</td>
</tr>
<tr>
<td><em>Klebsiella oxytoca</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep wound swab</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Tracheal aspirate</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Urine</td>
<td>14</td>
<td>1 (7%)</td>
</tr>
<tr>
<td><em>Klebsiella pneumoniae</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep wound swab</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Tracheal aspirate</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Urine</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

**Keywords:** Enterobacteriaceae, Multi-resistant organism, Neonate
PARENTAL DECISION MAKING FACTORS AND OUTCOMES REGARDING FETAL AND NEONATAL LETHAL ANOMALIES

Esther Lee¹, Simone Stenekes², Mike Harlos², ³

¹Pediatrics, University of British Columbia, Vancouver, ²Pediatric palliative service, Winnipeg Regional Health Authority, ³Family Medicine, University of Manitoba, Winnipeg, Canada

Background and aims: Perinatal palliative care is a relatively new field. This retrospective chart review provides demographics and outcomes following the diagnosis of a lethal anomaly prenatally in the province of Manitoba, Canada.

Methods: Criteria for a lethal anomaly included specific genetic conditions, renal and pulmonary diseases, central nervous system anomalies, and cardiac defects. A total of 176 patients met the study criteria.

Results: The majority of the lethal diagnoses were in the genetic and CNS categories. Over half (n=103, 58%) made the decision to terminate the pregnancy. When a live birth occurred (n=39) the mean length of survival was 13.5 days (1-156 days). There was an association between decreased interventions with a palliative care service involvement. Ethnicity and geographical factors were associated with the decision to terminate a pregnancy.

Conclusions: Our study demonstrated that the decision to terminate a pregnancy with a lethal anomaly was associated with ethnic backgrounds of the parents and an urban home location, of which the latter has not been reported in any other studies. There was an association between the involvement of palliative care and less interventions for the infant. This data supports the inclusion of a palliative care program as part of an interdisciplinary team that provides care to families who choose to carry a pregnancy with a lethal anomaly.

Keywords: congenital anomalies, decision making, end of life care, hospices, lethal life-threatening anomalies, palliative care, perinatal care, selective abortion
**Neonatology**

**PEGANUM HARMALA POISONING: ABOUT A CASE**

Mohammed Amine Radouani¹, Hassan Aguenaou², Mustapha Mrabet³, Amina Barkat⁴

¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’EnfantsEquipe de recherche en santé et nutrition du couple mère enfant , Faculté de médecine et de pharmacie de Rabat- Université Mohammed V , Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, , université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie , Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

**Background and aims:** Peganum Harmala, known under the name of Harmel, is one of traditional plants very used for diverse virtues, however a lot of people ignores side effects which are mortal especially in absence of antidote. The objective of this work is to illustrate the gravity of this plant to make sensitive the practitioners and the parents of its side effects.

**Methods:** It is about a clinical case about an infant hospitalized in neonatal resuscitation of child’s hospital in April 2012.

**Results:** It is about a 5-month-old infant who was admitted in a shock status with a respiratory distress syndrome. He had presented 4 days before its admission a cough with a bronchial congestion. He was been ventilated whith drugs and hepatic protector. The evolution 2 days later was marked by a clear improvement.

**Conclusions:** The poisoning in Harmel is an incident which is not rare especially in our country where the traditional medicine is still of current practice, and if this plant is known by its multiple virtues, we should not forget its even mortal and fatal side effects of which it is necessary to warn the population.

**Keywords:** None
Background and aims: Extrauterine growth restriction (EUGR) is a serious problem, meets in 60-100% of cases of premature birth around the world. The assessment of the nutritional status - a ratio of muscular and fatty tissues of body is important for understanding of adequacy of food. To study physical development, body composition of prematurely born children in 16 and 20 weeks of corrected age.

Methods: There were 27 patients born with extremely low birth weight (I group, n = 11), very low birth weight (II, n = 10), low birth weight (III, n =10). We carried out an anthropometry of body weight, body length, calculated body mass index. Body composition was assessed by air plethysmography - densitometry to evaluate the total body fat and lean tissue (PEA POD, LMi, USA).

Results: Children born with ELBW and VLBW, lagged behind in physical development at corrected age of 16 and 20 weeks’ - BMI was below 10 percentiles. Children born with LBW, had catch-up growth - BMI was between 25-75 percentiles. Body composition:% BFM (body fat mass) was less, respectively LBM%, (lean body mass) was greater at corrected age of 16 and 20 weeks.

Conclusions: Thus, the majority of children born with ELBW and VLBW are slow in physical development and have abnormalities in body composition at 16 and 20 weeks of corrected age. These children need a regular individual diet correction.

Image:
<table>
<thead>
<tr>
<th>Corrected age (weeks)</th>
<th>Median [25-75]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BW, grams</td>
</tr>
<tr>
<td></td>
<td>I</td>
</tr>
<tr>
<td>16</td>
<td>5220</td>
</tr>
<tr>
<td></td>
<td>[4424-5697]</td>
</tr>
<tr>
<td>20</td>
<td>5697</td>
</tr>
<tr>
<td></td>
<td>[5467-6140]</td>
</tr>
</tbody>
</table>

### Body composition

<table>
<thead>
<tr>
<th></th>
<th>% BFM</th>
<th>% LBM</th>
<th>LBM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td>16</td>
<td>16.1</td>
<td>21.1</td>
<td>23.3</td>
</tr>
<tr>
<td></td>
<td>[13.6-19.3]</td>
<td>[17.8-24.2]</td>
<td>[21.5-26.1]</td>
</tr>
<tr>
<td>20</td>
<td>14.9</td>
<td>16.5</td>
<td>23.2</td>
</tr>
<tr>
<td></td>
<td>[14.1-17.7]</td>
<td>[12.8-24.4]</td>
<td>[20.3-25.8]</td>
</tr>
</tbody>
</table>

**Keywords:** Body composition, extremely low birth weight, premature infant, very low birth weight
POST-TRAUMATIC SUBDURAL HEMATOMA IN A NEONATE: A CLINICAL CASE OF MEDICAL TREATMENT

Mohammed Amine Radouani¹, Hassan Aguenou², Mustapha Mrabet³, Amina Barkat⁴

¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’EnfantsEquipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, , université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie , Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: Subdural hematoma is a rare entity in the newborn, about a hundred cases have been reported in the literature. The etiology is often traumatic. We report a clinical case, which allows to highlight a particular developer mode and a strictly medical treatment with good evolution.

Methods: Newborn born by vacuum admitted for hypotonia. The exam noted ptosis of the right eye and a decrease in the active tonus in its entirety.

Results: Brain scans showed a subdural hematoma extended from the right hemisphere. Medical treatment was proposed. The outcome was favorable.

Conclusions: In case of neonatal ocular ptosis, research intracranial hemorrhage is urgent. A strictly medical treatment could be a successful alternative.

Keywords: None
PRACTICES OF MOTHERS AND HEALTH PROFESSIONALS REGARDING COMPLEMENTARY FEEDING IN TWELVE BASIC HEALTH CARE FACILITIES IN CASABLANCA, MOROCCO

Mohammed Amine Radouani¹, Hassan Aguenaou², Mustapha Mrabet³, Amina Barkat⁴

¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’EnfantsEquipe de recherche en santé et nutrition du couple mère enfant , Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, , université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie , Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: Complementary feeding of infants is an important step, both by nutritional changes it entails as it illustrates the maturation. This may explain the many prejudices and misconceptions that accompany it. The purpose of this study was to explore the knowledge, attitudes and practices of mothers and health professionals about complementary feeding.

Methods: It’s a cross sectional study with prospective data collection, based on semi-structured individual interviews conducted from April 1st to November 30th 2013. The population of the study included the mothers of infants aged 0 to 24 months, primiparous or not, who attended the twelve health centers

Results: 84.6% of these mothers did not receive any advice on food diversification, 97.4% have received no identification of breastfeeding problems in infants, 84.2% did not receive any necessary follow-up visit, and 97.8% had no idea about the frequency of breastfeeding during the night. For the category of children aged 6 to 24 months of age, 64.8% had complementary feeding at the age of 6 months, 74.6% had not received any advice on the conduct of dietary diversification and 89.8% have benefited from any of breastfeeding counseling.

Conclusions: Many shortcomings in knowledge and behavior at the level of basic public health institution remain to be filled for the promotion of breastfeeding and the gradual start-up of diversification, particularly in the area of communication between mothers and health professionals.

Keywords: None
PREDICTION OF SHORT-TERM MORBIDITY OF NEWBORN INFANTS WITH RISK FACTORS BY COMPUTER-BASED KINEMATIC ANALYSIS OF LIMB MOVEMENTS

Fırat Sarı¹, Betül Acunaş¹, Ülfet Vatansever¹, Rıdvan Duran¹, Nükhet Aladağ Çiftdemir¹
¹Pediatrics, Trakya University, Edirne, Turkey

Background and aims: Our aim was to determine whether newborn infants with different risk factors have different patterns of limb movements and exhibit different patterns of movements before and/or at onset of the development of a morbidity by using a more objective and quantitative method such as computer based kinematic analysis of limb movements by using image-processing technology in these infants.

Methods: Longitudinal study, prospectively collected data. Limb movements of a group of newborn infants with different risk factors followed up in our NICU from January 2015 to July 2015 and a healthy control group were recorded. Infants were further divided according to risk categories; mild, moderate and severe risk groups. SNAP-2 scores, Prechtl assessment of each risky infant were performed.

Results: Mean total limb movements per image, mean right hand, left hand, right and left foot movements per image were significantly lower in Group 1 than control group. There was a significant difference among risk groups; mean total limb movements decreased as the degree of risk status increased. As expected GMs increased as gestational age increased. Distance of the limb to the centrum (ksiphoid)/distance to the shoulders ratio was significantly higher in those infants in Group 1 and in those who developed new morbidity compared to Group 2.

Conclusions: Although assessment of limb movements by computer-based kinematic analysis seems to be useful in risk groups and maturation definition, it does not allow prediction of short term morbidity in newborn infants with risk factors.

Keywords: kinematic analysis, preterm infants, the qualitative assessment of general movements,
PREVALENCE OF GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY AMONG APPARENTLY HEALTHY NEWBORNS IN UNIVERSITY OF BENIN TEACHING HOSPITAL, BENIN CITY, NIGERIA.

Medupin Patricia1, Omoigberale Augustin2, Odunvbun Margaret2, Ewah-Odiase Rosemary3
1Paediatrics, FMC, Lokoja, 2Paediatrics, UBTH, Benin-City, 3Paediatrics, ISTH, Irrua, Nigeria

Background and aims:
Glucose-6-Phosphate Dehydrogenase Deficiency is a common, X-linked inherited disorder of the red blood cell. It has a global estimate of 400 million affected people with the highest prevalence in certain regions including tropical Africa.
AIM:
To determine the prevalence of Glucose-6-Phosphate Dehydrogenase Deficiency amongst apparently healthy newborns in University of Benin Teaching Hospital, Benin City.
Methods: One hundred and ninety five newborns who were apparently healthy were consecutively recruited and their Glucose-6-Phosphate Dehydrogenase status determined using the methaemoglobin reduction test.
Results:
A prevalence rate for Glucose-6-Phosphate Dehydrogenase Deficiency of 13.3% was computed with a gender specific prevalence of 13.9% and 12.8% for males and females respectively. The difference in gender specific prevalence was not statistically significant.
Conclusions:
In this study, Glucose-6-Phosphate Dehydrogenase deficiency was considerably not rare amongst the females, despite the fact that it is an X-linked disorder. This study therefore underscores the importance of routine screening of newborns for this enzymopathy irrespective of their gender.

Keywords: Glucose-6-phosphate dehydrogenase, newborns
REAL TIME ONLINE MONITORING SYSTEM FOR SICK NEWBORNS IN INDIA – MEASURING FOR ACCOUNTABILITY AND ACTION

Gagan Gupta¹, Rakesh Kumar², Yaron Wolman¹

¹UNICEF, ²Government of India, Ministry of Health, New Delhi, India

Background and aims: India has strengthened facility based newborn care by establishing Special Newborn Care Units (SNCUs) at district level with 650 SNCUs functional and 700,000 newborns treated annually. SNCUs contributed to a 20% reduction in neonatal mortality between 2008 and 2013, however credible data to track performance, ensure accountability and initiate actions was lacking.

Methods: UNICEF in partnership with Government developed an online monitoring system that records information related to care before and during birth, care in the SNCU, and send SMS reminders for follow up visits. The system provides real time data on 250 parameters (e.g., admission and mortality analysis, outcomes by weight and maturity, antibiotic usage, follow up). This helps SNCU staff, managers and policy makers to take targeted and timely actions.

Results: Currently 17 states and 450 SNCUs provide online data with 850,000 newborns enrolled. National scale up by 2016 will make it one of biggest real time database globally. The system has facilitated in prioritization of resources, introduction of new policies and human resource-related actions (including performance based incentives and additional staff), improved labour room care, reduced antibiotic usage and establishment of follow up. In Madhya Pradesh, mortality at one year of age decreased from 10% in 2010 to 2.5% in 2015.

Conclusions: Real time data is helping India to monitor performance, take timely actions, and ensure accountability for newborns. Scale up of such real time monitoring system nationally is feasible, and can facilitate development of a regional neonatal registry system.

Image:
THE RESULT

Scaled up in 13 states, covering 360 districts, with 650,000 newborns enrolled, this is now one of the largest online databases of small and sick newborns globally. The database will cover the whole of India by the end of 2015, with a simultaneous expansion into the private sector.

The system has helped generate evidence to formulate new policies, initiate HR-related actions like introducing performance-based incentives, prioritize investments on improvement of labor room care, reduce antibiotic usage, and establish follow-up systems. A scale-up in other countries is also feasible and can help to develop a global neonatal registry system.

THE ISSUE

India accounts for more than a quarter of the global newborn deaths, with 748,000 neonatal deaths taking place each year – the highest in the world.

To address this, India has focused on strengthening facility-based newborn care with Special New Born Care Units (SNCUs) set up at the district level and Newborn Stabilisation Units (NSUs) at the block level. This facility is linked with home visits and referrals by Accredited Social Health Activists (ASHA) workers focusing on both home births as well as community follow-up of newborns delivered in hospitals and those discharged from SNCUs.

Currently, 575 SNCUs are operational, treating 600,000 newborns each year and with an annual budget of more than 30 million USD. SNCUs contributed to a 20 per cent reduction in neonatal mortality between 2008 and 2013.

However, due to lack of credible data to track performance, there were problems in ensuring accountability and initiating action. In addition, there was no system for long-term follow-up of these babies after being discharged from the SNCUs, resulting in suboptimal outcomes for survival, growth and development.

THE SOLUTION

To address monitoring gaps and overcome long delays in collecting predilect data, UNICEF has developed an online system for the National Health Mission to monitor the performance of SNCUs and track newborns after discharge. This system records vital information on several parameters related to newborn care in SNCUs, care around delivery, and post-discharge follow-up. At the click of a mouse, the system provides real-time data for over 250 parameters such as admission profiles, outcomes by weight and maturity, antibiotic usage, and lost to follow-up.

The system is helping the SNCU staff, program managers, and policy makers take targeted and timely action. Follow-up after discharge is done for a period of one year with reminder SMSs sent to families and community workers. Real-time data is helping improve performance and ensure accountability. The necessary support for scale-up has been budgeted under the National Health Mission.
Keywords: Care of Small and Sick newborns, Facility based newborn care, Real Time Monitoring
Neonatology

RISK FACTORS AND EPIDEMIOLOGY OF NEURAL TUBE DEFECTS IN MOROCCO

Mohammed Amine Radouani, Hassan Aguenaou, Mustapha Mrabet, Amina Barkat

¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat, Université Mohammed V, Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, Université Ibn Tofaii-CESTEN; RDC-Nutrition AFRA/AIEA, Kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie, Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat, Université Mohammed V, Rabat, Morocco

Background and aims: Neural tube defects has a considerable importance because they can be prevented by supplementing Folic acid & Vitamin B12 during periconceptional period and fortification of staple foods. In Morocco, the Ministry of Health launched a national program for fortification of flour with folic acid. The purpose to evaluate the prevalence of neural tube defects after fortification.

Methods: This is a retrospective descriptive study at the National Reference Centre for Nutrition and Neonatology of the Children's Hospital of Rabat over 4 years. Data were identified from the registry of congenital malformations held at the perinatology unit.

Results: During the 4 years, 674 congenital malformations were identified. The neural tube defects account for 11.9%. Their annual prevalence decreased significantly from 21.78 in 2008 to 12.1 per 10,000 total births in 2011. The most common form was anencephaly (60%). Neural tube defects were isolated in 85% of cases and associated with other malformations in 15% of cases. 49.4% of infants with neural tube defects were female and 50.6% were male. Perinatal mortality in newborns with neural tube defects was 63.8% versus 25.2% in malformed newborns without neural tube defects.

Conclusions: The neural tube defects seem to be common after supplementing Folic acid & Vitamin B12 during periconceptional period in Morocco. Permanent epidemiological surveillance is needed to determine the true prevalence and risk factors in our context.

Keywords: None
RISK FACTORS FOR INTRACARDIAC THROMBOSIS WITH THE USE OF A CENTRAL VENOUS CATHETER IN CRITICALLY ILL NEONATES

Hector Jaime Gonzalez Cabello* on behalf of Ulloa-Ricardez A, Romero-Espinoza L, and Núñez-Enríquez JC

1NICU, HOSPITAL DE PEDIATRIA CMN IMSS, MEXICO CITY, Mexico

Background and aims: Newborns (NB) are at a high risk for thromboembolic events due to deficient clotting mechanisms, a small vascular diameter and concomitant diseases such as perinatal asphyxia, sepsis, dehydration and congenital cardiomyopathy, among others. It has been reported that 89% of thromboembolic events in neonates are associated with the use of central venous catheters (CVC) and that a subgroup of NB with intracardiac thrombosis (ICT) Aim: to identify risk factors for ICT-CVC in critically ill NB

Methods: Design: nested case control study. Population study: 43 cases with ICT and 43 controls paired by sex, gestational age, diagnosis was performed by a pediatric cardiologist who was unaware of this research. Statistic Analysis: frequencies and averages were calculated for qualitative variables, and bivariate analysis for the quantitative ones. The significative variables were introduced into the logistic regression model adjusted for sex, type of cardiomyopathy, low birth weight, prematurity and CVC stay(>14days)

Results: Regarding the site of ICT, the distribution was similar for thrombosis in the SVC and RA in 39.5%, most of the thrombi detected was measured less than 2 cm. Risk Factors identified: Installation technique of the CVC for venesection (OR 4.57), maternal history of pre-eclampsia (OR 3.31), diabetes gestational/mellitus (OR 17.54), threatened abortion (OR 16.86) and S. epidermidis infection (OR 7.37)

Conclusions: NB at high risk must be considered in a special way to prevent the development of ICT and/or to detect and treat them opportunely

Keywords: thrombosis, neonates, risk factors, critically ill
Neonatology

RISK FACTORS FOR NON-COMPLIANCE OF EXCLUSIVE BREASTFEEDING IN RABAT, MOROCCO

Mohammed Amine Radouani¹, Hassan Aguenou², Mustapha Mrabet³, Amina Barkat⁴

¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’EnfantsEquipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie, Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: Exclusive breastfeeding (EB) till six months of age is a simple and worldwide-accepted WHO recommendation that reduces morbidity and mortality in infants. The aim is to explore factors leading to non-compliance of EB in Morocco.

Methods: During October 2014, mothers attending an urban paediatric hospital in Rabat or a rural clinic in Benslimane with children older than 6 months were approached. Oral informed consent was provided and an interview on mother and child nutrition done. Logistic regression was used to determine independent risk factors for non-compliance of EB.

Results: A total of 235 women were recruited, 183 (78%) from the urban hospital. 163 (69%) referred having exclusively breastfed their children. Among those who did not, 67% referred lack of breast milk, 18% referred hospital admission during neonatal period as the reason for non-compliance, and 15% incompatibilities with their economic activity. Household monthly revenue was higher in the group of non-compliant (470 euros vs. 380 euros, p = 0.067). In the multivariate analysis, having delivered in a public hospital was independently associated with EB (OR 2.5, 95%CI 1.2-5.0). Counselling to encourage EB was not associated with EB compliance.

Conclusions: Efforts should be done to design more appropriate strategies to encourage EB among mothers in Rabat and outskirts, especially in the private sector, and to avoid interfering with EB in case of admission during neonatal period.

Keywords: None
Neonatology

RISK FACTORS FOR SEVERE HYPERBILIRUBINAEMIA IN LATE PRETERM AND TERM BABIES AT THE NATIONAL HOSPITAL ABUJA

Lamidi Audu 1, Amsa Mairami 1, Adekunle Otuneye 1, Lauretta Mshelia 1, Ramatu Mohammed-Nafi’u 1, Vincent Nwatah 1, Yewande Wey 1

1Paediatrics Department, National Hospital Abuja, FCT, Nigeria

Background and aims: Severe Neonatal hyperbilirubinaemia remains an important cause of neonatal admissions in Nigeria often giving rise to irreversible neurotoxicity in spite of global efforts to reduce the incidence of Kernicterus. Access to effective phototherapy is restricted to a few centers while EBT may occur too late to reverse Aute Bilirubin Enepalopaty.

Aim: To identify risk factors for severe neonatal jaundice in babies ≥34 week gestation at the national Hospital Abuja, Nigeria

Methods: Babies admitted into SCBU with jaundice from April 2014 to May 2015 were recruited into the study with parental consent. Socio-demographic information and history of common risk factors for neonatal jaundice as well as results of laboratory investigations were obtained for statistical analysis. The significance of associations between risk factors and severity of jaundice was determined statistically.

Results: 123 babies were seen, with an Inborn/Out born ratio of 1:2.3. Eighty two percent were term. Severe Jaundice accounted for 43(35%). The mean serum bilirubin level was 21.2(9.3), range=10mg/dl-56mg/dl. Over 50% of the babies had multiple primary risk factors. Among investigated secondary risk factors, late presentation, being out born (OR=0.164 95% CF=0.054-0.504) female gender (OR= 0.721 95% CF=0.494-1.053), vertex delivery and prematurity (OR=2.233 95% CF=1.051-4.740) were significantly associated with severe jaundice.

Conclusions: Female infants born per vagina outside our tertiary hospitals are at increased risk of severe hyperbilirubinaemia and delayed presentation enhances this risk

Keywords: None
SALIVA MYELOPEROXIDASE KINETIC PROPERTIES IN NEWBORN AT RISK OF SEPSIS WITH AND WITHOUT THE PRESENCE THIOCYANATE AS CO-SUBSTRATE

Ari Yunanto*1, Iskandar Hasan2, Eko Suhartono3
1Pediatric, Ulin General Hospital/Faculty of Medicine, Banjarmasin, 2Research Unit, Mutiara Bunda Mother and Child Hospital, Martapura, 3Medical Chemistry/Biochemistry, Faculty of Medicine, University of Lambung Mangkurat, Banjarmasin, Indonesia

Background and aims: The activation of myeloperoxidase (MPO) is considered to play a key role in neonatal sepsis (NS). MPO is usually considered as a catalyst of hypothiocyanous acid (HOSCN) formation with the presence of thiocyanate (SCN) as co-substrate, but it could also be considered as a catalyst of hydrogen peroxide (H2O2) removal. This study aimed to investigate the MPO kinetic properties during NS with and without the presence of SCN as co-substrate.

Methods: This study was performed in November-December 2015. Samples were collected from 15 newborns’ saliva at risk of sepsis (treatment group: T) and 15 from normal newborns’ saliva (control group: C). Inclusion criteria using ACOG Guidelines: 1 major criteria or 2 minor criteria for sepsis. Saliva samples from each group divided into two sub-groups for MPO kinetic properties analysis without the presence of SCN (T1; C1) and with the presence of SCN (T2; C2) as a co-substrate. Kinetics properties (Michaelis-Menten constant; Km) of MPO was analyzed using Lineweaver-Burk plot.

Results: Km value in T1 group (0,338) is bigger than C1 group (0,235), the value of Km in T2 group (0,149) is lower than T1 group (0,338). Without the presence of SCN, the affinity between H2O2 and MPO was decreased. Otherwise, the presence of SCN the affinity between MPO and H2O2 will increase.

Conclusions: The addition of SCN in saliva during NS condition could increase the affinity between MPO-H2O2-SCN complex. From this point of view, the presence of SCN changing the enzymatic reaction equilibrium to the right, which means induced the formation of HOSCN.

Keywords: myeloperoxidase, neonatal sepsis, thiocyanate
SENSITIVE ANALYSIS OF COENZYME Q10 IN NEONATAL SERUM BY LCEC AND APPLICATION TO STUDIES IN NEONATAL JAUNDICE

Peter Tang\textsuperscript{1}, Sharon Versoza\textsuperscript{2}

\textsuperscript{1}Pathology and Laboratory Medicine, \textsuperscript{2}Laboratory Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, United States

Background and aims: Hyperbilirubinemia can cause alterations in the membrane contents of phospholipids, which can render the cells more fragile. In a recent study, coenzyme Q10 was proposed as a potential etiopathogenic factor for neonatal jaundice. Coenzyme Q10 is an antioxidant and is carried mainly by lipoproteins in the circulation. It protects cells from free radicals and increases membrane stability of erythrocytes. Our aims were (1) to develop a sensitive method to measure coenzyme Q10 in a small amount of neonatal serum, and (2) to evaluate the correlation between serum bilirubin and coenzyme Q10 levels in jaundiced newborns.

Methods: Total of 172 jaundiced newborns with elevated bilirubin levels were included to the study. Total bilirubin levels were obtained at the time of examination in all newborns. Total bilirubin assay was performed using the Siemens Vista Analyzer. Total coenzyme Q10 level was measured by LCEC. A single dilution procedure was developed to measure total coenzyme Q10 in a small sample (25 µL).

Results: The sensitive method achieved a linear concentration range of 0.01-3 mg/L. The limit of detection was 0.005 mg/L. Both within-run and between-run precision were lower than 5%. A significant negative correlation between total bilirubin and total coenzyme Q10 levels was observed.

Conclusions: A sensitive analysis of coenzyme Q10 was developed for a small neonatal serum. Results indicate that increase in total coenzyme Q10 is correlated with a decrease in total bilirubin. Higher coenzyme Q10 level appeared to reduce the induced damage of erythrocytes from oxidative stress.

Image:
Keywords: Coenzyme Q10, Bilirubin
SERUM SELENIUM LEVELS IN FULL TERM NEONATES WITH HYPOXIC ISCHEMIC ENCEPHALOPATHY. CORRELATIONS WITH THEIR MATERNAL SERUM SELENIUM LEVELS.

Abdel-Azeem El-Mazary¹, Reem Abdel-Aziz¹, Ramadan Mahmoud², Mostafa El-Said³, Nashwa Mohamed¹
¹Pediatric, Minia University, ²Pediatric, Sohag University, Minia city, ³Clinical-Pathology, Minia University, Minia, Egypt

Background and aims: Perinatal hypoxic-ischemic encephalopathy is an important cause of brain injury and can result devastating consequences. Selenium is a constituent of the antioxidant enzyme Glutathione peroxidase and is vital to antioxidant defense. This study aimed to measure the serum selenium levels in full term neonates with HIE and their mothers and correlate between them and the severity of HIE.

Methods: the study included 60 full term neonates with HIE from January 2014 to February 2015 and twenty healthy full term neonates as controls. Complete blood count, renal and liver function tests and electrolytes and serum selenium levels were measured for them.

Results: neonates with HIE had significant lower serum selenium levels than normal healthy neonates. Significant negative correlations between serum selenium levels and the severity of HIE and base excess were present. There were no correlations between serum selenium levels and maternal serum selenium levels urea or creatinine levels.

Conclusions: neonates with HIE had lower serum selenium level than normal healthy neonates which is not dependent on the maternal serum selenium levels and was negatively correlated with the severity of HIE.

Keywords: HIE, Neonates, Selenium
STRESS MOTHER EXPERIENCE FOR PREMATURE BIRTH
Mohammed Amine Radouani¹, Hassan Aguenaou², Mustapha Mrabet³, Amina Barkat⁴
¹Service de médecine et réanimation néonatales, Centre National de Néonatologie et Nutrition, hôpital d’EnfantsEquipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, ²Unité mixte de recherche en Nutrition et alimentation URAC 39, université ibn tofail-CNESTEN; RDC-Nutrition AFRA/AIEA, kénitra, ³Unité pédagogique et de recherche en santé publique faculté de médecine et de pharmacie, Université Mohamed V, ⁴Centre National de Néonatologie et Nutrition, hôpital d’Enfants, Equipe de recherche en santé et nutrition du couple mère enfant, Faculté de médecine et de pharmacie de Rabat- Université Mohammed V, Rabat, Morocco

Background and aims: The main objective of this study is to approach the experience of these mothers in our Moroccan context by focusing on the analysis of the socio-cultural impact. The secondary objective is to determine the risk factors associated with feelings of psychological difficulties.

Methods: This is a prospective, descriptive and analytical study. 100 parturients were included in our study. Two groups of women were subsequently identified:
- group A with one or two light feelings (absent or mild psychological difficulty)
- group B with 3 or 4 medium or strong feelings (medium to strong psychological difficulty).
We analyzed two groups to determine the risk factors associated with psychological difficulties.

Results: Nine factors were significantly associated with moderate or intense psychological difficulty. A high level of instruction, well-monitored pregnancy, presence of a pathological obstetrical history and cesarean delivery, all these factors accentuate the intensity of the feelings experienced.
In multivariate analysis and after adjusting for factors studied, only the presence of pathological factors obstetrical history and the place of the child in the parental project are significant and therefore correlated with average or intense psychological difficulty.

Conclusions: It would have been interesting to consider primiparity of the mother, and the support of the father at birth and after, when returning home.

Keywords: None
STUDY ON THE FEASIBILITY OF DONOR HUMAN MILK BANKING IN NEONATAL INTENSIVE CARE UNIT OF SELECTED HOSPITALS IN ADDIS ABABA

Adane Abera*¹ and Mr. Mezemer Alemu, Dr.Dawd Gashu
¹Pediatrics, Addis Ababa University, Addis Ababa, Ethiopia

Background and aims: Premature and sick babies have significantly better outcomes when fed breast milk but some mothers cannot breastfeed for health and other reasons. On such condition, WHO recommends pasteurized donor human milk as the next best feeding option.

Aims: this study designed to generate preliminary information on the feasibility of establishing donor human milk banking

Methods: An institutional based descriptive cross sectional study was conducted to analyze the knowledge and attitude of mothers and health professional towards the use of pasteurized donor human milk banking. In addition, laboratory based research design was used to examine the microbiological safety.

Results: Small number of mothers (5%) ever heard about donor human milk banking. Only 20% of study mothers could accept feeding their baby donor human milk by physician prescription. Safety or fear of transfer of disease (85.1%) was the main factor for less number of breast milk recipient mothers from donor human milk banking. On the contrary, about two-third of participating mothers were willing to donate their breast milk if human milk banking will be established. 75% of health professionals believed that it is feasible to establish pasteurized donor human milk banking. In raw breast milk sample, total aerobic bacteria, Enterobacteriaceae, and Staphylococcus aureus were detected.

Conclusions: the present study showed the knowledge and attitude of mothers about pasteurized donor human milk was poor & weak. So public education about its benefit & safety for infants will improve the perception of society towards pasteurized donor human milk.

Keywords: breast milk, donor human milk, low birth weight, new born baby, pasteurized donor human milk banking, premature
THE EXPERIENCE OF FAMILY-CENTERED CARE IN THE NEONATAL INTENSIVE CARE UNIT OF A NEWLY ESTABLISHED GENERAL COMMUNITY HOSPITAL IN CHINA.

Yinzi Yi¹, Hongmei Huang¹, Wenyu Lai¹, Winnie Lee¹, ², Godfrey Chan¹, ², Chun-Bong Chow¹, ², Po-Yin Cheung* ², ³

¹NICU, Hong Kong University-Shenzhen Hospital, Shenzhen, China, ²Paediatrics and Adolescent Medicine, The University of Hong Kong, Hong Kong, Hong Kong, China, ³Pediatrics, University of Alberta, Edmonton, Canada

Background and aims: Family-centered care (FCC) in the neonatal intensive care unit (NICU) is a novel idea that has many advantages including increased breast feeding and parental satisfaction while its effects in mortality and infection are not known. We aimed to describe our experience of a FCC NICU in a new general community hospital.

Methods: In 2015, we conducted a cohort study at the NICU of the Hong Kong University-Shenzhen Hospital. The NICU was staffed by a team of doctors and nurses who were certified for their skills in neonatal resuscitation based on the Canadian program. Structured satisfaction anonymous questionnaires were distributed to the parents of infants discharged from NICU. Demographics, mortality, infection and breast feeding rates, and parental satisfaction were studied and analyzed if there was any difference between term and preterm infants (z test).

Results: There were 1205 (1005 term and 200 preterm) infants admitted to the FCC NICU in 2015. The overall mortality was 0.58% (7/1205; 0.3% and 2% for term and preterm, respectively) with the highest mortality for those born at <32 week gestation (3/24, 12.5%). Five infants (0.41%) had infection with higher incidence in preterm infants (2% vs. 0.1% in term; p=0.0001). The breast feeding rates at discharge for term and preterm infants were 90% and 85% (p=0.12), respectively. Of the parental questionnaires returned from 183 families, 80% indicated a full score (10/10) with a mean score of 98.2 out of 100 in parental satisfaction.

Conclusions: In China, FCC in the NICU is feasible with improved breast feeding rate and family satisfaction.

Keywords: family centered care, Morbidity, Mortality, NICU, premature infant
THE LEVEL OF PLACENTA GROWTH FACTOR IN UNDERWEIGHT PRETERM BORN BABIES
Dilorom Akhmedova1, 2, Khursanoy Akramova2
1Republican Specialized Research Medical Center of Pediatrics, 2Tashkent pediatric medical institute, Tashkent, Uzbekistan

Background and aims: Aims. To define the level of placenta growth factor (PLGF) in underweight preterm newborn babies

Methods: 89 mothers and their babies were followed up; among them 40 mothers who born healthy babies with normal weight (the control group) and 49 mothers whose babies were preterm born (main group). Twenty one out of 49 preterm born babies had low weight. The level of serum PLGF (pg/ml) in the mothers was determined by means of immunologic method Quantikine Human PLGF

Results: We determined low level of PLGF in blood serum of the mothers from the main group, compared with the control group (respectively 84.3±13.4 and 275.0±126.5 pg/ml; p<0.01). The value was reliably 2.5 folds decreased in the study of PLGF in blood serum of the mothers with underweight babies in comparison with the control group and 1.6 fold in comparison with that value of preterm babies the weight of which corresponded to the term of gestation. Decrease of PLGF values has direct correlation link with the health status of preterm babies with the background retardation of fetal development (r=+0.51)

Conclusions: low level of PLGF (below 100 pg/ml) in blood serum of the mothers testifies the high risk of fetal development retardation, which is confirmed by correlation link between the level of PLGF and the frequency of fetal development retardation and birth of premature and underweight babies

Keywords: None
Neonatology

TO DETERMINE THE EFFICACY OF TRANSCUTANEOUS BILIRUBINOMETER
Prakhar Mohniya1, Vijaykumar Potdar1, Chandrashekar Aundhakar1, Suryakant Ingale1, Rohit Agrawal1
1Pediatrics, Krishna Institute Of Medical Sciences, Karad, India

Background and aims: Early discharge of newborn after delivery is becoming common practice in developing countries like India because of medico-social reasons and economic constraints. Thus the recognition, follow-up and treatment of jaundice have become more difficult. Despite limitations, transcutaneous bilirubinometers can serve as a screening tool, especially where services of a neonatologist are not available. This can be very helpful in the community or peripheral health setup for the grass root level workers to screen neonatal hyperbilirubinemia.

Aim of the study is to assess the effectiveness of transcutaneous bilirubinometry by comparing its value with lab S.Bilirubin for the diagnosis of hyperbilirubinemia in full term normal neonates.

Methods: This is a prospective study and a total of 200 full term normal newborn were studied during November 2013 to June 2015. Bilirubin was measured by transcutaneous bilirubinometry on day 3 over sternum and forehead and at the same time blood sample was sent to lab for S.Bilirubin.

Results: Bilirubin value by TCB method is positively correlated with conventional serum Bilirubin value with $r^2$ value 0.97 indicating strong linear correlation with sensitivity over sternum 93% and over forehead 90.7% and specificity over sternum 98.7% and over forehead 96.2%.

Conclusions: Transcutaneous bilirubinometry can server as a good tool for the diagnosis of hyperbilirubinemia with high sensitivity and specificity with better yield over sternum.

Keywords: efficacy, Transcutaneous Bilirubinometer
TO STUDY THE EFFECT OF NEONATAL AND MATERNAL RISK FACTORS IN PRETERM VERY LOW BIRTH WEIGHT BABIES ON DEVELOPING RETINOPATHY OF PREMATURITY (ROP)

Deepak Agrawal¹, Gaurav BHATNAGAR¹, Satyendra bansal¹
¹ pediatrics, MANGAL NURSING HOME GWALIOR INDIA, gwalior, India

Background and aims: Retinopathy of prematurity is a complex disease of the developing retinal vasculature in preterm infants. The basic pathogenesis is still unknown. To assess the incidence of ROP in preterm VLBW babies and the effect of maternal and neonatal risk factors in the development of ROP in the babies

Methods: 50 babies were enrolled and managed. Very first screening was done at 4 weeks. In those ROP was detected were further followed up till full developing ROP or regression. In those who develop ROP laser was done and followed up till regression. Those babies with no ROP on first screening were also followed up for partially vascularised retina and there was no follow up in babies with fully vascularised retina

Results: The overall Incidence of ROP was 30% with more in 1001 – 1250 gm weight (58%) and 28-30 wks gestation (47%). 20% had zone 1, 6% zone 2, 4% zone 3 and none had stage 4 and 5 disease. All the babies with zone 3 ROP underwent successful laser surgery. On univariate analysis birth weight, gestation, total number of days on oxygen and blood transfusion were found to be significant risk factors. Maternal risk factors like leaking PV, Pregnancy Induced Hypertension (PIH), Antepartum hemorrhage (APH), Diabetes and fever had no effect

Conclusions: The retinal screening of babies below 30 wks gestation or 1300 gms. with risk factors will save many babies vision

Keywords: None
URINARY URIC ACID / CREATININE RATIO AS A PREDICTOR OF MORBIDITY IN NICU ADMITTED INFANTS

Shahin Nariman¹, Setareh Sagheb² on behalf of neonatology and Arash Women Hospital NICU ward (Tehran University of Medical Sciences)

¹Neonatology, Arash women hospital Tehran university of mmedical sciences, ²neonatology, Tehran university of medical sciences, Tehran, Iran

Background and aims: There are many studies which were focused on evaluation of risk factors for prediction of mortality and severity of disease especially in perinatal asphyxia. We presumed whether urinary uric acid/ creatinine (UUA/UCr) ratio can predict morbidity in neonates which were admitted to NICU.

Methods: All the infants who were admitted to our NICU after birth from June 2013 to July 2014 were enrolled in prospective cross sectionals study. UUA/Cr was measured during the first day of life. Severity of diseases and neonatal death were considered as the final outcome. Statistical analysis was done by using STATA version 11 (STATA Corp, TX, USA). A P<0.05 was considered of statistical significance.

Results: The total of 362 neonates were admitted to NICU in which, 45.6% were male and 54.4% were female. The mean gestational age was 32.7. The mean UUA/Cr ratio were significantly higher in the admitted infants. There is a relationship between UUA/Cr ratio, APGAR score and the duration of stay by linear regression analysis. There are correlations between UUA/Cr ratio and APGAR score with outcome. (P=0.006) and duration of stay(P=0.009) by using univariable logistic regression.

Conclusions: Urinary uric acid/ creatinine ratio can be used as a simple, noninvasive parameter for prediction of the severity of disease and morbidity in NICU admitted infants.

Keywords: Neonatal morbidity, Outcome, Urine Creatinin, Urine Uricacid
VITAMIN A FOR PRETERM INFANTS: TIME TO RE-EVALUATE

Xanthi Ioanna Couroucli* 1

1 Department of Pediatrics, Section of Neonatology, Baylor College of Medicine and Texas Children’s Hospital, Houston, Texas, United States

Background and aims: Low birth weight and prematurity are amongst the strongest predictors of neonatal mortality worldwide. About 10% of live births are preterm occurring before 37 weeks of gestation. In high income countries, the survival rates are much higher than in low and middle income countries. Preterm infants have lower levels of vitamin A and retinol binding proteins than term infants. Randomized clinical studies have shown that vitamin A administration to preterm infants has decreased infant mortality rate and severe retinopathy of prematurity (ROP) as well as prevented bronchopulmonary dysplasia (BPD). Up to 57% of preterm infants can develop BPD, which is associated with significant short and long term morbidity. Aims: 1. To analyze the costs of caring for preterm infants with BPD in high income countries. 2. To provide a framework for clinicians and policy-makers for the use of vitamin A for the prevention of BPD. 3. To formulate hypothesis for the use of vitamin A for prevention of other complications of prematurity.

Methods: Literature search on socioeconomic, experimental and clinical data on vitamin A in preterm infants.

Results: We formulated a worksheet for individual NICU’s to estimate their own costs of vitamin A administration to prevent BPD.

Conclusions: We provided the evidence along with cost analysis for the use of vitamin A to prevent BPD in high income countries. Further studies are warranted on the use of vitamin A in preterm infants to prevent not only BPD but also ROP, sepsis and stillbirths in low, middle and high income countries.

Keywords: Bronchopulmonary dysplasia, preterm infants, Retinopathy of prematurity, Vitamin A
WHAT BRINGS NEWBORNS TO THE EMERGENCY DEPARTMENT?

Jan Kovacech¹, Francis Nolan¹
¹Emergency, Redland Hospital, Queensland Cleveland, Australia

**Background and aims:** This study aimed to analyse the characteristics of newborn visit to the general emergency department.

**Methods:** We performed a retrospective medical chart review of all neonatal presentations occurring between August 2013 and August 2015 to the general emergency department. We analysed the information on age, sex, time of presentation, presenting complaint, final diagnosis and hospital admission.

**Results:** A total of 368 neonatal visits were identified. The mean age was 14.5 days (range 1 to 28 days). 59.5% were male and 40.5% were female. The majority of newborns presented between 11 am - 2 pm (26.6%) and between 4 pm - 8 pm (37.5%). The most frequent presenting complaints were: breathing difficulties (19.3%) unsettled/crying newborn (16.3%) skin problems (8.4%) vomiting (7.6%) jaundice (7.3%) and fever (7.1%). The most frequent final diagnoses that made up 51.3% of the presentations were: feeding problems (11.9%) neonatal jaundice (11.4%) no illness found (10.3%) bronchiolitis (5.9%) upper respiratory tract infection (4.9%) viral infection (4.0%) and conjunctivitis (3.8%). The overall admission rate was 37% most commonly due to fever and bronchiolitis.

**Conclusions:** Most neonatal visits were because of non-serious diseases and could have been resolved in primary care. Further studies are needed to identify the factors associated with newborn presentations to the emergency department.

**Keywords:** emergency department, Newborns
Nephrology

ACUTE GLOMERULONEPHRITIS AMONG CHILDREN ADMITTED AT THE EMERGENCY PEDIATRICS UNIT OF A RURAL TERTIARY HOSPITAL IN NIGERIA- INCIDENCE AND OUTCOME

Umma Idris¹, Bilya RABIU²
¹paediatrics, Federal Medical Centre Birnin Kudu Jigawa State Nigeria, ²paediatrics, federal medical centre, Jigawa, Nigeria

Background and aims: little is known about the incidence of the AGN among the poor rural dwellers in Nigeria. This study aimed to determine the prevalence and incidence, complications, and outcome of children with AGN.

Methods: This was a cross-sectional study conducted at the emergency paediatrics unit of federal medical centre Birnin-kudu Jigawa state Nigeria. Data were retrieved from the records of all children admitted with diagnosis of AGN from January 2009 to December 2013.

Results: Forty eight of 2811 admissions had AGN giving a prevalence of 1.71% and an incidence of 9.6 cases per year. 32 were males giving a M:F of 2.7:1. Mean age at presentation was 8.4 ± 3.3 years AND mean duration of hospital stay was 7.7± 2.9 days (4 -15 days). 16 children had complications; 9 had hypertensive encephalopathy, 6 were in heart failure and one had both complications at presentation. Three had co-morbidity of urinary tract infection. Forty (83.3%) were discharged home, 2(4.2%) left against medical advice, 2(4.2%) absconded and 4 (8.3%) died.

Conclusions: AGN is more prevalent among children from rural areas. Improving sanitation, adequate housing will reduce overcrowding and prompt treatment of all childhood streptococcal infection will reduce its predisposition thus preventing its occurrence and related mortality.

Keywords: acute glomerulonephritis, children, incidence, outcome
Background and aims: Chronic kidney disease (CKD) is a rare pediatric condition associated with complications and comorbidities. Home care (HC) may support the provision of a higher quality and patient/family-centered care in CKD but a systematic evaluation of HC services have yet to be undertaken.

Methods: A systematic review was conducted using 11 electronic databases, hand searches and expert consultations for publications during 1990-2015. All types of outcomes and study designs incorporating empirical information about any CKD severity level and any type of clinical or psychosocial services provided in pts’ homes for those aged <19 years were eligible. Title/abstract and full text reviews, data abstraction and risk of bias evaluations were completed by 2 authors using pre-tested forms.

Results: Among 144 full-text publications, 6 articles (4 on peritoneal dialysis (PD), 2 on pre-dialysis, dialysis and post-transplantation; all single site; mostly non-comparative designs) met inclusion criteria. HC interventions included in-house nursing/respite care and dietitian services. Clinical outcomes such as peritonitis rate in PD were most common.

Conclusions: Most articles focused on nursing/respite care for PD. Existing information on the utility of HC provision is limited. More studies with a focus on psychosocial services are needed.

Allied Health Research grant from the Kidney Foundation of Canada supported this study.

Keywords: chronic kidney disease, home care
Nephrology

CLINICAL AND URINARY FINDINGS IN CHILDREN PRESENTING AT THE CHILDREN OUTPATIENT DEPARTMENT (CHOP) IN A TERTIARY HOSPITAL IN SOUTH-EAST, NIGERIA.

Uzoamaka Muoneke¹, Roland Ibekwe¹, Christopher Eke¹, Kenechukwu Uwakwe², Olakemi Daniyan³
¹Department of Paediatrics, University of Nigeria, Enugu Campus, Enugu, ²Community Health, Imo State University, Owerri, ³Department of Paediatrics, Federal Teaching Hospital, Abakaliki, Abakaliki, Nigeria

Background and aims: Childhood renal diseases have been reported to be on the increase globally in recent times with unconfirmed possible reasons. This increasing trend may be related to the late presentation of majority of these patients who often are asymptomatic initially. This study is aimed at determining the prevalence of urinary abnormalities and hypertension using urinary and clinical findings in children who present at the index Hospital’s Children’s out-patient Department.

Methods: A cross sectional study involving children who were seen at the hospital with varying symptoms. Relevant history and clinical examinations were obtained on each of the study subjects following standard protocols. Fresh morning urine samples of subjects were subjected to dipstick urinalysis to assess presence of Protein, Blood, Nitrites, Glucose and Ketones. Data was analyzed using SPSS 21.0 (p < 0.05).

Results: One hundred subjects out of the 157 patients were studied, 60% were males. The most frequent symptoms were headache (72%), abdominal pains (65%), fever (46%) and increased urinary frequency (43%). Twenty-five (25%) had hypertension. Forty-four (44%) children had abnormal urinary findings existing either alone or in combination. Proteinuria was the most common urinary abnormality seen in 23% of them.

Conclusions: Abnormal urinary findings were observed to be high among the subjects making it pertinent for routine blood pressure measurement and urinalysis to be advocated for all children seen at the CHOP irrespective of their presenting symptoms. Abnormal findings should be further evaluated as part of a nephro-preventive strategy.

Keywords: None
Nephrology

CYSTATIN C AS A MARKER OF THE CYCLOSPORINE NEPHROTOXICITY IN CHILDREN WITH NEPHROTIC SYNDROME

Olga Komarova1, Alexey Tsygin1, Ivan Smirnov2

1 pediatric nephrology, 2 laboratory department, Scientific center of children’s health, Moscow, Russia

Background and aims: Cystatin C (CysC) debated to be an earlier indicator of renal function decline than creatinine. To confirm the possibility of using CysC as a reliable marker of cyclosporine A (CsA) nephrotoxicity.

Methods: We analyzed CysC serum levels (ELISA) in 33 children with nephrotic syndrome in varying duration of CsA treatment comparing with 30 patients with CKD 1 stage without any nephrotoxic drug and with 19 healthy children.

Results: 11 patients were treated by CsA in dose 3.5±0.3 mg/kg less than one year. CysC-an average-1037±80 ng/ml comparable to the control group - 899±129 ng/ml and CKD 1 stage group - 1216±366 ng/ml. In 12 children with CsA therapy in dose 3.4±0.7 mg/kg for 18-24 months serum CysC was 1359±56 ng/ml - higher than the control (p<0.05). 10 children were treated by cyclosporin for more than two years in dose 2-3.5 mg/kg, Average CysC was 1610±74 ng/mL. - significantly higher than the values of control and CKD 1 stage groups. In 6 patients undergoing CsA for more than two years the second renal biopsy was performed- nephrotoxicity was found in 2 children with highest CyC levels. Creatinine was not evaluated in all patients during the whole period of assessment.

Conclusions: Cystatin C should be recommended as a more sensitive predictor of CsA nephrotoxicity than creatinine in children with nephritic syndrome.

Keywords: None
Background and aims: UTI may create cystitis or pyelonephritis by involving bladder or renal parenchyma, respectively. The current study aimed to determine risk factors of acute renal cortical lesions in renal scintigraphy in children with UTI.

Methods: 53 patients with without significant renal cortical lesions were compared based on the intensity of findings of DMSA scintigraphy within the first two weeks of diagnosis. Patients were divided into three groups of 1 month to 2 years, 2 to 4 years and 4 to 10 years.

Results: Of 106 patients, 11 males (20.8%) and 42 females (79.2%) had significant acute renal cortical lesions, whereas 15.1% of males and 84.9% of females had no significant acute renal cortical lesions. There was a significant difference in the degree of fever, the average interval between the onset of fever and treatment, mean level of CRP, leukocytosis and ESR in the two studied groups. The presence of VUR, low initial hemoglobin and low initial BMI as random findings were associated with significant renal cortical lesions. Gender, age, grade of VUR and type of organism in urine culture had no significant association with significant renal cortical lesions.

Conclusions: In this study, delaying in treatment, high degree fever, leukocytosis, high initial ESR and CRP, existence of VUR and low initial BMI and hemoglobin levels were associated with an increase in the value of acute renal cortical lesions, so in these cases, DMSA scan is suggested.

Keywords: DMSA (Dimercaptosuccinic Acid), Pediatrics, Renal scars, Urinary Tract Infections

Uzoamaka Muoneke¹, Alfred Una², Christopher Eke³, Onyinye Anyanwu⁴

¹Department of Paediatrics, University of Nigeria, Enugu Campus, Enugu, ²Community Medicine, Federal Teaching Hospital Abakaliki, Abakaliki, ³Department of Paediatrics, University of Nigeria, Enugu Campus, Enugu, ⁴Department of Paediatrics, Federal Teaching Hospital, Abakaliki, Abakaliki, Nigeria

Background and aims: Renal diseases are important causes of morbidity and mortality in children worldwide particularly in the resource poor countries of Sub-Saharan Africa. The study aims to review the pattern and outcome of Paediatric renal admissions at the Federal Teaching Hospital Abakaliki over a 3-yr period.

Methods: A retrospective observational review of all childhood renal admissions in FETH, Abakaliki, Ebonyi State between 2011 and 2013. Clinical data extracted from the hospital records included patients’ biodata, presenting symptoms, examination findings, laboratory investigation results as well as treatment and outcome using a semi-structured questionnaire. Data collected were analysed using SPSS software package version 16.0. The differences in proportions were tested for statistical significance using the Chi square statistics. Statistical significance was based on P<0.05.

Results: In the period under review, 1780 children were admitted out of which 4.4% (79/1780) had renal disorders. The mean age of the subjects was 8.37 (5.1) years. Nephrotic syndrome (32.9%) was the most common and the case fatality rate of the study was 3.8% (3/79).

Conclusions: The prevalence of individual renal cases in this study appears to be high. Nephrotic syndrome was the most common renal disorder observed with majority having favorable outcome.

Keywords: None
**Nephrology**

**THE ROLE OF VOIDING CYSTOURETHROGRAM IN CHILDREN WITH FIRST-TIME SIMPLE FEBRILE URINARY TRACT INFECTION AND NORMAL RENAL AND BLADDER ULTRASOUND**

Pornpimol Rianthavorn*, Onjira Tangngamsakul1

1Pediatrics, Chulalongkorn University, Pathumwan, Thailand

**Background and aims:** We evaluated risk factors for abnormal voiding cystourethrogram (VCUG) in children with first-time simple febrile urinary tract infection (UTI) and normal renal and bladder ultrasound (RBUS), as vesicoureteral reflux (VUR) could be missed if VCUG is not performed.

**Methods:** Clinical data of children aged 2-72 months with first-time simple febrile UTI and normal RBUS were compared between those with normal and abnormal VCUG. Exclusion criteria were history of UTI or antenatal hydronephrosis, family history of VUR and complicated UTI.

**Results:** Of 167 children with normal US, 40 (24%) had abnormal VCUG. The median age and proportion of females were higher in children with abnormal VCUG (12.7, 7.0-48.0 months vs. 7.0, 4.9-14.9 months; \( p < 0.001 \) and 65% vs. 46%; \( p = 0.03 \), respectively). After adjusting for gender and uropathogens in a multivariate model, age >24 months was the risk factor for abnormal VCUG with an odds ratio of 3.12 (95% CI 1.37-7.12; \( p = 0.007 \)). There was a trend towards increasing risk of abnormal VCUG in females and in non-\( E. \) coli UTI (image), but the risks were not statistically different among patients within the same age group.

**Conclusions:** Selective VCUG is recommended in children with first-time simple febrile UTI and normal RBUS, as VCUG helps to identify patients who would benefit from prophylactic antibiotics and/or who require close monitoring for subsequent UTI.

**Image:**
Keywords: urinary tract infection, vesicoureteral reflux, voiding cystourethrogram
Background and aims: Urinary tract infection (UTI) is one of the common bacterial infections in infants. Transient type I pseudohypoaldosteronism (PHA I), characterized by hyperkalemia, hyponatremia and metabolic acidosis, is one rare but severe complication of UTI. However, limited data are available describing clinical manifestations of infants with transient PHA I caused by UTI.

Methods:
1. All infants with UTI exhibited features of transient PHAI in the course of their UTI during Aug. 2011 to July 2014 were enrolled. Clinical symptoms, biochemical and image studies, and clinical outcome were recorded.

Results: Twelve infants aged 1-7 months were diagnosed as UTI complicated transient PHAI. All had hyponatremia, hyperkalemia, metabolic acidosis, low TTKG, and relative high FENa. The time from fever to occurrence of transient PHAI developed was 1-5 day. Poor oral feeding and frequent vomiting were two most common clinical manifestations. E. coli and K. pneumonia were the two most common pathogens. All patients were treated with fluid hydration and furosemide. Additional oral kalimate and sodium carbonate were administered in 8 and 3 patients, respectively. One needed intravenous calcium gluconate. One had complicated hyperkalemia-induced ventricular tachycardia developed during hospitalization.

Conclusions: Our findings highlight the facts that young onset, underlying urinary tract anomaly, and occurrence of pyelonephritis are the risk factors of development of transient PHA I. PHA I caused by UTI is not always a benign course.

Keywords: Pseudohypoparathyroidism, Urinary tract infection
Background and aims: Objective criteria are crucial for the standartized assessment of the motor development. Aim was to develop and test the pilot version of the «Child early physical activity scale» (CEPAS) based on the V. Vojta principles of motor ontogenesis.

Methods: 32 children with the perinatal asphyxia delay aged from 0 till 18 months who passed a physical rehabilitation. Specially developed CEPAS, that consists of 5 criteria (from 0 to 5 points) for the assessment of all steps of early motor ontogenesis. All patients were assessed with the CEPAS before, just after and 3 months after the rehabilitation course (RC). Parents of patients in the main group (N=17) proceeded physiotherapy with children at home. Parents in comparison group refused to fulfill exercises (N=15).

Results: Children of the both groups achieved new movement skills. Before the rehabilitation the median results of the CEPAS was 10 points in both groups. After 14 and 14 points. After 3 months the assessment showed significant difference of CEPAS score in groups: median in the main group-21, in group of comparison-17 points.

Conclusions: The CEPAS appeared to be a quick, convenient instrument to assess early motor development. It could be used by the doctors and physiotherapists for the every day practice.

Keywords: Perinatal asphyxia, Physical activity, Rehabilitation, Scale
A PATIENT WITH ANTI-NMDA RECEPTOR ENCEPHALITIS AND HER JOURNEY BETWEEN HOSPITALS AND RELIGIOUS HEALERS.

Sumayah Al Hajjaj* 1, 2

1Department of Pediatrics, King Abdulaziz Hospital; Ministry of National Guard Health Affairs, 2King Abdullah International Medical Research Center, King Saud bin Abdulaziz University for Health Sciences, Al Ahsa, Saudi Arabia

Background and aims: Anti-N-methyl-d-aspartate receptor (NMDAR) encephalitis is an autoimmune disease presenting with acute psychosis, generalized dystonia and seizures. Prompt recognition facilitates early intervention with immunomodulatory therapy which improves prognosis. Diseases with predominant psychiatric symptoms are often attributed in society to supernatural causes like black magic. This leads to pursuing religious healing which may interfere with medical therapy. We aim to describe a case where patient’s family chose both religious and medical treatments.

Methods: Case Report

Results: 10 years old girl presented with acute psychosis, generalized dystonia and seizures, after a preceding varicella infection. The patient was diagnosed as a query Anti-NMDA receptor encephalitis and received systemic steroid and IVIG without significant improvement. Investigations showed elevated anti-NMDA receptors antibodies in plasma and CSF, which confirmed the diagnosis. After receiving a course of Rituximab, she showed significant improvement with resolution of dystonia, recovering motor skills, memory and language. Few months later, the patient presented with recurrence of psychiatric symptoms. The family suspected black magic as the underlying cause and took her to a religious healer. A second course of Rituximab course was given after counseling. The patient completely recovered and currently attending regular school with no residual neurological deficits.

Conclusions: Counseling of superstitious families is necessary for adequate medical management.

Keywords: acute psychosis, Anti-NMDA receptor encephalitis, Black magic, Dystonia, Religious healing, Rituximab, Seizures
Neurology

BRAIN MRI IN SEVERE AND ATTENUATED HUNTER SYNDROME

Liliya A. Osipova¹, Ludmila M. Kuzenkova², Anait K. Gevorkyan¹, Leila S. Namazova-Baranova³, Tatyana V. Podkletnova², Magda Z. Karkashadze⁴, Andrey N. Getman⁵

¹Consultative and Diagnostic Center, ²Department of Neurology, ³Director of Scientific Center of Children’s Health, ⁴Department of MRI, ⁵Department of Computer Tomography, Scientific Center of Children’s Health, Moscow, Russia

Background and aims: Hunter syndrome (mucopolysaccharidosis II, MPS II) is a hereditary X-linked recessive disorder, caused by a deficiency of lysosomal enzyme iduronate-2-sulfatase, resulted in progressive damage of different tissues and organs, including CNS. There is currently no reliable disease severity and progression markers. The aim of the study is to evaluate the role of MRI in differentiation of disease severity phenotypes and establishing its progression.

Methods: 66 brain MRIs of 41 males with MPS II were retrospectively evaluated. 28 patients were classified as severe (mean-age 7.4 years; age-range 0.9–16.5 years) and 13 as attenuated phenotype (mean-age 7.8 years; age-range 1.3–17.2 years). MRI abnormalities were scored according to Manara et al. (2011), Matheus et al. (2004), imaging characteristics of hydrocephalus – according to Barkovich (2012).

Results: Severe disease phenotype was associated with increased ventricular index (p<0,01), narrowing of the ventricular angle (p=0.014), widening of the frontal horn radius (p=0.013), white matter signal abnormalities in T2 and FLAIR (p=0.02), subarachnoid CSF spaces enlargement (p<0.01), IIIrd ventricle enlargement (p<0.01), enlarged cisterna magna (p<0.01). Correlation between age and increased ventricular index (p<0.05), narrowing of the ventricular angle (p<0.05), widening of the frontal horn radius (p<0.05), subarachnoid CSF spaces enlargement (p<0.05), IIIrd ventricle enlargement (p<0.05) was demonstrated only for severe phenotype.

Conclusions: In patients with severe disease there is a progression of cerebral atrophy, that may be followed up by MRI.

Keywords: cerebral atrophy, disease progression, severe phenotype
CHILDHOOD GUILLAIN-BARRÉ SYNDROME: AN EMERGING THREAT AFTER THE ERADICATION OF POLIOMYELITIS

Zhahirul Islam¹, Sumit K. Sarker¹, Mohammad B. Islam¹, Gulshan Ara², Hubert P. Endtz³, Quazi D. Mohammed⁴

¹Laboratory Sciences and Services Division, ²Nutrition and Clinical Services Division, icddr,b, Dhaka, Bangladesh, ³Department of Medical Microbiology and Infectious Diseases, Erasmus MC, University Medical Centre, Rotterdam, Netherlands, ⁴Department of Neurology, National Institute of Neuroscience, Dhaka, Bangladesh

Background and aims: Guillain–Barré syndrome (GBS) is the commonest cause of acute flaccid paralysis in children after the eradication of poliomyelitis. We aimed to identify preceding events, clinical characteristics, electrophysiological features and prognostic factors of childhood GBS after post-polioymelitis eradication era in Bangladesh.

Methods: We conducted a prospective observational study enrolling 130 childhood GBS patients in the Dhaka area of Bangladesh between 2010 and 2013. Detailed clinical, electrophysiological, and follow up data were collected at different time points. Clinical and electrophysiological features were correlated with prognosis.

Results: GBS affected predominantly males (M/F=2.5:1). The antecedent events were recorded in 78% of patients; the most frequent events being gastroenteritis (40%) and upper respiratory tract infection (23%). The majority (85%) of the children had a pure motor variant of GBS with 52% cranial nerve involvement. Sixty percent (60%) patients were bed-bound at entry and 20% patients required mechanical ventilator. Electrophysiological studies showed that children were classified as having axonal (62%) or AIDP (21%), or were unclassified (15%). Preceding diarrheal illness was more common in AMAN subtype as compared to AIDP subtype (p-value <0.05). Eleven (8%) patients died and 20% remained severely disabled during the follow-up of 6 months.

Conclusions: Axonal variant was predominant in childhood GBS in Bangladesh. The presence of severe disability at entry, axonal variant and the need for mechanical ventilator were found to be significant predictors for poor outcome.

Keywords: None
COMPARATIVE STUDY TO ASSESS THE EFFICACY OF I.V. VALPROATE AND I.V. PHENYTOIN AS FIRST LINE THERAPY IN CHILDHOOD STATUS EPILEPTICUS.

Simranpreet Singh1, Bhawna Mirg*1
1Pediatrics, Bebe Nanaki Mother and Child Centre, Amritsar, India

Background and aims: Numerous medications are suggested for the treatment of SE, two of which are sodium valproate and phenytoin. The purpose of this study is to conduct a comparison between the efficiencies of intravenous sodium valproate and phenytoin in the treatment of this type of epilepsy.

Methods: This prospective study was conducted on 100 SE-suffering patients (irrespective of the cause) b/w age group 1-15 yrs admitted in dept of pediatrics, govt medical college, Amritsar in 2014-15.those already taking antiepileptics & with family history of febrile seizures were excluded.Patients were divided into 2 groups and alternatively given iv Valp. and phenytoin.

Results: Iv Valp. is more efficacious than iv phenytoin with regard to time taken to control seizure in SE (p=0.044). time taken to control seizure was <=5 min in 6(12%),>5-6min in 15(30%),>6-7min in 16(32%) patients.There was also trend towards less recurrence rate in valp. grp (8%) than phenytoin (20%).however the difference was not significant in regards to clinical complication or drug related side effects

Conclusions: Mean value of time of seizure control in valp.grp was 6.30+/-1.02 mins whereas in phenytoin grp was 6.80+/-0.94mins .Based on the findings iv valproate may be a better alternative to i.v phenytoin as first line therapy in status epilepticus in children 1-15 yrs of age showing quicker resolution of seizure with no immediate adverse effects.

Image:
Keywords: Intractable epilepsy, phenytoin, sodium valproate, status epilepticus
DISTAL HEREDITARY MOTOR NEUROPATHY DUE TO BSCL2 MUTATION: A DISTINCTIVE PHENOTYPE

Margarida Rafael*, Catarina Lacerda¹, Elisabete Gonçalves¹, Susana Rocha¹
¹Pediatric, Centro Hospitalar Barreiro-Montijo, Barreiro, Portugal

Background and aims: Distal hereditary motor neuropathy (dHMN) covers a spectrum of clinically and genetically heterogeneous diseases characterized by the selective involvement of motor neurons in the peripheral nervous system. The disease usually begins under 20 and the majority of patients present a classical distal muscular atrophy syndrome in the legs without clinical sensory loss.

Methods: We present a twelve-years-old girl, admitted in our centre at age 8 for abnormal gait and motor coordination. No relevant family history. Since 5 progressive difficulties in gait, frequent falls and incomplete abduction of hands, with difficulties in fine motor skills. Also learning problems.

Results: At first examination: distal wasting of limbs muscles, most evident in hands interosseous and eminences. Distal upper limbs weakness but in lower limbs also proximal weakness. Brisk deep tendon reflexes. Bilateral Achilles tendon shortening with left Babinski sign. No sensory changes. Electromyography shown a purely motor axonal polyneuropathy. MFN2 gene study was normal. Cranial and spinal MRI with spectroscopy unchanged. Metabolic workup was normal. She evolved with progressive muscular weakness, distal hypo/arreflexia and severe atrophy of the hands. An heterozigous BSCL2 gene mutation was found.

Conclusions: BSCL2 mutations have been described in patients with a phenotype of dHMN with prominent hand wasting and pyramidal tract signs (dHMN type V). We should bear in mind this diagnosis and specific mutation when this constellation of signs is present.

Keywords: BSCL2, distal, motor, neuropathy, pyramidal tract signs
OUTCOME AND RISK FACTORS OF SEIZURE RECURRENCE IN CHILDREN WITH FOCAL EPILEPSY.

Albia Pozo Alonso\textsuperscript{1}, Desiderio Pozo Lauzán\textsuperscript{1}

\textsuperscript{1}Department of Child Neurology, William Soler Children's Hospital, Havana, Cuba

Background and aims: Focal seizures are common in children. The aims of this study were to determine the outcome and risk factors of seizure recurrence in children with focal epilepsy.

Methods: 182 children newly diagnosed with focal epilepsy (two or more unprovoked seizures) aged 1 month to 14 years, were prospectively studied. Patients were admitted to the Department of Child Neurology. They were followed up for 2 years after the beginning of antiepileptic treatment. The effect of age, seizure type, etiology, family history of epilepsy, neurological handicaps, initial EEG and CT scans on recurrences from seizures, were evaluated. Chi-square test with a level of significance of 5% were used as statistical analysis. Odds ratios (OR) with 95% confidence intervals (CI) were calculated.

Results: 47 children (25.8%) had recurrences of focal seizures. 48.9% of children with symptomatic etiology had recurrences, followed by the group of patients (27.7%) with idiopathic etiology. \(p<0.02\). (OR, 2.85; 95% CI, 1.4-5.7). 57.4% of patients with neurological handicaps had relapses. \(p<0.03\). (OR, 2.0; 95% CI, 1.1-3.9). 25.5% of patients with abnormal CT scans were uncontrolled. \(p<0.03\). (OR, 2.9; 95% CI, 1.2-7.1).

Conclusions: Most children with focal epilepsy have a good prognosis. Symptomatic etiology, neurological handicaps, and abnormal CT scans are risk factors of seizure recurrence in children with focal epilepsy.

Keywords: Focal epilepsy, outcome, Risk factors of recurrence
RELATIONSHIP BETWEEN INTRACRANIAL CALCIFICATIONS IN VEIN OF GALEN MALFORMATIONS AND FAHR’S SYNDROME: A CASE REPORT AND REVIEW OF THE LITERATURE

Uduak Offiong*1, J. O. Obande2
1Paediatrics, 2Surgery, University of Abuja Teaching Hospital, Gwagwalada, Nigeria

Background and aims: Vein of Galen malformations and Fahr’s syndrome are rare neurological disorders. They may be congenital but that may be as far as their similarities go as they are pathologically distinct entities with clearly defined natural courses. The occurrence of intracranial calcifications in the setting of vein of Galen malformation is not a usual event, and in literature vein of Galen malformation is not listed as a cause of multiple intracranial calcifications. Therefore, in such a setting, diagnostic dilemma may occur. Our patient has cognitive impairment and intracranial calcifications; both of which are consistent with the manifestations of the rare diseases described above. So, could it be that they are both coexisting in the same patient? We present a patient and reviewed current literature, and mechanism underlying the formation of the intracranial calcifications.

Methods: An 8-year-old boy referred with clinical features consistent with resolving intracranial thrombosis. No neurologic deficits.

Results: Neuroimaging led to a diagnosis of vein of Galen aneurysmal malformation (VGAM) with intracranial calcifications, which, was, equally consistent with the imaging characteristics of Fahr’s syndrome.

Conclusions: Characteristic intracranial calcifications of the basal ganglia and other regions of the brain may not direct towards a definitive diagnosis, however, in the presence of an identifiable cause, it is unlikely a diagnosis of Fahr’s syndrome would be entertained. The intracranial calcifications observed in this scenario are attributable to the delayed presentation of untreated effects of VGAM.

Keywords: calcification, Fahr’s syndrome, malformation, Seizures
ROLE OF FLUIDS IN CHILDREN WITH ACUTE ENCEPHALITIS SYNDROME

Ajit Rayamajhi¹, Michael Griffiths², Tom Solomon² and Liverpool Brain Infection Group

¹Pediatrics, Kanti Children's Hospital, Kathmandu, Nepal, ²Clinical Infection, Microbiology & Immunology, University of Liverpool, Liverpool, United Kingdom

Background and aims: Acute encephalitis syndrome (AES) is a group of symptoms and signs which help diagnose encephalitis. Since there is no definite treatment for most, role of fluids seems crucial. Previously low admission weight has been associated with bad outcome which could be dehydration or malnutrition. Therefore, we decided to find out the relationship of fluids and acid-base status with low admission weight and loss of weight in hospital and correlate with outcome.

Methods: All children aged 1 month to 14 years with fever and altered sensorium and/or seizures from September 2011 to September 2012 attending Kanti Children’s Hospital, Kathmandu, Nepal were recruited. Weight-for-age (WFA) using Z score and serum lactate were assessed at admission and discharge. Total fluid input and output was monitored daily.

Results: Of the 92 patients, 62% had low admission WFA or lost weight-after-admission (LWAA) (group A) and 38% no low WFA or didn't LWAA (group B). There was 19 times risk of death and 7 times risk of bad outcome (death or sequelae) in group A compared to B. Bad outcome was significantly associated with less admission WFA, more fluid deficit & higher admission lactate. Death was significantly more in low WFA, more LWAA, longer illness, more 5% dextrose and 0.5 normal saline, higher sodium and higher urea at admission.

Conclusions: Optimum & appropriate fluids may be life saving in AES children. A Randomized trial of fluids is recommended.

Keywords: None
THREE MONTHS VERSUS SIX MONTHS OF ANTIEPILEPTIC DRUG THERAPY IN CHILDREN WITH SINGLE SMALL ENHANCING CT LESION

Sadbhavna Pandit\(^1\), Neeraj Dhawan\(^1\), Rohit Kumar\(^1\)
\(^1\)Pediatrics Department, Government Multi Specialty Hospital Sector 16 Chandigarh India, Chandigarh, India

**Background and aims:** A single small enhancing CT lesion is a common finding in children with seizures worldwide and Neurocysticercosis is the commonest cause of SSECTL. This study was conducted to find out seizure recurrence after 3 months versus 6 months of antiepileptic therapy and to address factors predictive of seizure recurrence.

**Methods:** Children (n=95) aged 2-12 years presenting with seizures and SSECTL were randomly allocated to two groups. Group A & B received antiepileptic for 3 and 6 months respectively. All patients received 4 weeks of Albendazole and 1 week of Prednisolone. Antiepileptics were gradually tapered in patients with complete resolution of lesion in both groups. Patients were followed up for six months after stoppage of therapy.

**Results:** In Group A (n=47) after 3 months of antiepileptic, 13 patients (28.3\%) had complete resolution of lesion and there was no seizure recurrence in these patients on cessation of therapy. In Group B (n=48) after 6 months of antiepileptic, 20 patients (41.6\%) had complete resolution of lesion and there was no seizure recurrence. On follow-up, no recurrence of seizure was observed in both the groups. Seizure recurrence was seen in patients with persistent/calcified lesions (P=0.004).

**Conclusions:** Reduction of duration of AED to 3 months is effective in completely resolved SSECT lesion. Seizure recurrence is seen only in persistent/calcified lesion.

**Keywords:** AED, Seizure Recurrence, SSECTL
25-HYDROXYVITAMIN D LEVELS, VITAMIN D SUPPLEMENTATION AND HEALTH SERVICE UTILIZATION FOR UPPER RESPIRATORY TRACT INFECTIONS IN YOUNG CHILDREN: A TARGET KIDS! STUDY

Jessica Omand¹, Deborah O'Connor¹, Patricia Parkin², Catherine Birken², Kevin Thorpe³, Jonathon Maguire⁴
¹Nutritional Sciences, University of Toronto, ²Pediatrics, Hospital for Sick Children, ³Keenan Research Centre, Li Ka Shing Knowledge Institute, ⁴Pediatrics, Keenan Research Centre, Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Canada

Background and aims: Low vitamin D levels may be associated with upper respiratory tract infections (URTIs), which is the most common reason for emergency visits and hospitalizations in childhood. The primary objective was to determine if 25-hydroxyvitamin D serum concentration is associated with: a) hospital admissions (HA), b) emergency department visits (ED) or c) unscheduled outpatient physician visits (OV). The secondary objectives include: determining whether oral vitamin D supplementation during pregnancy or childhood is associated with health service utilization.

Methods: Healthy children age 0-5 years enrolled in TARGet Kids! were included in this study. Health service utilization was obtained by linking to health administrative data from the Institute of Clinical Evaluative Sciences. Multivariable Poisson modeling was used to determine the association between 25-hydroxyvitamin D concentration, vitamin D supplementation in pregnancy and childhood and HA, ED and OV.

Results: 5036 children enrolled in TARGet Kids! between 2009-2013 were included. The mean 25-hydroxyvitamin D level was 84nmol/L. 56% of children and 20% of pregnant women took a vitamin D supplement. 139 (3%), 922 (18%) and 3656 (73%) of children had at least 1 HA, ED and OV respectively for URTI. 25-hydroxyvitamin D concentration was not associated with HA, ED or OV; however, vitamin D supplementation was associated with lower HA, ED and OV.

Conclusions: Vitamin D supplementation in children appears to be associated with lower health service utilization however this does not appear to be mediated through serum 25-hydroxyvitamin D concentration.

Keywords: 25-hydroxyvitamin D, Children’s Health, Health services, Upper respiratory tract infections
A CASE REPORT: PSEUDO-BARTTER’S SYNDROME IN CYSTIC FIBROSIS.
Bárbara Nasr, Fernanda Torchio, Mônica Taulois
1Universidade do Grande Rio, Rio de Janeiro, Brazil

Background and aims: Pseudo-Bartter’s Syndrome (PBS) is an uncommon cause of metabolic alkalosis that has been seen as a presenting feature of Cystic Fibrosis (CF) as well as a complication in those with known disease.

Methods: We report on 4 months old patient presents with vomits, insatiable, peeved and steatorrhea. During newborn screening immunoreactive trypsinogen was elevated. Clinical exam found weight and height was < -2 standard deviations of the WHO Child Growth Standards median, discoloration hair (flag sign), gaze palsy and swelling of the face and limbs. Further investigation revealed anemia, hypoalbuminemia, sweat test positive and fecal elastase-1 decreased. After the diagnostic of CF, started enzyme replacement and oral NaCl. Patient was stable until summer, when presents underactive and vomiting. New investigation shows metabolic alkalosis, hypokalaemic, hypochloraemic, hyponatraemia and aldosteronism, consistent with PBS diagnostic.

Results: PBS in CF has more than one cause. Chronic sweat electrolyte loss, particularly in high environmental temperatures, may be aggravated by an acute intercurrent illness as mild vomiting.

Conclusions: PBS should be considered in children with CF who are failing to thrive despite conventional treatment. Therefore, the pediatrician must be aware for signs and symptoms of PBS, such as metabolic alkalosis and abnormally low serum electrolytes.

Keywords: Cystic Fibrosis, Pseudo-Bartter’s Syndrome
A PROSPECTIVE OBSERVATIONAL STUDY ON HYPOPHOSPHATEMIA IN SEVERE ACUTE MALNUTRITION (SAM)

Rana Chanchal¹, Sarika Gupta¹, Sciddhartha Koonwar¹, Rashmi Kumar¹, Chandrakanta Kumar¹
¹Department of Pediatrics, King George's Medical University, Lucknow, UP, India

Background and aims: Refeeding syndrome is defined as electrolyte and metabolic derangement that occur after starting feeding in patients of SAM. One of the important metabolic derangements is hypophosphatemia. The aim of the study was to detect proportion of cases of SAM with hypophosphatemia and to find out its predictors.

Methods: Study was conducted in department of pediatrics, KGMU, Lucknow, a tertiary care teaching hospital. It was a prospective observational study done over one year. Patients with WHO defined SAM from 6 months to 5 years were included in the study. Serum phosphorous levels were done on admission and for five consecutive days after starting feed along with other laboratory parameters. Hypophosphatemia was defined as mild, moderate and severe with cutoff of <2.5-2mg/dl, <1.99-1mg/dl and <1mg/dl respectively. Standard statistical methods of analysis were used.

Results: Out of 65 enrolled patients 60% had hypophosphatemia with 20% having moderate/severe hypophosphatemia at admission. The proportion of hypophosphatemia increased to 83.1% with 38.5% having moderate/severe hypophosphatemia on day 3 after feeding (p<0.05). Multivariate analysis showed that only skin manifestations is significantly and independently associated with severe hypophosphatemia (OR=650.6 (1.50 – 28.1) p<0.05). We also found that protocol based feeding decreases risk of hypophosphatemia significantly (OR=97.50 (10.75 – 884.5) p<0.05).

Conclusions: Serum phosphorous levels should be monitored after starting feeding in patients of SAM and skin manifestations independently increase the risk of severe hypophosphatemia.
Table 1: Univariate and multivariate association of baseline hypophosphatemia with clinical and laboratory parameters using binary logistic regression analysis.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Univariate (crude or unadjusted)</th>
<th>Multivariate (Adjusted)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td>p value</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 25 months</td>
<td>Ref</td>
<td>0.323</td>
</tr>
<tr>
<td>≤ 25 months</td>
<td>1.52 (0.41 – 5.60)</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Ref</td>
<td>0.132</td>
</tr>
<tr>
<td>Male</td>
<td>0.39 (0.11 – 1.36)</td>
<td></td>
</tr>
<tr>
<td>Residence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>Ref</td>
<td>0.071</td>
</tr>
<tr>
<td>Rural</td>
<td>5.83 (0.70 – 48.60)</td>
<td></td>
</tr>
<tr>
<td>Socioeconomic status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper/Middle</td>
<td>Ref</td>
<td>0.068</td>
</tr>
<tr>
<td>Lower</td>
<td>(Undefined)</td>
<td></td>
</tr>
<tr>
<td>Hemoglobin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ 8 gm/dl</td>
<td>Ref</td>
<td>0.001</td>
</tr>
<tr>
<td>&lt; 8 gm/dl</td>
<td>9.55 (1.91 – 47.73)</td>
<td></td>
</tr>
<tr>
<td>Skin manifestation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Ref</td>
<td>0.001</td>
</tr>
<tr>
<td>Yes</td>
<td>51.7 (8.84 – 302.4)</td>
<td></td>
</tr>
<tr>
<td>Hypercalcemia:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent</td>
<td>Ref</td>
<td>0.003</td>
</tr>
<tr>
<td>Present</td>
<td>8.80 (1.76 – 43.89)</td>
<td></td>
</tr>
<tr>
<td>Hypothermia:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Ref</td>
<td>0.004</td>
</tr>
<tr>
<td>Yes</td>
<td>6.86 (1.66 – 28.23)</td>
<td></td>
</tr>
<tr>
<td>RBS:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 54 mg/dl</td>
<td>Ref</td>
<td>0.014</td>
</tr>
<tr>
<td>≤ 54 mg/dl</td>
<td>3.50 (0.99 – 12.31)</td>
<td></td>
</tr>
<tr>
<td>Fever</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent</td>
<td>Ref</td>
<td>0.024</td>
</tr>
<tr>
<td>Present</td>
<td>5.50 (1.11 – 27.29)</td>
<td></td>
</tr>
</tbody>
</table>

**Keywords:** Hypophosphatemia, Refeeding syndrome, Severe acute malnutrition, skin manifestations
A SYSTEMATIC REVIEW OF PEDIATRIC CLINICAL TRIALS OF HIGH DOSE VITAMIN D
Nassr Nama1, 2, Kusum Menon2, Kelvis Iliriani3, Supichaya Pojsupap2, Margaret Sampson4, Katie O'Hearn2, Linghong Zhou1, Lauralyn McIntyre5, Dean Ferguson5, James Dayre McNally1, 2
1Faculty of Medicine, University of Ottawa, 2Department of Pediatrics, Children's Hospital of Eastern Ontario, Ottawa, Canada, 3School of Medicine, Trinity College, Dublin, Ireland, 4Department of Volunteers, Communication and Information Resources, Children's Hospital of Eastern Ontario, 5Ottawa Hospital Research Institute, Ottawa, Canada

Background and aims: Intake of vitamin D is recommended to prevent musculoskeletal disease. Recent evidence suggests that higher doses may improve non-musculoskeletal outcomes. Study objectives were to summarize the clinical trial literature, recognize areas with high quality evidence, and develop a resource database making it more accessible to end users.

Methods: Medline, Embase, and Cochrane databases were searched (January 2015) for pediatric trials administering doses higher than 400 IU (< 1 year) or 600 IU (≥1 year). An online searchable database of trials was developed containing relevant extracted information (https://vitamin.d.knackhq.com/pediatrics).

Results: 169 trials were identified. 84% of the trials focused on healthy children or high risk populations (e.g. renal, prematurity), with a recent rise in trials evaluating outcomes not directly related to the musculoskeletal actions of vitamin D (27% in 2010s). The only populations with more than 50 participants from low risk of bias trials were prematurity and respiratory illness. Finally, we created and validated the online searchable database using 13 recent systematic reviews. Using the database, we found 34/36 (94.7%) of the trials identified by the systematic reviews, while reducing the number of full papers to assess for eligibility by 85.2 % (±13.4 %).

Conclusions: Pediatric vitamin D field is highly active, with few high quality trials to provide answers on clinical efficacy. An open access online searchable database should assist end users in the rapid and comprehensive identification and evaluation of trials relevant to their population or question of interest.

Keywords: High-dose, Online database, Pediatrics, Systematic Review, Vitamin D
ABNORMAL GASTROINTESTINAL INNERVATION, MOTILITY, AND FEEDING DIFFICULTIES IN CHARGE SYNDROME

Alexandra Hudson¹, Meghan Macdonald¹, Kellie Cloney¹, Shelby Steele¹, Jason Berman²,³, Kim Blake¹,⁴
¹Dalhousie University, Halifax, Canada, ²Department of Pediatrics, Microbiology & Immunology and Pathology, Dalhousie University, ³Division of Pediatric Hematology/Oncology, ⁴Pediatrics, IWK Health Centre, Halifax, Canada

Background and aims: CHARGE syndrome is a genetic disorder in which feeding difficulties are highly prevalent and linked to increased mortality. Our aim was to investigate feeding and GI difficulties and model the GI tract innervation.

Methods: Three research studies were conducted. 1) A qualitative analysis of parent interviews to understand food packing in cheeks. 2) An investigation of feeding and GI motility issues through questionnaires. 3) CHARGE syndrome modeled in zebrafish to investigate GI innervation and motility.

Results: 1: 20 parents described their child’s (2-32 years) food packing, which was most common with bread (33%). Food was found in cheeks hours after a meal (35%). Parents were worried most about choking (30%).
2: Tube-fed children had significantly more GI symptoms and feeding difficulties than those who were oral fed. Choanal atresia/stenosis and cranial nerve IX/X dysfunction were significantly associated with more GI symptoms.
3: Immunohistochemistry demonstrated decreased branching in the GI tract enteric innervation. Fluorescent microbeads showed reduced motility through the tract.

Conclusions: These studies provide a comprehensive analysis of feeding and GI difficulties, from mouth to anus, in CHARGE syndrome.

Keywords: CHARGE syndrome, feeding difficulties, gastrointestinal innervation, gastrointestinal motility, gastrointestinal tract symptoms, packing
ASSOCIATED FACTORS TO BREASTFEEDING STOP IN INFANTS UNDER ONE YEAR WITH RESIDENCY IN THE METROPOLITAN AREA OF MONTERREY, MEXICO

César Lucio¹, Karla Chávez¹, Julieta Rodríguez¹, Juan Góngora², Rosario Meouchi³, Ruperto Cruz⁴, Erika González⁵, Ramón Rodríguez Barreda³
¹Pediatrics, ²Statistics and Evaluation, ³Medicine Student, ⁴Psychology Student, ⁵Nutrition Student, Escuela de Medicina, Tecnologico de Monterrey, Monterrey, Mexico

Background and aims: The rate of exclusive breastfeeding in Mexico is only 14.4%. The aim of this study is to determine the reasons why mothers stopped breastfeeding (BF) before the infant’s first year and to describe the behavior of the sociodemographic characteristics related to BF stop and weaning age.

Methods: A survey taken from Project FIRST study asking about factors that led to BF stop was applied to mothers. Descriptive statistics were obtained in order to observe the behavior of the variables. The odds ratio was calculated in order to describe the likelihood of obtaining one of the most reported reasons to stop BF and having a certain sociodemographic factor.

Results: The reasons to stop BF followed a continuous pattern: breastfeeding associated factors, nutritional factors and self-weaning factors. The most frequent reason to stop BF was the perception of the child not being satisfied with BF. Factors related to BF stop were mother’s age between 26 and 34, being married, being multiparous, having a professional degree and being affiliated to social security. Women being under 19, single and primiparous were factors related with less likelihood to stop BF.

Conclusions: The results gradually indicated the factors by which BF is stopped before the child’s first year. Knowing the factors associated with BF stop in our community will help design interventions aimed at increasing BF rates.

Keywords: Breastfeeding, female, Mexico, mothers, nutrition surveys, weaning
CLINICO ETIOLOGICAL PROFILE OF INFECTIONS IN ADMITTED CHILDREN WITH COMPLICATED SEVERE ACUTE MALNUTRITION(SAM)-A CROSS SECTIONAL PROSPECTIVE STUDY

Srikanta Basu¹, Chennakeshava Thunga ², Valinderjeet Randhawa³, Praveen Kumar²
¹Paediatrics, Lady Hardinge Medical College and KSCH, ²Paediatrics, ³Microbiology, Lady Hardinge Medical College, New Delhi, India

Background and aims: Infections are the most common cause of mortality in children with SAM. Treatment guidelines by WHO favors use of certain intravenous antibiotics in cases of complicated SAM across all regions. In view of paucity of evidence from the studies in South East Asia this study was conducted to assess proportion of infections associated with complicated SAM and the possible etiological agents in admitted children.

Methods: A hospital based cross sectional observational study was conducted in children between 2 months-59 months of age with complicated severe acute malnutrition. Blood and urine samples were collected from all the children for culture and sensitivity and further investigations were done to look for other source of infections as per study protocol. All the specimens were processed under standardized laboratory techniques.

Results: 107 consecutive children were enrolled in the study. Diarrhoea (60.7%), sepsis (37.38%) and respiratory tract infections (29.9%) were the main presentation associated with complicated SAM. Pathogens isolated from different body fluids were- blood (11.21%), urine (13.08%) and CSF (4.67%). CONS and E. coli was the most common organism isolated from blood and urine respectively. HIV and TB was diagnosed in 5.6 and 4.7 % respectively.

Conclusions: Faulty feeding practice, lack of exclusive breast feeding, maternal illiteracy was major risk factors for SAM in our study. Based on our finding of susceptibility of organisms to common antibiotics we recommend that Ciprofloxacin and Gentamicin should be used as a first line drug for children with complicated SAM.

Keywords: infections, SAM
Nutrition, Gastroenterology and Metabolism

COLON TRANSIT TIME TEST IN KOREAN CHILDREN WITH CHRONIC FUNCTIONAL CONSTIPATION

Sunhwan Bae*1, Mock Ryeon Park1, Hye Won Park1
1Pediatrics, Konkuk University Medical Center, Seoul, Korea, South

Background and aims: Each ethnic group has a unique life style, which affects bowel movement. The aim of this study is to describe the results of radio-opaque marker colon transit time (CTT) tests in Korean children who had chronic functional constipation based on highly refined data.

Methods: 190 children (86 males) who performed a CTT test under the diagnosis of chronic constipation according to Rome III criteria were enrolled. 225 children were excluded on the basis of CTT test result, defecation diary, and clinical setting.

Results: The median value(IQR) of CTT was 54 (37.5) hr in Encopresis group, and those in non-encopresis group was 40.2 (27.9) hr (P<0.001). The frequency of subtype between non-encopresis group and encopresis was statistically significant (P=0.002). The non-encopresis group (n=154, 81.1%) was divided into normal transit subgroup [n=84, 54.5%; median value and IQR of CTT=26.4 (9.6) hr], outlet obstruction subgroup [n=18, 11.7%; 62.4 (15.6) hr], and slow transit subgroup [n=52, 33.8%; 54.6 (21.0) hr]. The encopresis group (n=36, 18.9%) was divided into normal transit subgroup [n=8, 22.2%; median value and IQR of CTT=32.4 (9.9) hr], outlet obstruction subgroup [n=8, 22.2%; 67.8 (34.8) hour], and slow transit subgroup [n=20, 55.6%; 59.4 (62.7) hr].

Conclusions: Korean child showed shorter CTT than that of Western child in normal transit constipation group. Encopresis group had worse results of CTT test than those of non-encopresis group.

Image:
Keywords: Colon transit time, Constipation, Encopresis, Korea
Background and aims: Constipation is atypical presentation for celiac disease (CD) which can be easily overlooked. The aim of this study is to describe the frequency and clinical characteristics of children with CD who presented primarily with constipation.

Methods: We retrospectively reviewed our charts between the periods of January 2013 to June 2014, at King Khalid University Hospital, Riyadh, Saudi Arabia. We included children less than 18 years of age with biopsy confirmed diagnosis of CD. Data collected included the clinical characteristics of the patients, anthropometric measurements, treatment and the outcomes.

Results: 100 cases of CD were included with a mean age of 7 years (9 months-18 years). There were 68 males (68%). Fifty four percent presented with classical symptoms, while 46% presented with atypical presentations. Constipation was found in 15 patients (15%). The mean duration of the constipation was 7 months (±3 months) before the diagnosis. Severe constipation (bowel opening once a week) was observed in 8 (53.3%). Mild to moderate abdominal pain and distension were observed in the severe constipated children. None of the children had a satisfactory response to laxatives therapy prior to the diagnosis of CD; however, all of them responded very well when strict GFD was followed.

Conclusions: CD should be considered in the work up for patient with intractable constipation. Early diagnosis and early introduction of GFD improves the bowel habits among those patients.

Keywords: Celiac disease, CONSTIPATION
CONSUMPTION OF NON-COW’S MILK BEVERAGES AND HEIGHT IN EARLY CHILDHOOD

Marie-Elsa Morency* ¹ on behalf of TARGet Kids! (The Applied Research Group for Kids), Jonathon Maguire ²
¹Nutritional Sciences, University of Toronto , ²Pediatrics, St. Michael's Hospital, Toronto, Canada

Background and aims: Height is an important measure of children’s health and development. Cow’s milk consumption has been associated with taller children. Increasingly, parents are choosing non-cow’s milk beverages like soy and almond milk instead of cow’s milk. Non-cow’s milk contains less protein and fat which may limit children’s height. There is currently no evidence regarding the effect of non-cow’s milk consumption on children’s height. The primary objective was to determine whether non-cow’s milk consumption in preschool children is associated with height.

Methods: In this cross-sectional study, healthy Canadian children ages 12-72 months enrolled in TARGetKids! (The Applied Research Group for Kids) were included. Children’s milk intake was reported using a standardized parent completed questionnaire and height was measured using a calibrated length board or stadiometer.

Results: A total of 4005 subjects were included, eighty percent of children drank only cow’s milk, 6% drank only non-cow’s milk, 6.5% drank both cow and non-cow’s milk, and 7% drank neither. The average consumption of cow’s milk and non-cow’s milk was 2.03 ±1.06 and 1.77 ± 1.01 cups respectively. Children drinking non-cow’s milk had a mean height z-score of -0.04. Relative to children drinking cow’s milk, children drinking non-cow’s milk had a 0.2 unit lower mean height z-score.

Conclusions: Canadian parents are increasingly choosing non-cow’s milk beverages for their children because of perceived benefits. Having children who are taller may not be among them.

Keywords: None
DYNAMICS OF SERUM CONCENTRATIONS OF GLYCOSE, LACTATE, ALT, AST AND GGT IN CHILDREN WITH GLYCOGEN STORAGE DISEASE IA AND IB SUBTYPES DURING LONG-TERM THERAPY

Andrey Surkov†, Aleksandr Baranov†, Leyla Namazova-Baranova†, Aleksandra Karulina†, Aleksandr Potapov†, Nataliya Semjonova†, Anait Gevorkjan†, Kirill Savost'janov†, Aleksandr Pushkov†, Natalya Zhurkova†, Marina Shilova†

†Scientific Center of Children’s Health, Moscow, Russia

Background and aims: To study the laboratory characteristics of glycogen storage disease (GSD) Ia and Ib subtypes in children and substantiation of efficiency of long therapy with using uncooked cornstarch (UCS).

Methods: We examined 19 children: 8 with GSD Ia, 11 – with GSD Ib subtype. The observation period of 1-18 years, to an average of 7.0 [3.0; 9.0] years. All children are assigned a specific diet of the UCS and hepatoprotective therapy. Data are presented as median and interquartile range.

Results: Serum concentrations of fasting glucose increased from 1.5 [0.8;2.9] to 4.21 [3.7;5.2] mmol/l (p=0.000), lactate decreased from 9.9 [7.8;12.0] to 5.1 [3.1;11.0] mmol/l (p=0.012), ALT from 114,0 [59,0;213,0] to 45,0 [27,0;82,0] U/l (p=0.000), AST from 176,0 [96,0;274,0] to 53.0 [34,0;105,0] U/l (p=0.000), GGT from 53,0 [48,0;115,0] to 30.0 [19,0;41,0] U/l (p=0.000).

Conclusions: On the background of long-term therapy of UCS and hepatoprotectors in children with GSD type I achieved glycemic control, there was the relief of syndromes of cytolysis and cholestasis.

Keywords: carbohydrate metabolism, glycogen storage disease type I, lipid metabolism, purine metabolism, uncooked cornstarch
EARLY DETECTION OF LIVER FIBROSIS IN ASYMPTOMATIC CHRONIC HEPATITIS C INFECTION: ROLE OF MAGNETIC RESONANCE SPECTROSCOPY

Fardous H A. A. Abdel Hafez, Shereen M. Galal, Alam E.-D. Mohamed, Mohamed Z. Mohamed, Yasser G. A. El- Rhman

1Pediatrics, Children University Hospital, 2Pediatric, 3Radiology, 4Pathology, Faculty of Medicine, Assiut University, Assiut, Egypt

Background and aims: Background: Egypt is the highest affected country with Chronic hepatitis C with a prevalence of 22%. Seroprevalence of HCV is 0.2% in children < 11 years and 0.4% in children ≥ 11 years of age. Aim: To evaluate the use of 1H MRS and DW-MRI in early detection of liver fibrosis by measuring some metabolic components (Glx/lipid, PME/lipid and Glyu/lipid ratios) and ADC in liver tissues in relation to histopathological changes.

Methods: A cross-sectional study was conducted from 2012-2014, included thirty children (25♂ & 5♀) with asymptomatic chronic hepatitis C infection matched to twenty healthy children as controls. Anti HCV antibodies, HCV RNA PCR, liver function tests, abdominal ultrasonography, percutaneous liver biopsy and IH MRS (Glx/lipid, PME/lipid, Glyu/lipid ratios) and DW-MRI were done.

Results: METAVIR grades showed 29 cases (96.6%) had activity while 17 cases (56.7%) had fibrosis and +ve TGF-β1 in liver tissues in 19 cases (63.3%). Significant positive correlations between the results of 1H MRS and liver biopsy (METAVIR Grades, Stages and TGF-β1). Multivariant regression analysis showed that DW-MRI (reflected by ADC) was the good predictor for activity and Glyu/lipid ratio of MRS was the good predictor of fibrosis.

Conclusions: Early diagnosis of asymptomatic chronic hepatitis C is essential to prevent or delay liver fibrosis. TGF-β1 in liver tissue may be considered a useful better tool in the assessment of hepatic fibrosis. 1H MRS may be a non-invasive helpful diagnostic tool in assessing asymptomatic chronic hepatitis C children.

Keywords: children, DW-MRI, hepatitis C, liver biopsy, MRS
EFFECT OF ORAL ZINC SUPPLEMENTATION ON PERSISTENT DIARRHEA

Anand Dubey¹, Vaibhav katiyar²
¹Pediatrics, Maulana Azad Medical Collge, ²Pediatrics, MAULANA AZAD MEDICAL COLLEGE, NEW DELHI, New Delhi, India

Background and aims: Persistent diarrhea (PD) in children is associated with increased morbidity and growth retardation. Although many studies are available on the beneficial effect of zinc in children with acute diarrhea, there are very few studies defining its role in PD. The present study was planned to see the effect of oral zinc supplementation on duration of PD in young children.

Methods: Double blind RCT included children between 3 Mo-5Y with PD. Eligible children after informed written consent from parents were randomized by computer generated random sequence into receiving a zinc formulation or placebo. Zinc in dose of 10mg/D for <6months and 20mg/D for >6months of age and for control group, Placebo in identical looking bottles was given. Hemogram, stool examination including culture and other relevant investigations were done. Amount of IV fluids given/day and time to passage of first formed stool was noted.

Results: 60 children (30/arm) were recruited. No drop outs or deaths. At baseline, both groups were comparable.Diarrheal duration was significantly reduced by day 2,3 and 4 in zinc group compared to placebo (p=0.020 on D2,0.000 on D3, 0.017 on D4). No significant difference in need for unscheduled IV fluids among the groups (p=0.598). Duration of hospital stay was significantly reduced in zinc group compared to placebo (p=0.006).

Conclusions: In PD, zinc supplementation is beneficial in reducing diarrheal duration and hospital stay.

Keywords: PERSISTENT DIARRHEA, Zinc
EFFICACY OF DAILY SUPPLEMENTATION OF 800 IU VITAMIN D ON VITAMIN D STATUS AT SIX MONTHS OF AGE IN TERM HEALTHY INFANTS

Mayank Priyadarshi 1, M Jeeva Sankar 1, Nandita Gupta 2, Ramesh Agarwal 1, Vinod Kumar Paul 1, Ashok Kumar Deorari 1

1Paediatrics, 2Endocrinology & Metabolism, All India Institute of Medical Sciences, New Delhi, New Delhi, India

Background and aims: In an earlier study, we demonstrated a high prevalence of vitamin D deficiency (VDD) at 6 months of age in term healthy breastfed infants receiving daily supplementation of 400 IU from birth. We planned to evaluate if supplementation of 800 IU/day from birth would reduce the prevalence of VDD at 6 months of age in these infants.

Methods: In a prospective study, we supplemented term healthy infants (n=70) in dose of 800 IU starting within 48 hours of birth until 6 months of age. Serum 25(OH)D levels were measure at birth, 6 months and, in subsets of 23, at 6, 10 and 14 weeks. The primary outcome was prevalence of VDD [serum 25(OH)D level <20 ng/mL] at 6 months of age.

Results: Nearly 83% (58/70) infants were followed up until six months of age. The median (ng/mL; IQR) serum 25(OH)D levels at birth and 6 months of age were 10 (5-14) and 37 (29-55), respectively. The prevalence of VDD at birth was 91.3% (63/69), which reduced to 6.9% (4/58) at 6 months of age. However, four infants developed vitamin D excess (100-150 ng/mL) requiring reduction of the dose of supplementation. No infant developed vitamin D toxicity (>150 ng/mL).

Conclusions: A supplementation of 800 IU/day of vitamin D resulted in vitamin D sufficiency in most term healthy infants at 6 months of age. In view of potential risk of toxicity, however, this regime cannot be recommended in program settings in India. Alternative approaches including correction of vitamin D deficiency at birth by appropriate mega dose followed by routine supplementation should be explored as a strategy to achieve vitamin D sufficiency in infants.

Keywords: Term, Vitamin D, Vitamin D deficiency, vitamin D insufficiency
EXAMINING FRUIT AND VEGETABLE CONSUMPTION BEHAVIOR OF CHILDREN IN 10-14 AGE GROUP ON DIFFERENT SOCIO-ECONOMIC STATUS

Hümeýra Yazman¹, Muazzez Garipagaoglu*¹
¹Department of Nutrition and Dietetics, İstanbul Medipol University, İstanbul, Turkey

Background and aims: This study was conducted to evaluate vegetable and fruit consumption behavior of children on different socioeconomic status (SES) in 10 to 14 age group. The data of this study was collected in between dates 1.January -1.March.2015, through a questionnaire which was given to 636 adolescents in İstanbul, Turkey.

Methods: A questionnaire was prepared by authors and data collected from 636 adolescents. Body weight and height measures of those adolescents were taken and their body Mass Indexes were calculated. Their daily fruit and vegetable consumptions were determined.

Results: Median age of adolescents was 12.6±1.1 years and distributed as, 42.5% in low and 57.5% was in high SES group. Ratios of being slightly over weighted and obese, were found as 18.4% in girls and 25.8% in boys. Average daily vegetable and fruit consumption rate was determined as 480.8±261.2 grams. Adequate fruit and vegetable consumption rates were 38% on low SES, 62% on high SES and 39% on the whole group. A positive statistically significant relation was found in between adequate vegetable and fruit consumption with female gender, university or higher education of parents and working parents (p<0.05).

Conclusions: As a result, without depending on SES, vast majority of adolescents was found as consuming less vegetable and fruit than suggested. It was stated that as increasing vegetable and fruit consumption has a crucial role on conserving the current and future health, awareness of adolescents, parents and school administrators about this issue would be highly beneficial.

Keywords: adolescent, BMİ, Nutrition, Socioeconomic status, Vegetable and fruit consumption
GASTROINTESTINAL ENDOSCOPIC PRACTICE IN INFANTS: INDICATIONS AND OUTCOME.

Almoutaz Eltayeb<sup>1</sup>, Nagla abu faddan<sup>2</sup>, Maha brakat<sup>3</sup>, Yasser gamal<sup>4</sup>

<sup>1</sup>pediatric surgery, <sup>2</sup>pediatrics, <sup>3</sup>tropical medicine, <sup>4</sup>pathology, assiut university, assiut, Egypt

**Background and aims:** Gastrointestinal (GIT) endoscopic procedures are now common in most major pediatric centres and they can be safely performed in small infants. Aim of the work: to evaluate the diagnostic role and outcome of endoscopy in infants with different GIT disorders attending Assiut University Children’s Hospital, Egypt.

**Methods:** This is a retrospective descriptive hospital based study, conducted from January 2004 to December 2013. All infants (> one month of age and ≤ one year old) who underwent GIT endoscopy during the study period were included in this study. The following data were collected from the hospital database: basic demographic data, preliminary diagnosis, indication for endoscopy, sedation or anesthesia, type of endoscopy used, endoscopic finding, complications and final diagnosis.

**Results:** The present study included 177 infants they were 103 male and 74 female, 40.1% of them within the first 6 months of age. Intravenous sedation was used. Bleeding was the most common indication for endoscopic examination. Mucosal inflammations were the most common findings in infants presented with different gastrointestinal symptoms. Erythematus patches were the most common endoscopic findings in cases of inflammation. Mixed gastrointestinal lesions detected in 22 (12.4%) of infant included in this study. No complications occurred.

**Conclusions:** Pediatric gastrointestinal endoscopy is a valuable and informative diagnostic procedure in infants. Negative endoscopic findings have its role in either reassurance, assistance of diagnosing a functional etiology or may point to the need of further other investigations.
HIRSCHSPRUNG’S DISEASE DIAGNOSED IN ADOLESCENT WHO COMPLAIN OF CHRONIC CONSTIPATION

Seung-Taek Yu¹, Du-Young Choi¹
¹Pediatrics, Wonkwang University, College of medicine, Iksan, Korea, South

Background and aims: Hirschsprung’s disease is a motor disorder of the gut, which is caused by the failure of neural crest cells to migrate completely during intestinal development. The resulting aganglionic segment of the colon fails to relax, causing a functional obstruction. It occurs in about one in 5,000 of live births. Most patients present in infancy, and early diagnosis is important to avoid complications.

Methods: A 17-year-old boy was hospitalized due to abdominal pain.

Results: He was not able to defecate for last 2 months. Severe fecal impaction in colon & rectum was observed in his X-ray. So, we performed an abdominal CT. The result was a fecal impaction state of entire colon & rectum; more severe at rectum & sigmoid colon with diffuse increased wall thickening. So, the radiologist recommended that we rule out hirschsprung’s disease. We applied a glycerin enema to him for treatment of constipation and performed colon series. Colon series finding showed a diffuse dilatation of recto-sigmoid colon without any definite transitional zone. However we could not rule out the possibility of the transitional zone completely. On the 10th hospital day, he underwent a colonoscopy and an anorectal manometry. Their consequence was a strongly suspected hirschsprung’s disease. We recommended a surgical biopsy and treatment.

Conclusions: We reported a case of late hirschsprung’s disease discovered in the 17-year-old patient complaining a chronic constipation.

Keywords: CONSTIPATION
INCIDENCE OF REFEEDING SYNDROME AND ITS RELATED FACTORS IN CHILDREN PRESENTING WITH SEVERE ACUTE MALNUTRITION AT DR GEORGE MUKHARI ACADEMIC HOSPITAL, PRETORIA, SOUTH AFRICA

Siyazi Mda\textsuperscript{1,1}, Audrey Mbethe\textsuperscript{1}

\textsuperscript{1}Paediatrics and Child Health, Sefako Makgatho Health Sciences University, Pretoria, South Africa

\textbf{Background and aims:} The World Health Organization (WHO) guidelines for managing severe acute malnutrition (SAM) are crucial for avoiding complications including the refeeding syndrome. The hallmark of the refeeding syndrome is hypophosphatemia. We investigated the incidence of refeeding syndrome and related factors in children under 5 years hospitalized with SAM.

\textbf{Methods:} Children hospitalized with SAM hospital were sequentially enrolled, they were examined and their anthropometric indices obtained. All children were managed according to the WHO guidelines which include cautious feeding. Bloods were taken for calcium, magnesium and phosphorous and potassium on admission and on day 5 post admission. Children with severe hypophosphatemia (≤ 1 mmol/l) on day 5 were assessed as having refeeding syndrome.

\textbf{Results:} In all, 104 children were enrolled, and 46 were female. Mean age was 16 months, with mean height-for-age Z-score of -2.97 ± 2.62 (mean ± SD) and mean weight-for-height Z-score of -2.15 ± 1.87. Most children (63\%) had oedematous SAM, and 33\% of all children were HIV-infected.

Refeeding syndrome was noted in 16 children, giving an incidence of 15\%. Refeeding syndrome occurred more commonly in HIV-infected children, those with oedema and those with diarrhoea, shock and hypokalaemia with p-value <0.01. Ten of 104 children died, one of whom had refeeding syndrome.

\textbf{Conclusions:} Refeeding syndrome was observed in 15\% of children with SAM and it seemed to be associated with HIV, oedema and diarrhoea.

\textbf{Keywords:} children, Refeeding syndrome, Severe acute malnutrition
INTESTINAL BARRIER INTEGRITY AND FUNCTION IN INFANTS WITH CHOLESTASIS

Nagla Abu Faddan1, Tahra Sherif2, Omnia Mohammed2, Khalid Nasif3, Ebtesam Elgezawy2

1 pediatrics, 2 clinical pathology, Assiut University, Assiut, 3 biochemistry, Elminia University, Elminia, Egypt

Background and aims: The host safety is maintained by effective mucosal surface integrity and sealing the host interior against potentially harmful compounds. This gut barrier integrity can be affected by biliary obstruction and the absence of bile within the intestinal lumen. Aim of the work: To determine whether gut barrier integrity was impaired in infants with cholestasis by evaluation of I-FABP and I-BABP as markers for intestinal epithelial cell damage as well as plasma D-lactate level as a marker of gut wall permeability.

Methods: This case control study included 53 infants with cholestasis and 29 controls. Serum levels of of I-FABP and I-BABP and D-Lactate were measured in all cases and controls.

Results: Both groups of patients showed significantly higher levels of I-FABP and I-BABP than the controls. They did not differ significantly from control regarding their serum D-Lactate level. There was no difference between the two groups of patients (I and II) regarding any of the parameters studied. Furthermore no significant correlations were found between serum levels of I-FABP, I-BABP or D-Lactate with total or direct bilirubin levels in all cholestatic infants.

Conclusions: Intestinal epithelial barrier integrity is affected in infants with cholestasis, whatever the cause of cholestasis is and nearly all parts of the intestine are affected. Further research is recommended to find out the impact of this finding on the management of these infants. Also the relationship between physical intestinal barrier damage and its functional failure remains subject for further research.

Keywords: None
Iron Deficiency Anaemia presenting as Pica in a 13 Year Old Boy Managed at a Shell Supported Health Facility in the Niger Delta: A Case Report

Jerome Elusiyan¹, Akinwumi Fajola², Rakiya Usman³, Olayinka Mosuro², Henry Anyabolu⁴
¹Paediatrics, Obafemi Awolowo University, Ile-Ife, ²Community Health, SPDC, ³Paediatrics, Obio Cottage Hospital, Port Harcourt, ⁴Paediatrics, Obafemi Awolowo University, Ile-Ife, Nigeria, Ile-Ife, Nigeria

Background and aims: Pica is a habitual condition of eating non-food items like stone, paper, sand etc. It is rarely reported in Nigerian literature.

Methods: Case file of a boy managed for Pica was reviewed and relevant data extracted.

Results: FR, a 13 year old student presented with a 6 year history of eating sand and charcoal. He is often constipated with bowel motion once in three days. He is first of parent’s six children in a low socio-economic family. He has only been offered herbal remedies which has not produced any result. He has no dysmorphic facie and weighed 32kg and his height was 138cm. He was moderately pale. Blood film was consistent with iron deficiency anaemia. His serum ferritin level was 4.0ng/ml. Stool showed ova of *Ascaris lumbricoides*. Abdominal X-ray showed dense opacities with irregular edges extending from the rectum through to the transverse colon.

He was started on iron, vitamin C and albendazole. A positive reinforcement method of reward was instituted for him. His iron status has improved with near stoppage of ingestion of sand within 4 months of therapy.

Conclusions: This report showed poor health seeking behaviour for an easily diagnosed and apparently treatable condition.

Keywords: Child, Iron deficiency, pica
MUCOSAL MICROBIOTA PROFILE IN NEWLY-DIAGNOSED CROHN DISEASE; DATA FROM A MIDDLE EASTERN PEDIATRIC POPULATION.
Mohammad El Mouzan1, Ahmad Al Barrag2, Ahmad Al Sarkhy1, Asaad Assiri1, Kirill Korolev3, Harland Winter4, Yassin Hamid1, Mona Al Asmi1, Anjum Saeed1, Rajita Menon3
1Pediatrics, 2Microbiology, King Saud University, Riyadh, Saudi Arabia, 3Bioinformatics, Boston University, 4Pediatrics, Mass General Hospital for Children, Boston, United States

Background and aims: Most reports on the microbiome in Crohn’s disease (CD) are from Western populations. Aim: to evaluate the gut microbiota in a population of children from Saudi Arabia.

Methods: All children were Saudi nationals from 0.5 to 17 years of age at presentation. The diagnosis of CD was confirmed according to standard criteria. Controls were children who had a normal colonoscopy and no infection. Colonic mucosal samples (25 CD and 11 controls) were immediately frozen in – 80°C and shipped in dry ice to MR DNA, Shallowater, TX, USA where Amplicon pyrosequencing (bTEFAP®) was performed using 16S primers. Bioinformatic analysis was performed to assess microbial diversity as well as genera and species associated with CD.

Results:
There was a significantly reduced bacterial alpha diversity in CD mucosa (Shannon index \( p= 0.010 \)). There were significant species reduction of certain genera (ruminiclostridium; \( p = 0.00001 \)) and species (eubacterium siraeum; \( p= 0.00001 \), Dialister spp; \( p=0.000031 \)) in CD.

Conclusions: This report documents patterns of reduced microbial diversity and CD-associated bacteria similar to Western literature, suggesting minor effects of ethnicity and lifestyle.

Keywords: Gut microbiota, Crohn disease, Children, Saudi Arabia.
NO MORE DOUBT IN GASTRIC TUMORS. 1ST EUS IN A MEXICAN CHILD, CASE REPORT.
Erik Mier Escurra*, Ulises Leal Quiroga  1

1 Pediatrics, Sistema Multicéntrico de residencias médicas ITESM-SSNL, Escuela de Medicina del Tecnológico de Monterrey.,  2 Pediatric Gastroenterology, Christus Muguerza Sur, Monterrey, Mexico

Background and aims: Endoscopic Ultrasound (EUS) is useful to assess gastric tumors in children. However at present, in children there is little information on their indications, applications and risks, and difficulty in obtaining adequate training.

Methods: Case report: Male patient of 5 years with a family history of a grandfather with unspecified stomach cancer. The patient with the medical history of pyloric stenosis and a pyloromiotomy. Five months ago, its found in an abdominal ultra sound a gastric tumor. The patient was asymptomatic, and without other associated signs. For the study a endoscopy was made, a tumor was observed with an umbilication in the center suggestive of ectopic pancreas, endoscopic ultrasound reveals that it is dependent on muscular layer. It was resected, and pathology diagnosed gastric adenomyoma.

Results: Discussion: This is a rare tumor in children, where among its complications is a malignant transformation. Performing an endoscopic evaluation and biopsy its not useful in tumors located in the muscular layer. Hence the great importance of making an endoscopic ultrasound in the study of gastric tumors.

Conclusions: The gastric carcinomas are extremely rare in children, but common in adults, many may have been detected in childhood, or is misdiagnosed as a benign tumor by failure to carry out an endoscopy ultrasound.

Image:
**Keywords:** Adenomyoma, Endoscopic Ultrasound, EUS, Gastric tumors
PHYSICAL AND ENDOSCOPIC FINDINGS IN CAUSTIC AGENT INGESTION: CASE REPORT

Bilal Altan¹, Engin Burak Bulut¹, Yunus Burak Bayır¹, Cuneyt Atabek¹, Bahadır Caliskan¹, Ahmet Guven¹, Suzi Demirbag¹, İlhami Surer¹

¹Pediatric Surgery, Gulhane Military Medical Academy, Ankara, Turkey

Background and aims: Accidentally caustic agent ingestion in children can tremendously detrimental effect both physically and psychologically for patients and their family. Especially extent of the damage can not predictable when history is unclear.

Methods: Herein we report a 13 months-old girl who ingested a sink drain cleaner with severe alkaline (NaOH + KOH) content in tablet form.

Results: In initial physical examination revealed very severe caustic burns in oral cavity and perioral region. The intravenous fluid administration and antibiotic treatment were initiated immediately. Flexible endoscopy was performed 48 hours later. Although we have not found any burns beyond oral cavity alongside the entire esophagus.

Conclusions: As a conclusion in children initial clinical examination findings may not reflect the real damage status. Therefore endoscopic examination after caustic agent ingestion is mandatory to plan the future follow-up or treatment protocol.

Keywords: CAUSTIC AGENT, ENDOSCOPY
POST DISCHARGE FOLLOW-UP OF MODERATELY ACUTE MALNOURISHED CHILDREN IN DHAKA, BANGLADESH
Sayeeda Huq¹, I Hossain¹, M islam¹, T Ahmed¹
¹NCSD, icddr,b, Dhaka, Bangladesh

Background and aims: Moderate acute malnutrition in children is defined as a weight-for-height between -3 and -2 z-scores of the median without oedema. The numbers of children suffering from MAM in Bangladesh are three times that of SAM. Aim of this analysis is to evaluate the post compliance to follow-up and post discharge morbidity of moderately acute malnutrition.

Methods: This retrospective chart analysis performed among the under five moderate acute malnourished children attended in the Dhaka hospital of icddr,b from January to June, 2013 with diarrhoea and other co-morbidity.

Results: Among 1160 admitted children, 172 had moderate acute malnutrition and received follow up card. Children were followed initially 15 days apart then monthly. However, 25% children came for at least one follow-up visit. 14% of these children became severely acute malnourish after going The study children’s age was 9(6, 17) months. Compliance to monthly follow up visit gradually decreased from 74% to 12%, 9% and 2%. There is a linear relationship with the maternal education and number of follow-up visit. Commonly presented morbidity in the follow up visits were Upper Respiratory Tract Infection and angular stomatitis

Conclusions: There are considerable losses to follow-up in children after discharge from hospital. Establishment of an effective community follow-up would be ideal to address the problem of non-compliance with follow-up.

Keywords: None
**Nutrition, Gastroenterology and Metabolism**

**PREDICTORS OF MORTALITY IN CHILDREN WITH SEVERE ACUTE MALNUTRITION (SAM) IN NORTHERN INDIA**

Rana Chanchal ¹, Sarika Gupta¹, Sciddhartha Koonwar¹, Rashmi Kumar¹, Chandrakanta Kumar¹

¹Department of Pediatrics, King George’s Medical University, Lucknow, UP, India

**Background and aims:** Child mortality depend heavily on reducing malnutrition, which is responsible, directly or indirectly, for 35% of deaths among children under five. The aim of the study is to find out the impact of different clinical and biochemical features on the nutritional status of children and its final outcome.

**Methods:** Study was conducted in a tertiary care teaching hospital in Northern India. It was a prospective observational study done over one year. Patients with WHO defined SAM from 6 months to 5 years were included in the study. A data collection form was designed and all the details were recorded in it. Standard statistical methods of analysis were used.

**Results:** Out of 65 SAM patients enrolled 83% belonged to lower socioeconomic class. 55% of mothers were illiterate. Only 12.3% were completely immunized and only 20% were exclusively breast fed for 6 months. Fever, loose stools and past history of measles was present in 57%, 35% and 20% respectively. Whereas pallor, hypothermia, signs of vitamin A deficiency and skin manifestations was present in 92%, 41.5%, 41.5% and 25% of patients respectively. On investigating 78% had hypokalemia, 60% had hypophosphatemia, hypoalbuminemia was in 65% and 31% were hypoglycaemic. To identify, independent predictor(s) of final outcome of SAM patients a multivariate analysis was which showed that only sensorium of patient at presentation (GCS ≤ 7) is significantly related with mortality (OR=28.42 (1.05 – 768.0) p<0.05)

**Conclusions:** Sensorium (GCS ≤ 7) of the patients is the only independent predictor of mortality in patients with severe acute malnutrition.

**Image:**
<table>
<thead>
<tr>
<th>Predictors</th>
<th>Univariate (crude or unadjusted)</th>
<th>Multivariate (Adjusted)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td>p value</td>
</tr>
<tr>
<td><strong>Age:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 25 months</td>
<td>Ref</td>
<td>0.234</td>
</tr>
<tr>
<td>≤ 25 months</td>
<td>2.67 (0.51 - 14.02)</td>
<td></td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Ref</td>
<td>0.892</td>
</tr>
<tr>
<td>Male</td>
<td>1.09 (0.27 - 4.43)</td>
<td></td>
</tr>
<tr>
<td><strong>Residence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>Ref</td>
<td>0.027</td>
</tr>
<tr>
<td>Rural</td>
<td>0.21 (0.05 - 0.91)</td>
<td></td>
</tr>
<tr>
<td><strong>Socioeconomic status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper/Middle</td>
<td>Ref</td>
<td>0.149</td>
</tr>
<tr>
<td>Lower</td>
<td>Undefined</td>
<td>3.79 (0.00 - 0.00)</td>
</tr>
<tr>
<td><strong>Hemoglobin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ 8 gm/dl</td>
<td>Ref</td>
<td>0.610</td>
</tr>
<tr>
<td>&lt; 8 gm/dl</td>
<td>0.68 (0.17 - 2.80)</td>
<td></td>
</tr>
<tr>
<td><strong>Skin manifestation:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Ref</td>
<td>0.059</td>
</tr>
<tr>
<td>Yes</td>
<td>4.00 (0.95 - 16.87)</td>
<td></td>
</tr>
<tr>
<td><strong>Sensory</strong>:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCS &gt; 7</td>
<td>Ref</td>
<td>0.042</td>
</tr>
<tr>
<td>GCS ≤ 7</td>
<td>4.67 (1.05 - 20.6)</td>
<td></td>
</tr>
<tr>
<td><strong>Hypothermia:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Ref</td>
<td>0.042</td>
</tr>
<tr>
<td>Yes</td>
<td>4.67 (1.05 - 20.66)</td>
<td></td>
</tr>
<tr>
<td><strong>RBS:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 54 mg/dl</td>
<td>Ref</td>
<td>0.042</td>
</tr>
<tr>
<td>≤ 54 mg/dl</td>
<td>5.25 (1.24 - 22.32)</td>
<td></td>
</tr>
<tr>
<td><strong>HIV Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non reactive</td>
<td>Ref</td>
<td>0.032</td>
</tr>
<tr>
<td>Reactive</td>
<td>14.4 (1.54 - 380.4)</td>
<td></td>
</tr>
</tbody>
</table>

**Keywords:** Severe acute malnutrition
PREVALENCE AND CLINICAL PROFILE OF INFANT DYSCHEZIA AMONG PATIENTS SEEN IN SELECTED HEALTH FACILITIES IN METRO MANILA

Ria Puspitasari*, Gatcheco Felizardo$^1$

1Pediatrics, Jose R. Reyes Memorial Medical Center, Manila, Philippines

**Background and aims:** Infant dyschezia, manifested by straining and fussing associated with the passage of unremarkable soft stools. At present, studies as well as awareness of primary physicians on this topic is limited. This study aims to determine the prevalence and clinical profile of infant dyschezia among patients seen in selected Health Facilities in Metro Manila.

**Methods:** This is a prospective cross sectional study conducted among healthy infants 1 to 6 months of age who followed up in several health facilities in Metro Manila from May until August 2014. A validated questionnaire was used for data collection.

**Results:** A total of 350 subjects were included. Fifty-eight subjects fulfilled the Rome III criteria for Infant Dyschezia. There was no significant association on the presence of infant dyschezia to the subjects' age and sex. On the other hand, the risk for infant dyschezia was 5x higher among subjects who had mixed feeding and 9x higher among subjects who were exclusively formula fed. Twenty-two subjects screamed during bowel movement while 25 had faces becoming red or purple.

**Conclusions:** The prevalence of infant dyschezia in this study was 16.6%. Type of feeding was significantly associated with infant dyschezia. The risk was higher among those who were either formula or mixed fed than those who were fully breastfed. Moreover, screaming during bowel movement and face becoming red/purple were also significantly noted.

**Keywords:** Infant dyschezia
PREVALENCE OF ROTAVIRAL INFECTION AMONG CHILDREN ADMITTED WITH ACUTE DIARRHOEA IN A TERTIARY CARE HOSPITAL OF TRIPURA, INDIA
Nilratan Majumder, Nazrul Islam and Department of Paediatrics, Agartala Government Medical College, Tripura, India
Department of Paediatrics, Agartala Government Medical College, Agartala, India

Background and aims: Background: Rota virus has been recognized as the most common cause of severe diarrhoea in children. Data on rota virus disease burden are needed across India to support reasonable, evidence-based decisions regarding any intervention. Aims: To study the prevalence of rota virus infection in acute diarrhoea among children below five years age and clinical profile of rota viral diarrhoea.

Methods: Present cross-sectional study was conducted in Agartala Government Medical College, Tripura from Sept 2014 to Aug 2015. Stool samples from 72 hospitalized children below five years with acute diarrhoea were tested for rota viral antigen by ELISA method. Caregivers were interviewed, physical examination was conducted and assessment of dehydration was done and managed as per WHO Guidelines.

Results: Out of 72 cases of acute diarrhoea, 35 (48.61%) cases were between 6-24 months age group and 37 (51.39%) were above 24 months. Out of total 72 stool samples, 23 (31.94%) were rota virus positive. 16 (69.57%) cases were in 6-24 months age group, 13 (56.52%) were male children. Rota virus infection was observed throughout the year, with peak (60.80%) during Nov-Feb (winter season). 19 cases (82.61%) were admitted with moderate to severe dehydration and resolved by 6 days (91.32%). No death was observed. Only 4 (5.56%) cases received oral rota vaccine and one case (4.35%) among 23 rota viral diarrhoea cases received rota vaccine.

Conclusions: The present study highlights that rota virus is a significant cause of acute diarrhoea in this part of country and mainly affects children between 6-24 months age.

Keywords: Acute diarrhoea, Rota virus
Refeeding syndrome in severe acute malnutrition: the role of magnesium and thiamin

Laurent Hiffler¹, Daniel Martinez Garcia², Benjamin Rakotoambinina³
¹Dakar Unit, Medical Department, Médecins Sans Frontières (Doctors Without Borders), Dakar, Senegal,
²Medical Department, Médecins Sans Frontières (Doctors Without Borders), Barcelona, Spain, ³Unit of Nutrition Physiology, Antananarivo University, Antananarivo, Madagascar

Background and aims: Refeeding syndrome is characterized by electrolyte imbalances including hypomagnesemia and is associated with thiamine deficiency. It leads to congestive heart failure, neurological and hematological complications. Signs are often misinterpreted as sepsis, cardiac failure, pneumonia and sudden death. Diagnosis is rarely made and therefore its prevalence probably underestimated particularly in resource-limited settings where electrolytes monitoring are often not available. We delve here into thiamine and magnesium interaction understanding and their potential links with refeeding syndrome.


Results: Refeeding after a starvation period, initially induces a rapid electrolyte shift inside the cell causing hypophosphatemia, hypokaliemia, and hypomagnesemia. There is also a functional thiamine deficiency secondary to its intracellular hyperutilization associated with refeeding. Hypomagnesemia is common in critically ill children. Hypomagnesemia patients do not respond well to thiamine supplementations, magnesium being a thiamine co-factor. Thiamine and magnesium needs are underestimated in critically ill severely malnourished children.

Conclusions: Thiamine administration should be associated with magnesium in the critically ill child with severe acute malnutrition. Therapeutic milk content should be urgently revised for both micronutrients and clinical trials should address the current gaps in the initial refeeding phase.

Keywords: Refeeding syndrome, thiamine, magnesium, severe acute malnutrition, hypomagnesemia, thiamine deficiency, critically ill children
REHABILITATION OF BANGLADESHI SEVERELY MALNOURISHED INFANTS AGED <6MONTHS: A RANDOMISED, CONTROLLED TRIAL OF THREE RECOVERY DIETS (F-100, DILUTED F-100 AND INFANT FORMULA)

M Munirul Islam¹, Tahmeed Ahmed¹, Md. Iqbal Hossain¹, Sayeeda Huq¹, A M Shamsir Ahmed¹
¹Nutrition and Clinical Services Division, icddr,b, Dhaka, Bangladesh

Background and aims: Background and Aims: Information is limited on the rehabilitation diets for infants <6 mo old suffering from severe acute malnutrition (SAM). Body weight gain, energy intake, and potential renal solute load (PRSL) in infants were compared when they were fed F-100, diluted F-100 (F-100 D) or infant formula (IF).

Methods: Infants <6mo old (n=153) were enrolled in a double blind randomized clinical trial who had weight-length Z-score (WLZ) < -3 and/or bi-pedal oedema on admission. Infants were randomly assigned to any one of the three rehabilitation diets. They were fed diets at 130ml/kg/d in 12 feeds initially for 2 d and 8 feeds thereafter. 2 ml blood was taken on study d 1, 3, and 7 for measuring serum sodium, potassium, chloride, total CO₂, creatinine and osmolality. Urinary specific gravity and osmolality/creatinine ratio was also measured. Renal solute load and PRSL was calculated. Infants were discharged when they gained weight 15% of the admission bodyweight or became oedema free or had an oedema free WLZ ≥ -2.

Results: Dietary intake (g/day) across study groups is not different (p=0.18), but infants consumed more energy (kcal/day) who received F-100 (p<0.001). Infants gained significantly more weight when fed F-100 and F-100 D than IF (p=0.023). Recovery time was longer when they received IF (13, 11 and 10 d for IF, F-100 D and F-100 respectively; p=0.043). PRSL was significantly more when fed with F-100 (<0.0001), but it was within normal limit.

Conclusions: Both F-100 and diluted F-100 can be used as an effective rehabilitation diets in infants <6 mo suffering from SAM.

Keywords: Diluted F-100, F-100, Severe acute malnutrition, under 6 mo
SPECIFIC “ANTI-COLIC FORMULA” REDUCES INFANTILE COLIC SYMPTOMS AND IMPROVES QUALITY OF LIFE SCORING IN INFANTS AND THEIR FAMILIES

Ioannis Xinias 1, Antigoni Mavroudi1, Ioannis Roilides1, Maria Lykogeorgou1, Varvara Delivorgia1, Vasilis Milingos1, Maira Mylonopoulou 1

13rd Pediatric, Hippocration Hospital, Aristotle University, Thessaloniki, Greece

**Background and aims:** Infantile colic is a common, distressing problem. Literature suggests dietary modifications (hydrolyzed formulas, probiotics, prebiotic supplementation, low lactose containing formula). Aim was to evaluate the efficacy of an “anti-colic formula” containing partially hydrolyzed milk proteins, reduced lactose concentration and probiotic (B. Lactis) and prebiotic (GOS) supplementation (Rontamil AC®) in babies with colic.

**Methods:** 21 full-term bottle fed babies suffering from colic (Rome III criteria) were included. Babies were fed with the special “anti-colic formula” for at least 2 weeks. Babies' parents were asked to complete the form of a Quality of Life (QoL) Questionnaire, which assesses the burden in everyday life living with their child's colic.

**Results:** Significant improvement was observed in following domains of QoL (p<0.05): every day QoL, sleep QoL, QoL related to work, parent-child relationship, stress in everyday life, relationship with friends, overall QoL and reduction of crying time.

**Conclusions:** Specific “anti-colic formula” containing partially hydrolyzed milk proteins with reduced lactose and supplementation with B. lactis plus GOS (Rontamil AC®) significantly reduces the duration of daily crying as well as the burden of the overall QoL as a result of infantile colic during the first months of life.

**Keywords:** Anticolic formula, Infantile Colic, Quality of life
THE CHARACTERISTICS OF HELICOBACTER PYLORI GASTRITIS IN CHILDREN: A PRIVATE SINGLE HOSPITAL EXPERIENCE

Asaad Assiri\(^1\), Anjum saeed\(^2\)

\(^1\)PRINCE ABDULLAH BIN KHALID CELIAC DISEASE RESEARCH CHAIR, DEPARTMENT OF PEDIATRIC, COLLEGE OF MEDICINE, KING SAUD UNIVERSITY, \(^2\)DEPARTMENT OF PEDIATRIC, KING SAUD UNIVERSITY, RIYADH, Saudi Arabia

**Background and aims:** Helicobacter Pylori (H. pylori) infects 50% of the world population. This study was aimed to review the characteristics of H. pylori gastritis in children at a private center.

**Methods:** It was a retrospective study conducted at pediatrics division of a private tertiary care hospital, Riyadh. Confirmed cases of H. pylori gastritis based on endoscopy and histopathology were included from Jan 2009 to Jan 2014. Clinical profile of these patients including age at presentation, gender, socioeconomic status, clinical presentation, treatment prescribed, endoscopic and histopathological findings was reviewed.

**Results:** Out of 202 patients, 49 (24%) were found to have H. pylori gastritis. Mean age of presentation was 10.5±2.53 years. Females were 58%. Abdominal pain and heartburn were the major presentation in 84% and 28% respectively. Antral nodularity was the commonest feature on endoscopic examination. All patients had chronic active gastritis. Atrophic gastritis was a feature in few patients while most had non-atrophic gastritis. None of the patients showed metaplastic, dysplastic or malignant changes. 82% responded well to eradication therapy.

**Conclusions:** The similarity of features of H. pylori in this private practice population suggests similarity in different subsets of the Saudi population. Prospective studies are needed to clarify risk factors in our community.

**Keywords:** CHILDREN, GASTRITIS, H.PYLORI
THE INFLUENCE OF THE DIRECT / TOTAL BILIRUBIN SCREENING PROGRAM ON THE FACTORS ASSOCIATED WITH DELAYED KASAI OPERATION FOR BILIARY ATRESIA

Yu-Chun Chiu 1, 2, Kai-Chi Chang 1, 3, Jia-Feng Wu 1, Huey-Ling Chen 1, 4, Yen-Hsuan Ni 1, 4, Hong-Yuan Hsu 1, Mei-Hwei Chang 1, 4 on behalf of corresponding author
1Pediatrics, 2Medical education, 3Emergency, 4Hepatitis Research Center, National Taiwan University Hospital, Taipei, Taiwan, China

Background and aims: Infant stool card screening in Taiwan decreased the delayed Kasai operation (60 day-old) rate. To improve the early diagnosis of biliary atresia (BA) and operation timing, we promoted direct/total bilirubin screening program for icteric infants at 30-day-old since 2012.

Methods: This prospective cohort followed the newly diagnosed BA patients in 2009.01 to 2015.12 in Taiwan. Factor contributing to delayed operation was categorized as parental cognitive deficiency, inadequate lab inspection and difficult diagnosis. Association between the delay operation and factors was verified by $X^2$ analysis. P value $\leq 0.05$ was considered statistically significant.

Results: A total of 232 cases were enrolled. Eighty (34.5%) patients received Kasai operation after 60-day-old. No cases in 2012-2015 reported never saw the stool card. The weight of inadequate lab inspection decreased from 10.3% to 7.8%, difficult diagnosis 51.7% to 33.3% and parental cognitive deficiency 34.5% to 58.9%. These changes were statistically significant ($p = .045$).

Conclusions: This screening program improved the medical factors associated with delayed Kasai operation. More education should be offered for parents.

Keywords: biliary atresia, delayed Kasai operation, screening, bilirubin
THE STOOL COLOR CARD AS A SCREENING TOOL FOR DETECTION OF BILIARY ATRESIA IN INFANTS YOUNGER THAN 90 DAYS OF AGE: A META-ANALYSIS OF DIAGNOSTIC TEST ACCURACY

Mark Benjamin Quiazon, Ana Katherina Rodriguez, Leonila Dans, Ma. Cecilia Alinea

1Department of Pediatrics, Philippine General Hospital, Manila, Philippines

Background and aims: The stool color card, which uses acholic stool as an indicator for possible biliary atresia (BA), is an emerging screening tool for early diagnosis of the disease. This study aims to systematically review and pool available data on the accuracy of stool color cards for detecting BA in infants younger than 90 days.

Methods: A search for articles assessing the utility of stool color cards for diagnosing BA in infants less than 90 days of age was done on electronic databases, specialty journals, local study archives, conference proceedings, and among available unpublished studies. Specificities and sensitivities from eligible studies were collected, pooled, and analyzed to determine relevant summary statistics.

Results: Three eligible studies were identified which had moderate risks for bias which primarily stemmed from a lack of experimental design and blinding. Analyses yielded the summary sensitivity and specificity of 83% (95% CI 75-89%) and 100%, respectively, with a positive likelihood ratio of 670 (95% CI 102-4397) and a negative likelihood ratio of 0.18 (95% CI 0.12-0.26).

Conclusions: The stool color card is an accurate screening tool that can be used for the early identification of infants who may be at risk of having BA and may benefit from early diagnosis and intervention.

Keywords: Biliary atresia, Diagnostic test accuracy, Screening, Stool color card
TRICHO-HEPATO-ENTERIC SYNDROME: THE FIRST BALKAN REPORTED CASE

Ioannis Xinias*, Antigoni Mavroudi1, Ioannis Roilides1, Florence Lacaille2

13rd Pediatric, Hippocration Hospital, Aristotle University, Thessaloniki, Greece, 2Service de gastroentérologie-hépatologie-nutrition pédiatriques, CHU Paris - Hôpital Necker-Enfants Malades, Paris, France

Background and aims: Tricho-hepato-enteric Syndrome, THE (Syndromic or Phenotypic Diarrhea) is a rare inherited disease characterized by facial abnormalities, intractable diarrhea, failure to thrive, liver and hair abnormalities. It is though to be a genetic disorder with an autosomal inheritance pattern and poor prognosis. Our aim was to report the 1st Balkan reported case.

Methods: We report about a boy with THE syndrome that was admitted in our clinic due to failure to thrive and intractable diarrhea. The baby had intractable diarrhea since birth, failure to thrive, prominent forehead and cheeks, broad nasal root and widely spaced eyes (hypertelorism), woolly hairs, easily removed and poorly pigmented, mild elevation of liver enzymes. History revealed a 30 weeks pregnancy, IUGR and LBW neonate.

Results: The boy was putted in total parenteral nutrition due to persistent malabsorption. Thorough investigation revealed specific gene mutations indicative for THE syndrome. In a period of about 2 ½ years of hospitalization and continuous TPN, the child had 3 episodes of septicemia, 1 episode of fungemia, 3 episodes of hypoglycemia and thrombosis of the 3 central veins. A fourth episode of septicemia was fatal for the baby who died due to multiple organ failure.

Conclusions: THE syndrome is a rare inherited condition with congenital diarrhea, failure to thrive, facial and hair abnormalities and finally poor prognosis due to TPN complications.

Image:
Keywords: Tricho-Hepato-Enteric syndrome, Syndromic, Phenotypic Diarrhea
ULCERATIVE COLITIS IN A NIGERIAN CHILD: A CASE REPORT.
Rosemary Ewah-Odiase 1, Irekpono Omoike 1, George Akpede 1, Casimir Omuemu 2, Darlington Obaseki 3, Richardson Udaze 1
1 Paediatrics, Irrua Specialist Teaching Hospital , Irrua, 2 Internal Medicine, 3 Pathology, University of Benin Teaching Hospital, Benin City, Nigeria

Background and aims: Ulcerative colitis (UC) is an idiopathic chronic inflammatory disorder characterised by unpredictable exacerbations and remissions. It is thought to be rare in Africans especially amongst paediatric age group and there has been only one presumed paediatric case report from Nigeria.

Methods: NOT APPLICABLE

Results: Case Presentation:
We report the case of a 13.5 year old boy who presented with typical symptoms and in whom the diagnosis of UC was confirmed by endoscopic examination and histology. He responded well to treatment with sulfasalazine tablets.

Conclusions: This plus an earlier report suggest that UC may not be as rare in Nigeria as it was previously thought to be perhaps due to under-diagnosis caused by a lack of diagnostic facilities. A high index of suspicion is required in diagnosis and epidemiologic studies are required to determine its actual prevalence.

Keywords: Child, Nigerian, Ulcerative colitis
VALUE OF 24-HOUR DELAYED FILM OF BARIUM ENEMA FOR EVALUATION OF COLON TRANSIT FUNCTION IN YOUNG CHILDREN WITH CONSTIPATION

Sun Hwan Bae*, Hye Won Park, Ha Young Yoo

1Pediatrics, Konkuk University Medical Center, Seoul, Korea, South

Background and aims: A 24-h delayed film of barium enema (BE) has been used as a supplementary method in structural evaluations. The aim of this study was to evaluate the utility of a 24-h delayed BE film for assessing colon transit function in young children with constipation.

Methods: 70 children who met the Rome III criteria for constipation performed both single-contrast BE and radio-opaque marker colon transit time test (CTTRM). M:33, mean age (range): 5.63 ± 2.94 (2 - 14) years). The basic principle of the study is “velocity =distance/ time”. Time values were identified in both studies, and the colon length and distance of barium movement were measured on the 24-h delayed BE film. Thus, colon transit velocity values could be calculated using both methods. The correlation between colon transit velocity using a 24-h delayed BE film versus CTTRM was analyzed statistically.

Results: Median value (IQR) of colon transit velocity using CTTRM was 1.57 cm/h (1.07-2.89), and that using BE of that was 1.58 cm/h (0.94-2.07). The Spearman correlation coefficient was 0.438 (P < 0.001) for the overall group. The correlation was strongest in children younger than 4 years (r =0.537; P = 0.032).

Conclusions: Although the correlation between BE and CTTRM was not very strong, the 24-h delayed BE film could provide broad information about colon transit function in young children, especially those under 4 years who usually cannot undergo CTTRM.

Image:
Keywords: Barium, Constipation, Gastrointestinal transit
Nutrition, Gastroenterology and Metabolism

VITAMIN D PARAMETERS IN CHILDREN WITH INTESTINAL PATHOLOGY

Nigora Alieva¹, Dilorom Akhmedova², Matluba Alimova*², Altinoy Kamilova²
¹Tashkent pediatric medical institute, ²Republican Specialized Research Medical Center of Pediatrics, Tashkent, Uzbekistan

Background and aims: Deficit of vitamin D has been widely distributed among children with diseases of the large intestine

Aims. To determine level of vitamin D and parameters of calcium metabolism in children with pathology of the small intestine

Methods: The study involved 160 children with pathology of the small intestine aged 0-16 years. The children were divided into 3 groups: 60 - with celiac disease, 60 - with chronic enterocolitis, 40- with allergic enterocolitis (AE). Vitamin D was defined with use of immunoenzymatic assay

Results: Deficit of vitamin D was revealed in 80% of patients with celiac disease, of them in 7,2% – lower than 10 ng/ml. Insufficient contents of vitamin D was found in 20% patients. In chronic enterocolitis deficit of vitamin D was noted in 57% patients that was 1,4 times les than in patients with celiaca. Insufficient contents of vitamin D was recorded in 43% patients that was 2 times more frequent in comparison with patients with celiaca. In children with deficit of vitamin D was revealed in 25% children that was 3 times more seldom than in patients with celiaca. Insufficient contents of vitamin D was revealed in 62% children with AE

Conclusions: In the patients with diseases of small intestine there was established high percent of vitamin D deficit, more marked in children with celiaca and chronic postinfectious enterocolitis

Keywords: None
Background and aims: Vitamin D deficiency (VDD) is prevalent widely even among populations at low latitude. The recommendation of 400 IU/day by international bodies like AAP (American Academy of Pediatrics) is unlikely to be sufficient in this scenario. We sought to evaluate the prevalence of VDD at 3 months in term healthy infants supplemented with daily Vitamin D (400 IU) from birth.

Methods: In this prospective interventional study, 111 term infants were enrolled at birth and started on vitamin D (oral 400 IU) daily. Primary outcome was the prevalence of VDD (levels <20ng/mL) and vitamin D insufficiency (VDI, vitamin D levels 20-29 ng/mL) at 14 ± 2 weeks of age. Secondary outcomes were the prevalence of a) VDD or VDI at birth, b) metabolic rickets (elevated serum alkaline phosphatase> 420 U/L) at 14 ± 2 weeks and c) clinical rickets at 14 ± 2 weeks.

Results: The gestation and birth weight of enrolled neonates were 38.0 (37-40) wks and 3059 ± 329g, respectively. Nearly 83.2% (n=89) had VDD and 12.2% (n=13) had VDI at birth. Post-supplementation 52.2 % (95% CI (41.4% to 62.8%)) were deficient and 38.9% (95% CI (28.8 to 49.7%)) were insufficient. The mean 25(OH) Vitamin D was 12.5 ± 7.7 ng/mL at birth and 19.4± 7.3 ng/mL at 14 weeks of age. Clinical rickets was detected in four infants.

Conclusions: The prevalence of VDD and VDI continues to be high at 14 weeks of age in term healthy infants in India despite a daily oral dose of 400 IU of vitamin D3, possibly indicating it as a suboptimal dose.

Keywords: Term infant, Vitamin D deficiency
Background and aims: VitD insufficiency is a concern for children who are in their prime years for building bone stores and for those with disorders that require bone healing. Our purpose was to measure the prevalence of VitD insufficiency and to identify risk factors.

Methods: Consecutive, prospective study consisted of children ages 2-17 yrs (30 volunteers and 132 patients) without known health problems that alter VitD absorption or metabolism or the ability to play outside. Serum 25OHVitD was measured and questionnaires were used for demographics and risk factors.

Results: There were no differences between patients and controls so data were combined. Mean age=11.9 years. Mean VitD=26.4ng/ml and was insufficient or deficient for 72%. Mean BMI percentile (BMI%)=64.4. 39% were overweight/obese. VitD levels were significantly (p<0.05) lower in older children, winter, non-white race, BMI, BMI%, 0-1 glasses of milk and <20 minutes outside per day and Medicaid/Uninsured.

Conclusions: Our prevalence of 72% VitD insufficiency suggests routine screening may be necessary to prevent long-term effects on bone health. Those at highest risk are non-white children with obesity, on Medicaid or have no insurance, who drink less than 2 glasses of milk per day and spend less than 20 minutes outdoors per day.

Keywords: Adolescents, Children, Vitamin D
A DOUBLE MINIMALLY INVASIVE TECHNIQUE TREATING PECTUS EXCAVATUM ASSOCIATED WITH CONGENITAL HEART DISEASE

Weize Xu¹, Jianhua Li¹, Ru Lin¹, Qiang Shu¹
¹Cardiothoracic Surgery, Heart Center, Hangzhou, China

Background and aims: To investigate the method and feasibility of double minimally invasive technique treating pectus excavatum (PE) associated with congenital heart disease (CHD).

Methods: From July 2006 to June 2014, 10 children were treated by double minimally invasive technique, including 8 males and 2 females, aged 4 years to 6 years 5 months (average 5 years and 4 month), weight were from 16 kg to 20 kg, the average were (18±1.79) kg, CT Haller index were 3.9-5.0, the average were (4.35±0.43). Including 6 cases with ventricular septal defect (VSD) closure by minimally invasive closure device, 5 were membranous VSD, 1 was subaortic VSD, diameter 4-5 mm. 4 cases with atrial septal defect (ASD) closure, diameter 12-16 mm. Take the Nuss procedure after the minimally invasive operation, take a drain of pericardial mediastinal.

Results: All operations were successful. Extubation occurred in 5-11 h after operation (mean 8.17±2.04 h). The drain was removed in 48 hours later. No operative mortality, hemorrhage, thoracic organ damage and other severe complications. 1 patient in the group had delayed wound healing after operation and was successfully discharged. In 6 cases of bar removal, satisfactory effect.

Conclusions: Double minimally invasive technique treating pectus excavatum associated with congenital heart disease is safe and satisfactory, which can avoid or reduce the difficulty and risk of second stage surgery.

Keywords: minimally invasive technique, NUSS procedure
PEDIATRIC SURGERY AND SURGICAL SUB-SPECIALTIES

AGE AT SURGERY AND OUTCOMES OF AN UNDESCENDED TESTIS

Francisco Schneuer¹, Andrew Holland², Gavin Pereira³, Sarra Jamieson⁴, Carol Bower⁴, Natasha Nassar¹

¹Menzies Centre for Health Policy, School of Public Health, ²Discipline of Paediatrics and Child Health, The Children’s Hospital at Westmead, Sydney Medical School, The University of Sydney, Sydney, ³School of Public Health, Curtin University, ⁴Telethon Kids Institute, The University of Western Australia, Perth, Australia

Background and aims: Undescended testis (UDT) is the most common genital anomaly in boys. Guidelines recommend surgery before 12 months to maximise fertility and reduce the risk of malignancy. We investigated the prevalence of UDT, rates of surgery and the age at surgery.

Methods: UDT was identified from all live born infants in New South Wales, Australia in 2001-2011 using administrative record-linked birth and hospital data. The prevalence of UDT, surgery rates, age at surgery, post-surgical outcomes and risk factors for surgery performed after the recommended age were evaluated.

Results: There were 10,875 (2.1%) boys with UDT. Corrective surgery was performed in 4,980 (45.8%) boys representing a cumulative prevalence of 9.6 per 1,000 male births. 5% of surgeries were orchidectomies and 9% had revision surgery. Median age at surgery was 16.6 (IQR: 11.8-31.0) months, decreasing from 21 months for boys born in 2001 to 13 for boys born in 2010. Among boys operated <36 months (n=3,897), 67% had surgery after the recommended 12 months of age; with socio-economic disadvantage, regional/remote area of residence and lack of private health insurance risk factors for surgery after 12 months.

Conclusions: One in fifty boys born are diagnosed with UDT of which two thirds had no report of corrective surgery. The age at surgery is decreasing, however, two thirds are performed after 12 months of age.

Keywords: age at surgery, orchidopexy, undescended testis
AN EVALUATION OF THE PREDICTIVE CAPABILITY OF SIGNIFICANT CHANGES IN BLOOD PRESSURE IMMEDIATELY POST-PDA LIGATION IN PREMATURE PATIENTS: A RETROSPECTIVE STUDY.

Brian L. H. Wong*1,2, Emanuela Ferretti3, Nick Barrowman4, Gyaandeo Maharajh5

1Student, University of Ottawa, 2Student Clinical Researcher, Children’s Hospital of Eastern Ontario (CHEO), 3Pediatrics, Division of Neonatology, CHEO/The Ottawa Hospital, , 4CHEO Research Institute, 5Cardiovascular Surgery, CHEO, Ottawa, Canada

Background and aims: Surgical closure of PDA is effective but is associated with sig. short- and long-term morbidity. Post-interventional hemodynamic instability in these patients has been variable and unpredictable in severity. Recent studies have concluded that clinical effects of this low cardiac output (LCO) state become apparent at 6-12h post-ligation. Another study proposes early admin. of milrinone to infants with LCO to reduce post-op hemodynamic instability. AIM: To confirm if morbidity and mortality can be predicted in a premature patient pop. by comparing pre- and post-ligation bp measurements.

Methods: Significant bp change was defined as ± 10 mmHg and morbidity as post-op hypotension and LCO. A retrospective intraoperative report review was performed on 288 infants ≤36+6 weeks’ GA that underwent a PDA ligation procedure at CHEO.

Results: A sig. correlation between post-op hemodynamic instability and an increase in intraoperative bp was observed in premature infants who underwent surgical ligation. Perioperatively, patients who did not exhibit a sig. increase in systemic pressure post- ligation appear to have a higher incidence (>50%) of post-ligation cardiac syndrome (PLCS).

Conclusions: Absence of sig. bp change immediately post-ligation has been clinically observed to be associated with PLCS. We will continue to rigorously study this to establish a systematic relationship between post-PDA ligation bp changes and the incidence of PLCS in microprems. This potential predictive risk factor would greatly improve post-op management and care of premature infants undergoing PDA ligation procedures.

Image:
**Keywords:** cardiology, neonatal management, patent ductus arteriosus (PDA), pediatric cardiovascular surgery, perinatal epidemiology, surgery
ASSESSMENT OF THE POSSIBILITIES OF DUAL ENERGY CT IN DETERMINING THE COMPOSITION OF URINARY STONES IN THE CHILDREN

Anatoliy Anikin\textsuperscript{1}, Lidia Vorobyeva\textsuperscript{2,2}, Andrey Getman\textsuperscript{2}, Magda Karkashadze\textsuperscript{2}, Leyla Namazova-Baranova\textsuperscript{3}

\textsuperscript{1}of radiology, Federal State Scientific Institution « Research Center for Children's Health, \textsuperscript{2}of radiology, \textsuperscript{3}Federal State Scientific Institution « Research Center for Children's Health », Moscow, Russia

\textbf{Background and aims:} It is very important to know the morphology of the stones for the increasing of the efficiency of the distant lithotripsy. The aim of the study is to assess possibilities of the dual energy CT in determining of urinary stones.

\textbf{Methods:} 124 children (73 boys, 51 girls) with urolithiasis were examined. All the children were performed simultaneous dual energy CT scanning (64 slices) with attenuations at 80 and 140 kV and dual detectors.

\textbf{Results:} 97 patients (78.2\%) were diagnosed with renal stones, 19 patients (15.3\%) - with ureteral stones and 3 patients (2.4\%) - with bladder stones. The mean size of the stones was \( \approx 0.392 \text{ cm}^3 \). Diagnostic Accuracy of the Dual Energy CT was 81.3\% in determining chemical composition of the simple (one-component) concretions and 74.6\% in mixed concretions. Phosphate, oxalate and urate simple stones were easy to diagnose, reliability of their detection was 89\%. When magnesium or cystine admixtures were present in the stone composition the reliability of their detection decreased to 74\%.

\textbf{Conclusions:} Dual Energy CT demonstrates high efficiency in determining of the chemical composition of the urinary concretions and can be used in order to select patients for the distant lithotripsy.

\textbf{Keywords:} None
DIAGNOSIS OF CHOLEDOTAL CYSTS BY MAGNETIC RESONANCE CHOLANGIOPANCREATOGRAPHY IN CHILDREN
Magda Karkashad1, Leyla Namazova-Baranova2, Anatoliy Anikin1, Galina Kuznetsova1, Petr Kaskov1, Andrey Getman1

1 of radiology, 2 Federal state budgetary institution “Scientific Center of Children's Health” Of the Ministry of Health of the Russian Federation, Moscow, Russia

Background and aims: Correct diagnosis of choledochal cyst is a rather serious problem in pediatric surgery. One of the methods to examine the bile ducts is magnetic resonance cholangiopancreatography (MRCP). Aim of the study is to assess the informative value of MRCP in patients with cystic transformation of the common bile duct.

Methods: A total of 11 children aged from 6 months to 15 years have been examined. Apart from the MRI of the abdomen combined with the MRCP, all the patients underwent ultrasound examination. A 3.0 Tesla MRI scanner and a 1.5 Tesla MRI scanner were used. Standard abdominal MRI examination involved T1- and T2-weighted images, the FatSat technique, the diffusion weighted imaging and the MRCP. Obtained MRI data were checked against those obtained on surgical interventions.

Results: The MRCP has accurately identified all the type I choledochal cysts (Todani classification). The anatomic structure of the biliary tree as seen on the MRCP was in line with the results obtained on surgical interventions. The noninvasive nature of the study, no exposure to radiation, no need to use contrast enhancement and the possibility to obtain 3D images allowed carrying out the tests with no age restrictions.

Conclusions: The MRCP is an accurate noninvasive method to diagnose abnormalities of the biliary duct. It can be used as the initial method for preoperative diagnosis of choledochal cysts.

Keywords: None
Background and aims: Microtia is described as a small malformed auricle that can be very frightening when viewed for the first time by the new parents. It can appear in many different severities, an isolated finding or associated with a syndrome or chromosomal aberration. It is usually an obvious diagnosis at birth and as such a discussion that the parents are eager to have very early. Education, counseling and reassurance can provide needed aid to the family at a time that should be enjoyed instead of filled with fear and uncertainty.

Methods: Fortunately, the prevalence is low. For those who have this condition, the role of the pediatrician is significant in managing this problem early in the process. A family history, physical examination, and hearing test are important at birth to evaluate the infant for any additional associated malformations. During infancy the child should be monitored for otitis media, evaluated for speech and language development, referred to specialists for associated mandibular hypoplasia, and prepared for school.

Results: The pediatrician can provide the parents with a timeline for referral to a specialist and ultimate surgical reconstruction. This will help calm the fears that the parents have and give hope that a normal looking ear is possible in time.

Conclusions: We will discuss the timing for reconstruction, methods available and current standard of care. The role of the pediatrician is essential in treating patients with microtia.

Keywords: Microtia, Newborns, Reconstruction, Surgical Options
Pediatric Surgery and surgical sub-specialties

ISOLATED RADIAL HEAD AND NECK FRACTURES IN CHILDREN – A RARE INJURY.
ANALYSIS AND FOLLOW UP OF 19 CASES.

Marcel Dudda1, Matthias Koenigshausen1, Thomas A. Schildhauer1, Christiane Krupa1
1Department of Surgery, University Hospital Bergmannsheil, Ruhr-University of Bochum, Germany, Bochum, Germany

Background and aims: Isolated radial head and neck fractures are rare. Approximately 1% of all fractures in childhood. High rates of complications are reported. Purpose of the study was to evaluate the operative management, complications and clinical outcomes.

Methods: Retrospective analysis between 2002 and 2014. 19 children with isolated radial head and neck fractures were treated. Age averaged 11 years (range 6-16). Operative treatment with elastic stable intramedullary nailing (ESIN) was performed in 13 cases. Two screw, two k-wire and one polipin fixation were performed in the others. One child was treated conservatively.

Results: Follow up averaged 19 months (2-89). Complications occurred in nine children. All children (100%) with an open reduction maneuver and 36% children with closed or percutaneous reduction developed a complication. 74% (14) children showed a free or <20° limited range of motion on final follow up.

Conclusions: Due to a high proportion of cartilage of the radial head in young children radial head injuries are rare. Neck fractures occur more frequently. If conservative treatment is not possible, ESIN seems to be a simple and protective procedure. Complications occur frequently after open reduction.

Keywords: radial neck, ESIN, radial head
**Pediatric Surgery and surgical sub-specialties**

**LATE DETECTION OF CLEFT PALATE**

Corstiaan Breugem*1, Iris de Vries1

1Plastic Surgery, Wilhelmina Children’s Hospital, Utrecht, Netherlands

**Background and aims:** Cleft palate is a common craniofacial condition. Most patients are diagnosed within the first weeks after birth. Late diagnosis could initially result in feeding and growth impairment and subsequently speech and hearing problems later in life. The purpose of this study is investigate (1) when cleft palate is diagnosed in a large cleft center and how (2) the presence of a syndrome or other factors relate to the age at diagnosis.

**Methods:** Retrospective study of patients that were diagnosed between 1997-2014 at the Cleft Palate Center Utrecht, the Netherlands

**Results:** The mean age of 271 patients at diagnosis was 1 year and 3 months. In 37% the diagnosis was made > 30 days after birth and 67 children were diagnosed after the age of one year. The extent of the cleft was a determining factor for successful early diagnosis (< 30 days). There was no significant association between the location of delivery (home or in hospital) and the age of diagnosis.

**Conclusions:** Many oral clefts are diagnosed late. A thorough intra oral investigation of all new borns includes manual palpation and visual inspection of the palate. Pediatricians should be aware that feeding difficulties in new borns, including nasal regurgitation, could accompany a cleft palate.

**Keywords:** None
Pediatric Surgery and surgical sub-specialties

LATERAL FOOT PAIN IN ADOLESCENCE: REMEMBER TARSAL COALITION (CASE REPORT)
Mode Al Ojaimi*1, Raffoul Saade2, Fadi Howayek3, Cristel El Ojeimi4, Marie Claude Fadous Khalife5,6
1Pediatrics, Balamand university, Family medical center, Zgharta, Koura, 2Orthopedics, Balamand University, Zgharta, 3orthopedics, Holy spirit university of Kaslik, UH notre Dame Des Secours, BYBLOS, 4Pediatrics, Notre Dame du Liban hospital, Jounieh, 5Pediatrics, Holy Spirit University of Kaslik, Kaslik, 6Pediatrics, University hospital Notre Dame Des Secours, Byblos, Lebanon

Background and aims: Background: Calcaneonavicular and talocalcaneal (TLC) bar are the most common types of tarsal coalition. Surgery is indicated when conservative therapy fails. Resection with fat graft for TLC bars, new technique with favorable results.

Methods: Methods: 11 y.o female presented with tenderness over right foot laterally for last 6 weeks. Pain increases with activity and is relieved by rest. She has difficulty initiating movement in both feet after inactivity.

Results: Physical exam: Bilateral flat feet that do not correct with dorsiflexion of toes. Bilateral limited abduction of subtalar joints. Xrays confirmed TLC joints coalition. CT scan showed fibrous coalition involving posteromedial facet of TLC joint in left foot and extra ossicle in right foot with complete bony fusion with talus and fibrous fusion with calcaneus - rare variant. Conservative treatment with CAM boots and NSAID failed. Surgical intervention was done with complete excision of TLC bars bilaterally and a fat graft. Complete surgical success confirmed 4 months post op.

Conclusions: Conclusions: Awareness about tarsal coalition is a must for pediatricians. Never ignore lateral foot pain in adolescents

Keywords: fat graft, fibrous coalition, talocalcaneal bar, tarsal coalition
MALIGNANT SACROCOCCYGEAL TERATOMA IN CHILDREN IN KANO NIGERIA.
Lofty-John Anyanwu 
Aminu Mohammad 
Lawal Abdullahi 
Aliyu Farinyaro

1Surgery, Aminu kano Teaching Hospital Kano Nigeria, Kano, Nigeria

Background and aims: The introduction of modern chemotherapy has significantly improved the survival of children with malignant germ cell tumours in developed countries. Our study aims to report our preliminary experience with the cisplatin, etoposide and bleomycin (PEB) regimen in the treatment of children with malignant sacrococcygeal teratoma (SCT).

Methods: This is a retrospective review of the records of four patients managed for malignant sacrococcygeal teratoma in our unit between January 2014 and December 2015. Demographic and clinical data were obtained from their records for analysis.

Results: There ages ranged between 1 year and 2 years (mean 1.75; SD 0.5). The female to male ratio was 1:1 (2 girls and 2 boys). Difficulty in voiding urine and faecal incontinence were the common presenting features in all the patients. Two of the patients had Altman type III and two had Altman type IV SCT. All patients had faecal and urinary diversions before commencement of chemotherapy. Febrile neutropenia, anorexia, anaemia requiring repeated blood transfusion were common adverse effects in all the patients, which required interruption of treatment. There were three deaths (75%) attributed to treatment toxicity.

Conclusions: In order to balance toxicity with efficacy, a modification of PEB dosing may be required in compromised children presenting with advanced malignant SCT.

Keywords: Bleomycin, Cisplatin, Etoposide, Germ cell tumour, Sacrococcygeal teratoma
MRI VISUALISATION OF THE REPRODUCTIVE SYSTEM DEVELOPMENT ABNORMALITIES IN PEDIATRIC GYNECOLOGY

Magda Karkashad, Anatoliy Anikin, Galina Kuznetsova, Petr Kaskov, Anna Gevorkyan

1 of radiology, 2 of radiology, 3 Federal state budgetary institution "Scientific Center of Children’s Health" Of the Ministry of Health of the Russian Federation, Moscow, Russia

Background and aims: congenital anomalies of the reproductive system in girls have a high level of occurrence. Aim of the study is to assess the informative value of magnetic resonance imaging in visualization of various abnormalities of the vagina and the uterus in female adolescents.

Methods: A total of 30 girls aged from 8 to 14 years with suspected diagnosis of reproductive system abnormality have been examined. All the patients underwent MRI of the pelvis. A 3.0 and a 1.5 Tesla MRI scanner were used. Standard pelvic MRI examination involved $T_1$- and $T_2$-weighted images, the FatSat technique, the short-tau inversion recovery sequence and diffusion weighted imaging. Obtained MRI data were checked against those obtained in laparoscopic procedures.

Results: Vaginal atresia of various grades was detected in 30% of the examined patients; duplication of the uterus and vagina with partial vaginal atresia of various grades in 27% of patients; duplication of the uterus and vagina combined with ipsilateral renal hypoplasia in 20%; a bicornuate uterus with the development of hematosalpinx in 13%; a septate uterus with vaginal septa of various length in 10% of the patients. In 28 cases (94%), MRI data were in line with the laparoscopic results.

Conclusions: the MRI enables evaluating the nature of the pathology of reproductive system and efficacy of the performed surgical intervention.

Keywords: None
MRI/CT VISUALIZATION OF CONGENITAL TUMORS IN INFANTS

Anatoliy Anikin1,1, Andrey Getman2, Magda Karkashadze2, Yuriy Kucherov3, Leila Namazova-Baranova4, Mikhail Rekhviashvili5, Kseniia Frolova5

1of radiology, 1 Federal State Scientific Institution « Research Center for Children's Health », 2of radiology, 3of surgery, 4“Scientific Center of Children's Health” Of the Ministry of Health of the Russian Federation, Moscow, Russia, 5surgery, ”Scientific Center of Children's Health” Of the Ministry of Health of the Russian Federation, Moscow, Russia

Background and aims: Congenital tumors in infants are a diverse group and require a differentiated approach for treatment. Visual diagnostic tests as magnetic resonance (MRI) and x-ray computed (CT) tomography improve the quality of medical care for children of this group. To study the distribution of congenital tumors in infants and to evaluate the role of MRI/CT in the accurate diagnosis of this pathology.

Methods: The study involved 43 children with previously identified on ultrasound of congenital tumors (36 children) and suspected disorders (7 children). The age of the children ranged from 1 day to 9 months. MRI was performed in 40, CT - 7 children, the combined use of MRI and CT in 4 children.

Results: In 52% cases had tumors in the structure of congenital abnormalities, including spinal/cranial dysraphism (33%) and cysts of internal organs (19%) - liver, kidney, pancreas, and mesentery. Benign tumors accounted for 37%: 24% vascular (hemangioma and lymphangioma), and 12% of teratomas; in 1 child (2,5%) – neuroma. Malignant tumors have a low prevalence (7%) - neuroblastoma and nephroblastoma. In 2 children (5%) changes in non-neoplastic etiology (inflammatory and other processes) were diagnosed.

Conclusions: MRI and CT allows you to specify the diagnosis and determine the tactics for management for infants with suspected congenital tumor.

Keywords: congenital anomalies, MRI, tumor
**OGILVIE SYNDROME IN A POST RENAL TRANSPLANT PEDIATRIC PATIENT: CASE REPORT AND LITERATURE REVIEW.**

Erik Mier Escurra¹, Sergio Fernández Ortíz², Tali Díaz Prieto¹, Guillermo Mier Saad³, Alejandro Valdes Cepeda⁴

¹Pediatrics, Sistema Multicéntrico de residencias médicas ITESM-SSNL, Escuela de Medicina del Tecnológico de Monterrey., ²Pediatric Gastroenterology, Tec Salud, Monterrey, ³Pediatric Surgery, Hospital Star Médica, Aguascalientes, ⁴Adult Nephrology, Tec Salud, Monterrey, Mexico

**Background and aims:** Acute colonic pseudo-obstruction or Ogilvie syndrome, is a rare gastrointestinal syndrome in children, characterized by a marked dilatation of the colon in the absence of a mechanical obstruction.

**Methods:** Clinic case: A 13 years male patient. With psychomotor retardation subsequent to perinatal asphyxia, chronic renal failure secondary to bilateral hypoplastic kidneys, treated with kidney transplant is performed. Actually in immunosuppressive management. He began his condition with abdominal pain and progressive abdominal distention. After use of prokinetics and 2 laparotomies without improvement, MRI shows intestinal dilatation without obstruction. Ogilvie Syndrome is diagnosticated, so management is started with neostigmine, presenting resolution.

**Results:** Discussion: The Ogilvie Syndrome is most common in older people with serious illnesses or surgical conditions. The mechanism is thought to be secondary to an imbalance in the autonomic innervation. The initial treatment is supportive. If there is no respond, neostigmine, colonoscopy, or cecostomy.

**Conclusions:** This syndrome is extremely rare in children, so there is little clinical suspicion and lack of management guides for diagnosis and treatment in patients of this age.

**Image:**
Keywords: Immunosuppressive, Ogilvie, Pseudo-obstruction, Transplant
PROGNOSTIC FACTORS IN TREATMENT OUTCOME OF NEC IN NEWBORNS

Aliaksandr Svirsky¹, Kirjll Marakhouski², Ihar Seukouskij³, Aliaksandr Makhlin⁴, Aksana Svirskaya⁵

¹Pediatric surgery division, Republical Scientific and Practical Centre (RSPC) of Pediatric Surgery,  
²Diagnostic Division, ³Dept. of emergency surgery, ⁴RSPC of Pediatric Surgery, ⁵NICU, NSPC "Mother and Child", Minsk, Belarus

Background and aims: To identify the factors of adverse outcome of NEC

Methods: Retrospective analysis of 71 patient data with NEC in period 2007-2015 was performed in context of on-line statistic https://medcalc.net/stats/. Evaluation of data reliability was carried out on basis of outcome: died/survived.

Results: To estimate GA and BW influence on outcome in group conducted by cutting values: GA group >209 days, 46 patients (6 died) the relative risk adverse outcome amounted to 4.2933, CI 95% (1.8851-9.7783, p=0.0005) OR 8.4848, CI 95% (2.6435-27.2335, p=0.0003). Relative risk estimated for group with GA≤209 days, BW≤1380g - 30 patients (15 died), and 41 patients (6 died) with BW≥1380g was 4.1000 CI 95% (1.6737-10.0433, p=0.002, OR 7.2000, CI 95% (2.2172-233803), p=0.001. The relative risk, when combining these factors, i.e. group with GA<209days and BW<1380g - 16 patients (14 died) and group of 55 patients (6 died): was 8.0208, CI 95% (3.6855-17.4559), r<0.0001, OR 57.1667, CI 95% (10.3705-315.1271), r<0.0001.

Conclusions: Each of assessed factors: the GA< 209 days and BW <1380 gr. in newborns with NEC increase the risk of death four times and suggests extremely high probability of adverse outcome in patients with combination of these factors.

Keywords: birth weight (BW), gestational age (GA), necrotizing enterocolitis, preterm infants, risk factors
QUALITY OF LIFE OUTCOMES POST ADENOTONSILLECTOMY IN CHILDREN WITH SEVERE OBSTRUCTIVE SLEEP APNEA

Arzu Chaudhry¹, Nadine Korah², Linda Horwood², Lily Nguyen³, Evelyn Constantin²
¹McGill University, ²Montreal Children’s Hospital, McGill University Health Center, ³Montreal Children’s Hospital, McGill University Health Centre, Montreal, Canada

Background and aims: Pediatric obstructive sleep apnea (OSA) is associated with poor quality of life (QOL), and QOL improves with OSA treatment (adenotonsillectomy (T&A)). Little is known about the association between severe OSA and QOL, which factors affect QOL, and the impact of T&A. The objectives of our study were to determine the impact of other factors (comorbidities and socioeconomic status (SES)) on QOL in children with severe OSA and the extent of QOL improvement post-T&A.

Methods: We conducted a retrospective cohort study. We reviewed data from children 1-8 years old who underwent an T&A for severe OSA over a five-year period. We used the OSA-18 score as a measure of QOL and the McGill Oximetry Score for severe OSA. We also collected data on comorbidities and SES (postal codes as proxy).

Results: Seventy-three children were included (mean age 2.9 years, 29% female). Fifty-eight percent had one or more comorbidity. Fifty-five percent of parents reported poor QOL (OSA-18 score, moderate-high impact on QOL). There were no significant differences in OSA-18 scores between children with and without comorbidities and between children of lower and higher SES. All children had improvements of QOL post-T&A, with 95% showing improvement from the moderate-high range preoperatively to normal range postoperatively. Total OSA-18 scores (63.5±19.3 vs 30.5±13.3, p< 0.001) and OSA-18 subscales significantly improved post-operatively.

Conclusions: We conclude that children with severe OSA have a high prevalence of poor QOL and that comorbidities and low SES do not impact on QOL. T&A improves QOL in children with severe OSA.

Keywords: Adenotonsillectomy, OSA, OSA-18, Quality of life
RESULTS OF INVESTIGATION OF A NASAL CAVITY’ MUCOCILIAR TRANSPORT IN PATIENTS WITH CHRONIC GENYANTRITIS

O Karimov¹, Fazliddin Shamsiyev²*, D Shamsiyev²,³
¹Tashkent medical academy, ²Tashkent Institute of Postgraduate Medical Education, ³Tashkent stomatology institute, Tashkent, Uzbekistan

Background and aims: One of the conditions for the effectiveness of surgical intervention is a normal functioning of the mucociliar transport system.

Methods: To study the effect of operations on mucociliar clearance (MC) we used saccharine test. Thus, on the mucosa of the inferior turbinate, indenting of about 1 cm from its front end, we applied saccharin (diameter of about 1 mm) and counted the time when the examinee feels a sweet taste in the mouth.

Results: In 8 patients time of mucociliar transport averaged 27.4 minutes; in 36 patients this time was more than 30 minutes, which was due to intranasal pathology, polypous growth and development of chronic inflammation of the nasal mucosa. In 2 weeks after surgery, mucociliar transport time in all patients was more than 30 minutes (average of 37.4 minutes.) Only in 2 months in patients whose mucociliar transport time before surgery was less than 30 minutes, recovered to previous figures. In the control group of 20 patients with a deviated septum time of mucociliar transport was 14.4±1.2. In the postoperative period after septoplasty time of mucociliar transport has also been more than 30 minutes and recovered to previous figures an average of 2-2.5 months.

Conclusions: The study shows that surgical treatment inhibits mucociliar clearance, and even sparing endoscopic surgery slows down mucociliar transport system for a period from a few weeks to 2 months. In patients who have undergone multiple surgical interventions the protective function of the nasal mucosa is reduced dramatically, which triggers chronic inflammation in the paranasal sinuses and nasal cavity.

Keywords: None
REVIEW OF 6 YEARS OF TRACHEOSTOMY-RELATED ADVERSE EVENTS- A SCOTTISH CONTEXT

Harriet Mortimer¹, Haytham Kubba²
¹University Of Glasgow, ²Royal Hospital for Sick Children, Glasgow, United Kingdom

Background and aims: The National Tracheostomy Safety Project has recently highlighted many of the problems associated with tracheostomy care. This study aims to investigate the circumstances relating to adverse events occurring in patients with tracheostomies in healthcare settings within NHS Greater Glasgow and Clyde, UK.

Methods: Data were obtained through a search of Datix records over 6 years and yielded 443 tracheostomy related cases which were then manually analysed. 126 were excluded to leave 199 adult cases and 118 paediatric cases. These were analysed, sorted into categories and given a severity grading from 1-5 using the Common Terminology for Adverse Events grading system.

Results: The category with the highest number of events reported for Adults was ‘Inappropriate equipment used/ protocol not followed/ lack of staff training’ with 49 such events recorded. For Children the commonest events reported were ‘Tube displaced/blocke[d]/pulled out’ where 51 such events were recorded. ‘Equipment availability/failure/infrastructure problems’ and ‘Manpower’ also had significant numbers of cases in both Adults and Children. 26% of the adult events and 48% reported in the paediatric category were life-threatening (Grade 4).

Conclusions: Adverse events in tracheostomy care are common, often serious and largely associated with human error. They are preventable and whilst great strides have been taken in recent years especially by The Global Tracheostomy Collaborative to improve standards further investigation and intervention is needed to ensure patient safety.
<table>
<thead>
<tr>
<th>Categories</th>
<th>Sub-categories included</th>
<th>Number of cases ADULT</th>
<th>Number of cases PAEDIATRIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inappropriate equipment used/protocol not followed/lack of staff training</td>
<td>Protocol not followed, Lab requests/equipment lost, Staff training (Medical and Nursing), Sputum splashes during suction; Inner cannula missing; Cuff &amp; speaking valve problems; Antenatal Aesthetic review not carried out; Consent issues; Inappropriate equipment used; patient unsupported on discharge; Inappropriate sized equipment used</td>
<td>49</td>
<td>8</td>
</tr>
<tr>
<td>Equipment availability/failure/infrastructure problems</td>
<td>Equipment availability-ordering; Equipment availability at bedside; Equipment failure, infrastructure problems</td>
<td>48</td>
<td>32</td>
</tr>
<tr>
<td>Tube displacedblocked/pulled out</td>
<td>Tube displaced, tube blocked with secretions, patient attempting to pull out tracheostomy tube; patient pulled out tracheostomy tube</td>
<td>42</td>
<td>51</td>
</tr>
<tr>
<td>Manpower</td>
<td>Insufficient staffing- nursing, Insufficient staffing- medical, Inappropriate transfer; theatre delayed due to lack of staff; Ambulance availability</td>
<td>35</td>
<td>19</td>
</tr>
<tr>
<td>Communication</td>
<td>Problems contacting on-call staff; Poor documentation of events, lack of communication between allied health professionals</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Patient violence</td>
<td>Violence- communication related, Violence- infection related, Violence-tube related</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Surgical complications</td>
<td>Airway fire; insertion into false passage; surgical emphysema</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Respiratory difficulties following decannulation</td>
<td>Peri-arrest following decannulation, emergency tracheostomy had to be carried out due to breathing difficulties post-decannulation</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>199</strong></td>
<td><strong>118</strong></td>
</tr>
</tbody>
</table>

**Keywords:** Critical Care, ENT, PAEDIATRICS, Patient Safety, Scotland, Tracheostomy
THE MODERN APPROACH OF CHILDREN'S TREATMENT WITH VELOPHARYNGEAL INSUFFICIENCY IN THE POSTOPERATIVE PERIOD

Olga Ginter¹, Leila Namasova-Baranova¹, Tatyana Mospan¹, Karaman Abramov¹, Larisa Alatorseva¹, Valentin Sytkov¹

¹Scientific Centre of Children Health, Moscow, Russia

**Background and aims:** Velopharyngeal insufficiency is one of the main causes of speech disorders in children with congenital cleft palate. The aim was evaluating results of complex treatment in velopharyngeal insufficiency, in case of restoring the nerve-muscle complex of velopharyngeal ring.

**Methods:** The study involved two groups of children operated on congenital cleft palate and velopharyngeal insufficiency. The main group includes 40 patients who got the complex treatment: neurological treatment, physiotherapy, massage courses of maxillofacial region with intraoral massage with parallel speech therapy. There were 35 patients in the comparison group. In this group only speech therapy was performed.

**Results:** After the rehabilitation course the velopharyngeal ring closing in the main group improved on 56%, speech improved on 49%. In the comparison group the velopharyngeal ring closing improved on 38%, speech on 35%. Nasality of speech in the main group decreased on 45 %, in the other group on 29%.

**Conclusions:** The treatment of velopharyngeal insufficiency in the postoperative period is aimed at restoring the anatomical and physiological function of the velopharyngeal ring. Velopharyngeal ring is neuromuscular complex and restoration of its function in velopharyngeal insufficiency with simultaneous course of speech therapy, neurology, physiotherapy gives the most possible outcome of rehabilitation.

**Keywords:** congenital cleft palate, nasopharyngoscopy, pharyngoplasty, rhinolalia, velopharyngeal insufficiency
TREATMENT AND COMPLICATIONS OF ELASTIC STABLE INTRAMEDULLARY NAILING (ESIN) IN 202 PEDIATRIC FOREARM FRACTURES.

Marcel Dudda¹, Pamela Bunge¹, Thomas A. Schildhauer¹, Christiane Kruppa¹
¹Department of Surgery, University Hospital Bergmannsheil, Ruhr-University of Bochum, Bochum, Germany

Background and aims: Elastic stable intramedullary nailing (ESIN) is state of the art treatment for both bone forearm fractures, if operative stabilization is required. The purpose of this study was to evaluate operative ESIN treatment and complications of forearm fractures in children and adolescence with 202 forearm fractures.

Methods: Between 2000 and 2015 we retrospectively analyzed all patients, up to the age of 16 years, who were treated operatively. 201 consecutive patients with 202 fractures were included. Age averaged 10 years. 82% diaphyseal both bone fractures, 5% Monteggia/-equivalent fractures , 7% single bone fractures.

Results: 158 (78%) fractures were treated radial plus ulnar. Follow up averaged 10.2 months. 18 isolated fixation of the radius and 8 of the ulna. Complications were ten refractures, two malunions, three extensor pollicis longus tendon ruptures, one superficial wound infection and two limited range of motions. Time to implant removal averaged 3.8 months.

Conclusions: Forearm fractures are common injuries. ESIN is a reliable technique with low complication rate. Both bone forearm fractures, single bone fractures as well as Monteggia/-equivalent fractures can be successfully treated. As major complication re-fractures are frequently seen, even with the ESIN in situ. To lessen the risk of re-fracture after implant removal, we suggest removal between the 4th and 6th months.

Keywords: Elastic Stable Intramedullary Nailing , ESIN, pediatric forearm fracture


Pediatric Surgery and surgical sub-specialties

TREATMENT OF VELOPHARYNGEAL INSUFFICIENCY BY NEW MINIMALLY INVASIVE METHOD

Olga Ginter1, Leila Namasova-Baranova1, Tatyana Mospan1, Karaman Abramov1, Larisa Alatorseva1, Valentin Sytkov1

1Scientific Centre of Children Health, Moscow, Russia

Background and aims: Scarring of tissue palate after previously conducted operations, lack of sufficient tissue for a plasty have complicate subsequent in plastic surgery to eliminate the velopharyngeal insufficiency. The aim of study is developing and evaluating of treatment results in children with velopharyngeal insufficiency operated by the new minimally invasive surgical method with using a tissue expander.

Methods: Results of treatment of 5 children with velopharyngeal insufficiency and repeated operations on the palate for congenital cleft palate and velopharyngeal insufficiency anamnesis, with a wide, rigid, scar-altered velopharyngeal ring were analyzed. Velopharyngeal ring closing function was evaluated by nasofaringoskopy and with program «Compare».

Results: In the preoperative period the velopharyngeal ring closing was less than 50%, and was assessed as unsatisfactory. Speech nasalization, pathological articulation and sounds pronunciation, unclear, slurred speech had been existed. According to the results in the postoperative exam velopharyngeal ring function, sounds pronunciation, speech were improved significantly. The velopharyngeal ring closure was more than 80%.

Conclusions: New minimally invasive surgical method of treatment of velopharyngeal insufficiency with using a tissue expander improves velopharyngeal ring closure, reduces the degree of nasality, normalizes the function of speech production.

Keywords: congenital cleft palate, nasopharyngoscopy, rhinolalia, tissue expander, velopharyngeal insufficiency
WHY DO UNDESCENDED TESTES AND POSTERIOR URETHRAL VALVE OCCUR TOGETHER?

Vishal V Punwani¹, Jeremy Wong¹, Christopher Lai¹, Jessalynn Chia¹, John Hutson¹.²
¹Department of Surgery, Royal Children's Hospital Melbourne, ²Department of Surgical Research, Murdoch Children's Research Institute, Melbourne, Australia

Background and aims: Undescended testis (UDT) occurs in ~2% of newborn males, and occasionally these infants also have posterior urethral valve (PUV). The cause of this relationship is uncertain. We aimed to review the literature to identify publications documenting co-occurrence of UDT and PUV, and to summarise the theories of co-occurrence.

Methods: A search of the literature (Embase, Medline, Pubmed; 1947-2015) was undertaken to identify publications describing the link between UDT in PUV patients, as well as PUV in UDT patients.

Results: Ten publications in English were found with both UDT and PUV: 9 articles describing the frequency of UDT in patients with PUV, and 1 article examining the frequency of PUV in infants with UDT. UDT occurred in 12-17% of PUV compared with 1-2% in the control population, consistent with a 10-fold increase. PUV occurred in 1.2% of UDT patients compared with 0.01% in the control population, consistent with a 100-fold increase.

Conclusions: PUV leads to a 10-fold increase in occurrence of UDT, while the presence of UDT causes a 100-fold increase in occurrence of PUV. Four main theories of causation have been proposed, each of which have some merit but little supporting evidence, leaving the cause of simultaneous occurrence of PUV and UDT uncertain.

Image:
Keywords: cryptorchidism, paediatric surgery, posterior urethral valve, undescended testis
SAFETY AND EFFECTIVENESS OF LINEZOLID IN THE NEONATAL INTENSIVE CARE UNIT: A 10-YEAR REVIEW

Joseph Ting¹, Vanessa Paquette², Allison Callejas³, Horacio Osiovich³
¹Pediatrics, ²Pharmacy, University of British Columbia, ³Pediatrics, University of British Columbia, Vancouver, Canada

Background and aims: Linezolid use in neonatal populations especially those born premature is based on a few randomized controlled trials and case reports. Our aim is to describe the safety and effectiveness of linezolid in neonates at our level III neonatal intensive care unit (NICU).

Methods: We conducted a retrospective descriptive study of neonates who received linezolid from December 2004 to September 2014.

Results: With regards to adverse effects, three (2%) became leucopenic after treatment. One hundred and seven (68%) neonates were thrombocytopenic prior to start of linezolid, 14 (13%) of them had a further decrease in platelet count with treatment. Of the 48 neonates who had initially normal platelets prior to linezolid initiation, 5 (10%) had a decrease >25% or during treatment. Nineteen (12%) had a documented drop in hemoglobin >25% after treatment. There were 4 (3%), 9 (6%) and 18 (11%) neonates with documented 2-fold increase in ALT, AST or bilirubin, respectively. Five (3%) had documented >25% increase in creatinine. Adverse events associated with linezolid were evaluated using the Naranjo score and all were in the possible category. None were categorized as probable or definite.

Conclusions: Use of linezolid in neonates especially those born preterm was effective, and not associated with significant adverse events.

Keywords: effectiveness, linezolid, neonatal, safety
A COMPARATIVE STUDY TO ASSESS THE EFFECT OF 3\% HYPERTONIC SALINE(HS) ,0.9\% NORMAL SALINE(NS) AND SALBUTAMOL IN MANAGEMENT OF ACUTE BRONCHIOLITIS AMONG INDIAN CHILDREN

Gaurav Malik\(^1\), Bhawna Mirg\(^*1\)

\(^1\)Pediatrics, Bebe Nanaki Mother and Child Centre, Amritsar, India

**Background and aims:** Bronchiolitis is regarded as most common lower resp tract infection among infants in both developed & developing countries. Several modalities have been tried but none has been shown to have a definitive role & HS is the new modality of t/t.

**Methods:** The prospective study was conducted on 100 children (age group 1 month – 24 months) admitted in dept. of pediatrics of GMC, Amritsar with the diagnosis of bronchiolitis from oct’2012 to feb’2014. They were divided randomly in sequential manner to 3 grps & were given nebulisation with HS,NS,salbutamol respectively. A clinical severity score (CSS) was used for assessment. The mean age of the patients in the study population was 5.7 +/- 3.4 months. Max no. of the patients i.e.65.7\% belonged to 0-6 months. There was male preponderance in all 3 groups. Mean baseline CS score 5.9 +/- 1.5, 5.5 +/- 1.0 & 5.1 +/- 2.3 in group A,B,C respectively. 4 doses at 6 hr interval were given daily till discharge & CS score was recorded before and 30 min after first nebulisation till 3rd day of admission.

**Results:** After treatment the CS score dropped to 1.0 +/- 1.3, 0.5, 1.9 +/- 1.1 in grp A,B,C resp (p<0.01), max in 3\% HS grp. The duration of hospital stay was 3.4 +/- 1.7, 4.9 +/- 1.4 & 3.7 +/- 1.9 in grp A,B & C resp (p=0.001). 3\% HS reduced stay by as much as 30\%.

**Conclusions:** 3\% HS nebulisation is an effective & safe t/t in patients with acute bronchiolitis.

**Image:**
### CLINICAL SEVERITY SCORE

<table>
<thead>
<tr>
<th>Variables</th>
<th>Score</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory rate</td>
<td></td>
<td>&lt;30</td>
<td>31-45</td>
<td>46-60</td>
<td>&gt;60</td>
</tr>
<tr>
<td>Wheezing/Rhonchi</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Audible in terminal expiration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Audible in entire expiration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Audible in inspiration and expiration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retractions</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intercostal only</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intercostal and tracheosternal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intercostal and tracheosternal with nasal flaring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Condition</td>
<td>Normal/alert</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Irritable/lethargic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lethargic and poor feeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lethargic, poor feeding and poor sleep</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Keywords:** acute bronchiolitis, hypertonic saline, normal saline, salbutamol, nebulisation
AGE SPECIFIC FAST BREATHING IN UNDER-FIVE DIARRHEAL CHILDREN IN AN URBAN HOSPITAL: ACIDOSIS OR PNEUMONIA
Sharika Nuzhat¹, T Ahmed¹, A I Khan¹, S M R Islam¹, L Shahrin¹, M J Chisti*¹
¹NCSD, icddr,b, Dhaka, Bangladesh

Background and aims: Diagnosis of pneumonia in diarrheal children those who present with fast breathing is often very intriguing. We evaluated the role of fast breathing in diagnosing pneumonia in under-5 diarrheal children.

Methods: For this unmatched case-control study, diarrheal children of either sex, aged 0-59 months, admitted to Dhaka Hospital of the icddr,b during January-December 2014 having age specific fast breathing were studied. The diarrheal children with radiological pneumonia constituted the cases (n=276) and diarrheal children without pneumonia constituted the controls (n=446).

Results: The cases more often presented with lower age, hypoxemia, grunting respiration, and nasal flaring compared to the controls. In logistic regression analysis after adjusting for potential confounders such as dehydration and fever, under-5 diarrheal children who had pneumonia more often found to have cough and chest wall in drawing and less often had severe acute malnutrition (all P values <0.01).

Conclusions: Diarrheal children with fast breathing who have cough, and lower chest wall in-drawing, irrespective of presence or absence of metabolic acidosis, more likely to have radiological pneumonia. Early identification of these simple clinical features may help to minimize potential delay due to rehydration in initiating prompt treatment of pneumonia in order to reduce fatal consequences in such children.

Keywords: Acidosis, Diarrhoea, Fast Breathing, Pneumonia, under five children
ANTIBIOTICS THERAPY OF PNEUMONIA IN CHILDREN BY CRP MONITORING

Adnan Bajraktarevic¹, Goran Todosijevic², Zijo Begic³, Alisa Abduzaimovic⁴, Branka Djukic⁵, Almir Masala⁵, Emina Beslagic⁶, Ferid Krupic⁷

¹General Pediatrics, Public Health Institution of Health Center Sarajevo, Pediatrics Department, Sarajevo, Bosnia and Herzegovina., ²Clinical Medical center, ³General Pediatrics, Pediatrics Clinic, Sarajevo, ⁴Biochemistry Department, Laboratory, Tesanj, ⁵General Pediatrics, Federal Goverment, ⁶Pharmacology, Institute for Clinical Pharmacology, Sarajevo, Bosnia and Herzegovina, ⁷Children Orhtopedy, Orthopedic Clinic Gothenborg, Gothenborg, Sweden

Background and aims: CRP bove normal levels rise for 6-9 hours, reaches a peak after 48 hours, and that he was half-life constant, the level of CRP is determined by the amount of creation.

Methods: Measurement of CRP is useful in differentiating between acute bacterial and viral infections monitoring the disease and monitoring of effectiveness of treatment. Null hypothesis is that the CRP values do not change significantly after 3 to 4 days after starting antibiotic therapy for pneumonia preschool children.

Results: The expected values vary depending on the child's age, gender, height baseline values of CRP, season and geographical location on of dispensaries. The mean results (mean of deviation and approved range) was 54.06 ± 31.65 (%) fall in the value of CRP for treatment in outpatient conditions and 73.16 ± 26.75 (%) in the hospital, clinical conditions.

Conclusions: CRP has high sensitivity and low specificity. CRP has a high predictive value when carried out for 24 to 48 hours after onset of symptoms of the infection.

Keywords: children, CRP, Monitoring, Pneumonia
CHARACTERIZATION OF THE NASOPHARYNGEAL MICROBIOME IN A BIRTH COHORT OF INFANTS IN A DEVELOPING COUNTRY.

Joseph L Mathew¹, Vikas Gautam², S Keerthivasan¹, Ashish Agarwal¹, Sourabh Dutta³
¹Pediatrics, ²Medical Microbiology, ³Pediatrics (Neonatology), PGIMER, Chandigarh, India

Background and aims: Background: The nasopharyngeal microbiome has not been serially examined in infants in a developing country setting.

Aim: To characterize the nasopharyngeal bacterial flora in a cohort of infants starting from birth.

Methods: A total of 100 newborn babies was recruited at birth. Nasopharyngeal aspirate (NPA) obtained within 12 hours was processed for bacterial culture. Four additional samples were obtained for culture at 3, 6, 9, and 12 months in those who were apparently healthy (i.e no complaints volunteered by parents).

Results: Four infants (4%) showed bacteria in the NPA within 12 hours of birth, despite the absence of any risk factors for colonization. These were K. pneumoniae (2), Leclercia (1) and Enterobacter (1). Figure 1 presents the nasopharyngeal microbiome trend of various organisms, at the subsequent time points. Table 1 summarizes the symptom profile within preceding 14 days (by leading questions) and signs on the day of NPA sampling, in infants with positive culture.

Conclusions: Nasopharyngeal bacterial colonization can begin soon after birth. Two-thirds of healthy infants have organisms from 3 months onwards. The proportions of various organisms are almost constant, though S. pneumoniae increases over time. The microbiome is dynamic (i.e organisms in individual infants change over time).

Image:
Figure 1. Nasopharyngeal microbiome in a birth cohort of asymptomatic infants

Keywords: bacterial culture, birth cohort, microbiome, nasopharyngeal aspirate
Pulmonology


Ian Mitchell¹, Daniel Wang², Bosco Paes³, Krista Lanctot², Abby Li²

¹Paediatrics, University of Calgary, Calgary, ²Medical Outcomes and Research in Economics (MORE ®) Research Group, University of Toronto, Toronto, ³Paediatrics, McMaster University, Hamilton, Canada

Background and aims: Airway anomalies (AA) can increase the severity and duration of respiratory syncytial virus (RSV) infection. RSV prophylaxis guidelines do not include AA infants. The primary objective was to compare RSV-related hospitalization (RSVH) rates in AA-infants given palivizumab in the first season (FS) versus second season (SS) in the Canadian Registry of Palivizumab (CARESS).

Methods: AA-infants aged <2 years without other risk factors who received palivizumab in 32 Canadian sites during the 2005-2015 RSV seasons were enrolled. Data were analyzed using standard descriptive methods, comparative statistics and regression analysis.

Results: There were 653 eligible infants; 436 (66.8%) in FS and 217 (33.2%) in SS. SS infants had lower gestational age (37.1 vs. 37.9 weeks, F[1, 649] = 9.9, p=0.002) and birth weight (2750 vs. 3012 grams, F[1,649] = 15.8, p<0.0005) than FS infants. A higher proportion of SS infants had respiratory support (62.2% vs. 47.9, c²[1] = 0.001) and were in hospital longer (70.2 vs. 35.4 days, F[1,593] = 33.5, p<0.0005) as neonates. Overall RSVH rate was 1.83%; 1.80% (FS), 1.95% (SS). No significant differences in the time to first RSVH between the two groups were detected by Cox regression, controlling for daycare attendance, age, weight, and neonatal complications (Hazard ratio: 1.7, 95% CI 0.2-19.4, p=0.67).

Conclusions: Infants with AA pose a significant risk for RSVH and merit prophylaxis. FS and SS infants have similar RSVH risk. High-risk SS infants are accurately selected for RSV prophylaxis and may benefit from prophylaxis for 2 seasons.

Keywords: None
Comparision of first- and second-season palivizumab prophylaxis in patients with chronic lung disease (CLD) in the CARESS database (2005-2014)

Daniel Wang¹, Abby Li¹, Ian Mitchell², Bosco Paes³, Krista Lanctot¹

¹²Medical Outcomes and Research in Economics (MORE ®) Research Group, University of Toronto, Toronto, ²Paediatrics, University of Calgary, Calgary, ³Paediatrics, McMaster University, Hamilton, Canada

Background and aims: Infants with CLD have respiratory syncytial virus (RSV) hospitalization rates at least 10-fold higher than other children. Guidelines recommend palivizumab prophylaxis for CLD-infants < 24 months with comorbidities.

Methods: We examined differences in RSV-related hospitalizations (RSVH) in infants with CLD, given palivizumab during the first season (FS) versus second season (SS) in the Canadian Registry of Palivizumab (CARESS) database in 2005-2014 RSV seasons.

Results: 797 (55%) and 647 (45%) of 1444 infants were prophylaxed in FS and SS respectively. SS infants had lower gestational age [29.7 versus 31.3 weeks, F(1, 1440) = 29.9, p<0.0005] and birth weight [1447 versus 1762 grams, F(1, 1436) = 29.3, p<0.0005]. SS infants had more complicated neonatal courses; longer respiratory support [63.4 versus 50.0 days, F(1, 1089) = 16.9, p<0.0005], oxygen therapy [135.7 versus 74.8 days, F(1, 1155) = 97.4, p<0.0005], and longer stay [102.0 versus 72.0 days, F(1, 1369) = 62.1, p= <0.0005]. RSVH rates were 2.23% and 2.66% in FS and SS respectively. Cox regression adjusting for known confounders showed no significant differences in hazards between infants in FS or SS in time to first RSVH (Hazard ratio: 0.96, 95% CI 0.37–2.52, p=0.94).

Conclusions: Infants with CLD in the second RSV season had a similar hazard of RSVH as those in the first year. These findings suggest that infants aged >1 year are carefully selected for palivizumab prophylaxis based on their severity of illness and are equally at risk for RSVH compared to those prophylaxed for one season.

Keywords: None
DECISION-MAKING ABOUT TRACHEOSTOMY: THE ROLE OF A MULTIDISCIPLINARY “TRACH COMMITTEE”

Carina Majaesic¹, Daniel Garros¹, Trina Uwiera¹, Hamdy El Hakim¹, Eduard Eksteen¹, Dawn Davies¹, Susan Richards¹, Cathy Schellenberg¹

¹Stollery Children's Hospital, Edmonton, Canada

Background and aims: The decision to perform tracheostomy for prolongation of life in children can be controversial. To ensure that all relevant services are consulted prior to performing a non-urgent tracheostomy and to ensure that families are making informed decisions, a tracheostomy committee (TC) was created. We describe the composition, processes, and the preliminary data of the TC population at our tertiary pediatric centre.

Methods: A review of the tracheostomies performed during the period of 06/2012-01/2016 was undertaken.

Results: The TC became operational in June 2012, and includes the following services: Respiriology, Otolaryngology, Palliative care, Ethics, Home care, Nursing, Intensive Care and Pediatrics. The TC makes recommendations after open discussions among the consulting services.

From June 2012- Jan 2016, 57 patients were considered for discussion; 74% (42/57) underwent TC consultation; 78% (45/57) had tracheostomies performed. The TC met formally to discuss 26% (11/42) patients; for the remaining 31 consensus was achieved without face to face discussion. Out of the 12 non tracheostomized patients, 9 underwent our TC consultation process. In total ten patients died, 5 of whom underwent TC process; 2 were lost follow-up; 51% (13/45)have been decannulated; 20% (9/45) had MV.

Conclusions: A TC can facilitate both information sharing and decision-making. In the majority of cases consensus can be reached. Further research is needed to evaluate the role of a multidisciplinary committee in decision making in medically complex children.

Keywords: Decision making, Medically complex patients, Multidisciplinary , Technology , Tracheostomy
EFFECTIVENESS OF SALBUTAMOL TABLET VERSUS SALBUTAMOL AEROSOL INHALER WITH SPACER IN THE TREATMENT OF ACUTE ASTHMA EXACERBATIONS IN CHILDREN: A PRAGMATIC RANDOMIZED CONTROLLED TRIAL

Ramasamy Balasubramaniam, Shalini Sri Ranganathan, Saman Abeyawardena, Nalika Gunawardena, Geethanjali Sathidas, Ayesha Shirmindi, Janaka Chaminda Kumara

1Ministry of Health, Medical Research Institute, 2Pharmacology, Faculty of Medicine, Colombo, 3Ministry of Health, General Hospital, Ratnapura, 4Community Medicine, Faculty of Medicine, Colombo, 5Paediatrics, Faculty of Medicine, Jaffna, 6Ministry of Health, Base Hospital, Embilipitiya, Sri Lanka

Background and aims: To compare effectiveness of salbutamol tablet with salbutamol aerosol inhaler+spacer in mild-moderate acute asthma exacerbations in 5-12 year olds.

Methods: Balanced randomized single blind two arm parallel group pragmatic clinical trial. Children aged 5-12 years clinically diagnosed with mild-moderate acute asthma exacerbation were randomly assigned to age appropriate doses of salbutamol tablet or aerosol inhaler+spacer. Primary outcome was proportion of children completely recovered (Pulmonary Score=0) in ≤3 days.

Results: 41 were assigned to tablet and 44 to inhaler. No significant difference in age, gender and severity between groups (p>0.05): 85% in tablet group and 91% in inhaler+spacer group were completely recovered in ≤3 days (p=0.14). No significant difference in secondary outcomes: mean doses (p=0.72), mean duration (p=0.83), return to school (p=0.24), recurrence (p=0.36) or side-effects

Conclusions: Effectiveness measured by clinical outcomes showed that salbutamol given as tablet is as effective as aerosol inhaler+spacer in mild-moderate acute asthma exacerbations in 5-12 year olds.

Keywords: Childhood asthma, clinical trial, inhaler, salbutamol, tablet
IMPACT OF DIARRHEA ON CLINICAL AND LABORATORY PRESENTATION AND OUTCOME OF SEVERE PNEUMONIA IN BANGLADESHI CHILDREN
M J Chisti¹, T Duke², M A Salam³, K M Shahunja¹, A S M S B Shahid¹, P K Bardhan¹, A S G Faruque¹, T Ahmed¹

¹Nutrition and Clinical Services Division, International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, ²Paediatrics, The Royal children’s Hospital, The University of Melbourne, Melbourne, Australia, ³RACS, International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh

**Background and aims:** Co-morbidity of pneumonia and diarrhea accounts for more than one fourth of the under-five childhood deaths globally; however, there is lack of data on the interaction between diarrhea and pneumonia. We, therefore, sought to evaluate the interaction at hospitalization and outcome during hospitalization among such children.

**Methods:** We compared clinical and laboratory presentation and outcome of Bangladeshi children with severe pneumonia between those with and those without diarrhea. The trial is registered at ClinicalTrials.gov number NCT01396759.

**Results:** During August 2011 through July 2013, 113 children with severe pneumonia having diarrhoea and 112 without diarrhea were enrolled. In logistic regression analysis, diarrheal children with severe pneumonia were independently associated with metabolic acidosis and hypocalcemia on presentation (for all, P<0.05). During hospitalization, study children with diarrhea more often developed respiratory failure (21% vs. 6%; p=0.002) and had fatal outcome (20% vs. 3%; p<0.001) compared to non-diarrhoeal children.

**Conclusions:** Diarrhea is an important co-morbidity in pneumonia mortality in developing countries, and will only be addressed by holistic integrated interventions.

**Keywords:** children, diarrhea, fatal outcome, metabolic acidosis, severe pneumonia
IN CHILDREN WITH PNEUMONIA IN A DEVELOPING COUNTRY, CAN WE PREDICT THE NEED FOR SUBSEQUENT INTENSIVE CARE, AT THE TIME OF PRESENTATION?

Joseph L Mathew¹, Sunit Singhi², Arun Bansal¹, Pallab Ray³

¹Pediatrics, PGIMER, Chandigarh, ²Pediatrics, MM Institute of Medical Science and Research, Mullana, ³Medical Microbiology, PGIMER, Chandigarh, India

Background and aims: Background: Prediction (at presentation) of later need for intensive care, among children with pneumonia can facilitate optimal resource allocation in resource-constrained developing countries.

Aim: To identify presenting features in childhood pneumonia, that predict need for subsequent intensive care.

Methods: Children (1-144 months) with severe/very severe pneumonia (WHO IMCI definition) were prospectively enrolled. Those with symptoms >7 days or prior antibiotic therapy >24 hours, were excluded. Demographic data, presenting symptoms, examination findings, and laboratory investigations, were recorded. Data of those who did (and did not) require intensive care (defined as need for intubation and/or assisted ventilation) were compared.

Results: The cohort comprised 2670 children; 815 (30.5%) required subsequent intensive care. Respiratory rate at presentation >110% and >120% of age-specific cut-off values were strong predictors of need for intensive care (Figure1). Symptoms of feeding difficulty, altered sensorium, convulsions and chest indrawing; as well as Examination findings of hypoxia, central cyanosis, and crackles were also predictors (Figure1). None of the hematologic, radiographic, and microbiologic investigations (except Staphylococcal bacteremia) were predictors (Figure1).

Conclusions: The clinical characteristics identified in this study can be used at presentation to predict the need for subsequent intensive care, thereby facilitating appropriate triage and resource allocation in resource-limited settings in developing countries.
<table>
<thead>
<tr>
<th>Demographic features</th>
<th>Children requiring intensive care N=815</th>
<th>Children not requiring intensive care N=1855</th>
<th>Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt;12 mo</td>
<td>565 (69.3%)</td>
<td>1108 (59.7%)</td>
<td>1.52 [1.28, 1.82]</td>
</tr>
<tr>
<td>Female Gender (%)</td>
<td>232 (28.5%)</td>
<td>545 (29.3%)</td>
<td>0.96 [0.80, 1.15]</td>
</tr>
<tr>
<td><strong>Symptoms</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cough (%)</td>
<td>724 (88.8%)</td>
<td>1772 (95.5%)</td>
<td>0.37 [0.27, 0.51]</td>
</tr>
<tr>
<td>Breathing difficulty (%)</td>
<td>776 (95.2%)</td>
<td>1670 (90.0%)</td>
<td>2.20 [1.54, 3.15]</td>
</tr>
<tr>
<td>Fever (%)</td>
<td>696 (85.4%)</td>
<td>1543 (83.2%)</td>
<td>1.18 [0.94, 1.49]</td>
</tr>
<tr>
<td>Feeding difficulty</td>
<td>196 (24.4%)</td>
<td>161 (8.7%)</td>
<td>3.33 [2.65, 4.18]</td>
</tr>
<tr>
<td>Altered consciousness</td>
<td>200 (24.5%)</td>
<td>163 (8.8%)</td>
<td>3.38 [2.69, 4.23]</td>
</tr>
<tr>
<td>Convulsions</td>
<td>38 (4.7%)</td>
<td>48 (2.6%)</td>
<td>1.84 [1.19, 2.84]</td>
</tr>
<tr>
<td>Chest indrawing</td>
<td>572 (70.2%)</td>
<td>1146 (61.8%)</td>
<td>1.46 [1.22, 1.74]</td>
</tr>
<tr>
<td>Audible wheeze</td>
<td>367 (45.0%)</td>
<td>631 (34.0%)</td>
<td>1.59 [1.34, 1.88]</td>
</tr>
<tr>
<td><strong>Examination findings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RR &gt;10% of age-specific cut-off</td>
<td>655 (80.4%)</td>
<td>933 (50.3%)</td>
<td>4.05 [3.33, 4.92]</td>
</tr>
<tr>
<td>RR &gt;20% of age-specific cut-off</td>
<td>507 (62.2%)</td>
<td>655 (35.3%)</td>
<td>3.02 [2.54, 3.58]</td>
</tr>
<tr>
<td>Central cyanosis</td>
<td>91 (11.2%)</td>
<td>68 (3.7%)</td>
<td>3.30 [2.38, 4.58]</td>
</tr>
<tr>
<td>Oxygen saturation &lt;95%</td>
<td>475 (58.3%)</td>
<td>724 (39.0%)</td>
<td>2.18 [1.85, 2.58]</td>
</tr>
<tr>
<td>Oxygen saturation ≤92%</td>
<td>373 (45.8%)</td>
<td>458 (24.7%)</td>
<td>2.57 [2.16, 3.06]</td>
</tr>
<tr>
<td>Signs of severe malnutrition</td>
<td>465 (57.1%)</td>
<td>916 (49.4%)</td>
<td>1.36 [1.15, 1.61]</td>
</tr>
<tr>
<td>Stridor</td>
<td>16 (2.0%)</td>
<td>22 (1.2%)</td>
<td>1.67 [0.87, 3.19]</td>
</tr>
<tr>
<td>Grunting</td>
<td>21 (2.6%)</td>
<td>14 (0.8%)</td>
<td>3.48 [1.76, 6.87]</td>
</tr>
<tr>
<td>Subcostal or Suprasternal retractions in addition to intercostal retractions</td>
<td>538 (66.0%)</td>
<td>782 (42.2%)</td>
<td>2.66 [2.24, 3.16]</td>
</tr>
<tr>
<td>Crackles</td>
<td>635 (77.9%)</td>
<td>1359 (73.3%)</td>
<td>1.29 [1.06, 1.56]</td>
</tr>
<tr>
<td>Isolated bronchial breathing</td>
<td>25 (3.1%)</td>
<td>26 (1.4%)</td>
<td>2.23 [1.28, 3.88]</td>
</tr>
<tr>
<td>Hemoglobin ≤10 g/dl</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLC &gt; 11000/mm³</td>
<td>416 (51.0%)</td>
<td>870 (46.9%)</td>
<td>1.18 [1.00, 1.39]</td>
</tr>
<tr>
<td>TLC ≤ 4000/mm³</td>
<td>388 (47.6%)</td>
<td>917 (49.4%)</td>
<td>0.93 [0.79, 1.10]</td>
</tr>
<tr>
<td>WHO Class I chest xray</td>
<td>380 (46.6%)</td>
<td>783 (42.2%)</td>
<td>1.20 [1.01, 1.41]</td>
</tr>
<tr>
<td>WHO Class II chest xray</td>
<td>232 (33.4%)</td>
<td>665 (35.8%)</td>
<td>0.90 [0.75, 1.07]</td>
</tr>
<tr>
<td>WHO Class III chest xray</td>
<td>160 (19.6%)</td>
<td>400 (21.6%)</td>
<td>0.89 [0.72, 1.09]</td>
</tr>
<tr>
<td>WHO Class IV chest xray</td>
<td>3 (0.4%)</td>
<td>7 (0.4%)</td>
<td>0.98 [0.25, 3.78]</td>
</tr>
<tr>
<td>Bacteria in Nasopharyngeal aspirate</td>
<td>87 (10.7%)</td>
<td>284 (15.3%)</td>
<td>0.66 [0.51, 0.85]</td>
</tr>
<tr>
<td>Pneumococcus</td>
<td>76</td>
<td>266</td>
<td>0.61 [0.47, 0.80]</td>
</tr>
<tr>
<td>Staphylococcus species</td>
<td>8</td>
<td>8</td>
<td>2.29 [0.86, 6.12]</td>
</tr>
<tr>
<td>Gram negative bacteria</td>
<td>2</td>
<td>1</td>
<td>4.56 [0.41, 50.37]</td>
</tr>
<tr>
<td>Bacteria in blood</td>
<td>31 (3.8%)</td>
<td>33 (1.8%)</td>
<td>2.18 [1.33, 3.59]</td>
</tr>
<tr>
<td>Pneumococcus</td>
<td>5</td>
<td>7</td>
<td>1.63 [0.52, 5.15]</td>
</tr>
<tr>
<td>Staphylococcus species</td>
<td>16</td>
<td>10</td>
<td>3.69 [1.67, 8.18]</td>
</tr>
<tr>
<td>Gram negative bacteria</td>
<td>5</td>
<td>9</td>
<td>1.27 [0.42, 3.79]</td>
</tr>
</tbody>
</table>

**Keywords:** Childhood pneumonia, Developing country, Intensive Care, predictors
INFANTS WITH ACUTE BRONCHIOLITIS IN THE GENERAL EMERGENCY DEPARTMENT
Jan Kovacech

Emergency , Redland Hospital, Queensland Cleveland, Australia

Background and aims: Bronchiolitis is one of the most common conditions for which infants are seen in the emergency department. The objective of this study was to describe the characteristics of infants presenting to the general emergency department with acute bronchiolitis.

Methods: A retrospective review of the medical records of infants age 0-12 months presented to the emergency department between August 2013 and July 2015 with acute bronchiolitis was done. We analysed the demographic data, clinical assessment, day time of presentation, month of presentation, management parameters and the aetiologal agent.

Results: A total of 324 infants were identified. The mean age was 6.9 months. 67% were male and 33% were female. The majority of infants presented between 8am-1pm and 4pm-7pm. The monthly distribution had a two peaks: in May and October. 48% of infants were admitted to the hospital. Therapeutic interventions varied: we used NGT feeds, i.v. fluids and nasal oxygen. High flow nasal canula oxygen was used in 27 infants. The presence of viruses were identified in 118 infants. A single viral pathogen was detected in 90% and two viruses co-detected in 10%. Respiratory syncytial virus was the most common virus identified followed by adenovirus, parainfluenza type 3, human metapneumovirus and influenza type B.

Conclusions: Our study documented that bronchiolitis is one of the major cause of hospital admissions. Respiratory syncytial virus was the most common cause of bronchiolitis.

Keywords: infants, bronchiolitis, emergency department
LONG-TERM EPIDEMIOLOGICAL STUDY OF TUBERCULOSIS AT CHILDREN FROM GALATI COUNTY OF ROMANIA

Elena Ariela Banu* 1, 2, Aurelia STEFAN 3, Madalina Codruta Verenca 2, 4

1 Pediatrics 3, Sfantul Ioan Clinical Emergency Hospital for Children, 2 Dunarea de Jos University, 3 Children Pneumology, Pneumology Hospital, 4 Sfantul Ioan Clinical Emergency Hospital for Children, GALATI, Romania

**Background and aims:** Tuberculosis represents even today a public health problem in Romania and worldwide. Therefore, the long-term analysis of the evolution of such a wide-spread disease is very important, especially for children, whose sensitivity and involved risks are higher than for most adults. This study aims to reveal the main epidemiological aspects of infantile tuberculosis at regional level as compared to the national status.

**Methods:** An epidemiological study was performed, comprising the period between 1999-2009. Districtual and national data from health institutions were used. The districtual data consisted in a cohort of 1144 children with ages between 0 and 18 years old, which were hospitalized with a tuberculosis diagnostic within the Pneumology Hospital from Galati, Romania. Sputum tests were considered as bacteriological examination.

**Results:** 22.98 % of the children hospitalized with a tuberculosis diagnosis were confirmed as having a positive bacteriological examination. Between 1999 and 2009, the incidence of tuberculosis in children from Galati county region was higher than at national level. Specific age groups were identified as more sensitive to disease.

**Conclusions:** The studied period is related to economic decrease and to family disorganization due to adult migration in search of workplaces. These issues combined with a humid and polluted environment led to the recrudescence of child tuberculosis, whose management needs to be improved at both regional at national level.

**Keywords:** children, epidemiological study, tuberculosis
Pulmonology

OBESITY AND ETHNICITY: OBSTRUCTIVE SLEEP APNEA RISK FACTORS POORLY REPRESENTED IN SLEEP APNEA SCREENING QUESTIONNAIRES

Arzu Chaudhry¹, Lily Nguyen², Evelyn Constantin³
¹McGill University, ²Montreal Children's Hospital, McGill University Health Centre, ³Montreal Children's Hospital, McGill University Health Center, Montreal, Canada

Background and aims: Many screening questionnaires have been described in the literature for pediatric obstructive sleep apnea. However, there is significant variability in the elements they take into consideration. Our objective is to identify all questionnaires that screen for pediatric OSA and to review and contrast items within these questionnaires.

Methods: We reviewed the literature using Pubmed and the health and psychosocial instruments (HaPi) database, to identify all questionnaires for pediatric OSA. We also checked reference lists of all included articles. Questionnaires were included in the analysis if their primary goal was to identify or screen for OSA in children 0-18 years old. We described the questionnaires qualitatively by identifying all items within each questionnaire, including demographics, risk factors, signs, symptoms, and outcomes.

Results: Sixty articles were included in the analysis based on predetermined inclusion criteria. Forty-two questionnaires were identified. Thirty-two questionnaires containing 49 different items were included in the analysis. Items most commonly included in questionnaires were: snoring (81%), observed apnea (81%) and daytime sleepiness (81%). Other clinically relevant items, such as ethnicity (6%), and body mass index (31%), were not consistently included. Thirty-one questionnaires used quantitative scores to identify OSA.

Conclusions: There are currently several questionnaires that aim to screen children for OSA. However, these questionnaires rarely include known OSA risk factors such as ethnicity, and obesity and are not able to predict OSA severity.

Keywords: Ethnicity, Obesity, OSA, Questionnaire, Risk factor
QUANTIFICATION OF DRY POWDER INHALER TOBRAMYCIN DELIVERY IN IN VITRO MODELS OF TRACHEOSTOMIZED PEDIATRIC PATIENTS

Wallace Wee¹, Scott Tavernini², Andrew Martin², Israel Amirav³, Carina Majaesic³, Warren Finlay²
¹Pediatrics, ²Mechanical Engineering, ³Pediatric Pulmonology, University of Alberta, Edmonton, Canada

Background and aims: Pediatric tracheostomies are not uncommon and aerosols allow for targeted lung therapy. But there is little literature that quantifies aerosol delivery through tracheostomies. Nebulizers are commonly used in delivering Tobramycin, but there are drawbacks e.g. time burden. Dry powder inhalers (DPI) can deliver higher payloads in less time. However, no data exists assessing DPIs with tracheostomies. The study's aim was to quantify the amount of aerosolized tobramycin delivered to the lungs of in vitro tracheostomized spontaneously breathing pediatric models with the TOBI Podhaler DPI and PARI LC Plus nebulizer.

Methods: In vitro tracheostomized models of a 6- and 12-year old trachea were created. Aerosol was delivered to the models using the LC Plus and Podhaler, and captured on a filter at the trachea's distal end. A colorimetric tobramycin assay was used to quantify the amount. Three devices of each type were tested in triplicate to ensure repeatability.

Results: A total of 36 runs (LC Plus: 18, Podhaler: 18) were completed and showed the Podhaler was more efficient compared to the LC Plus. The results are in percent of nominal dose, mean ± stand. dev. (LC Plus vs. Podhaler); all runs (24.1±3.7 vs. 86.6±8.7), 6-year old (23.2±2.6 vs. 82.1±9.9) and 12-year old (24.1±4.5 vs. 86.6±4.2). The results were statistically significant, P-values<0.01, based on unpaired t-tests.

Conclusions: The study’s results show that the Podhaler was significantly more efficient compared to the LC Plus. These results suggest that Podhaler's tobramycin delivery is a feasible option and a clinical study is warranted.

Keywords: Dry Powder Inhaler, In vitro, Nebulizer, Tobramycin, Tracheostomy
REASONS FOR RE-CONSULTATION AMONG PATIENTS WITH NON-SPECIFIC UPPER RESPIRATORY TRACT INFECTION SEEN AT THE OUT-PATIENT DEPARTMENT OF A SECONDARY GOVERNMENT HOSPITAL

Glady Rose Ragual¹, Arvin Escueta¹
¹Department of Pediatrics, Jose R. Reyes Memorial Medical Center, Manila, Philippines

Background and aims: Upper Respiratory Tract Infection (URTI) is one of the most common causes of consult in the out-patient setting. This study aims to determine the reasons for re-consult among patients 2-18 years old with URTI at the Out-Patient Department of a Secondary Government Hospital.

Methods: All eligible subjects were sampled consecutively as they came to the OPD. A validated questionnaire was used.

Results: Most of the respondents have low knowledge on URTI. Respondents >30 years old with higher education and are currently working have higher knowledge scores. First consult was mostly at the health center, with the nurse as the most common health provider. All patients re-consulted for re-assurance of recuperation. Other reasons include seeing no improvement and perception that the child has already been sick for a long time. Majority of the respondents expected further work-up to be done (96.8%), to be given antibiotics (90.8%), or be admitted for parenteral medication (74.8%).

Conclusions: Lack of knowledge about URTI and its treatment can lead to unnecessary consultations. Health providers should practice appropriate prescribing and not succumb to expectations from patients. Both instances can increase the cost of medical care, and increase risk of adverse effect from inappropriately prescribed drug, for what is essentially a benign and self-limited disease.

Keywords: knowledge, re-consult, URTI
UNILATERAL EMPHYSEMA IN INFANCY, A RARE PRESENTATION OF ABERRANT BRONCHIAL ARTERY: CASE REPORT AND REVIEW OF LITERATURE.

Tarek Eldesoky¹, Engy Osman¹, Amal Osman¹, Ahmed Zaki¹, Adel Elgamal²
¹Mansoura university - Faculty of Medicine- Pediatrics department, ²Mansoura university - Faculty of Medicine- Cardiac surgery department, mansoura, Egypt

**Background and aims:** Aberrant bronchial arteries are rarely seen and may originate from various vascular structures. We report a case of a 1-month-old infant presented with respiratory distress and left lung emphysema. Radiologic investigations and bronchoscopy revealed that the cause is an aberrant left bronchial artery compressing the left main bronchus. Surgical division of the aberrant vessel was performed with gradual improvement of the emphysema and respiratory distress. Unilateral emphysema due to vascular compression was previously reported. To the best of our knowledge, this is the youngest and the first reported case of aberrant bronchial artery presenting with external compression of a main bronchus and unilateral emphysema.

**Methods:** one old infant presented with dyspnea and unilateral emphysema investigated with bronchoscope and multislices CT chest. Pubmed database was reviewed for aberrant bronchial artery presentations.

**Results:** This is the first reported case of aberrant bronchial artery presenting with unilateral emphysema.

Also, this is the youngest reported case with an aberrant bronchial artery.

**Conclusions:** External vascular compression should be excluded in cases with congenital unilateral emphysema

**Keywords:** aberrant bronchial artery, bronchoscope, emphysema
Vaccinations

CLINICAL TETANUS AMONG CHILDREN: ENGLAND 2001-2015
Sarah Collins1, Gayatri Amirthalingam1, Nick Beeching2, Meera Chand3, Gauri Godbole3, Mary Ramsay1, Norman Fry4, Joanne White1
1IHBSD, Public Health England, London, 2TIDU, Liverpool School of Tropical Medicine, Liverpool, 3MS, 4RVPBRU, Public Health England, London, United Kingdom

Background and aims: Tetanus, a potentially life-threatening disease caused by Clostridium tetani neurotoxin, is preventable by vaccination. High vaccine coverage in England has been maintained since routine childhood tetanus immunisation was introduced in 1961 with coverage ≥94% since 1990. We describe recent epidemiology of clinically suspected cases of tetanus in children.

Methods: Public Health England carries out enhanced surveillance of vaccine-preventable diseases. A standardised questionnaire was used to ascertain clinical and demographic details of children ≤16 years old with suspected clinical tetanus during 2001-15. Since 2012, details of discarded cases were also available.

Results: During 2001-2015 there were four clinical tetanus cases in children (range 8-15 years); three were male. Two cases had sustained puncture wounds, two had no known history of injury. Two of three mild tetanus cases were age appropriately immunised, one was partially immunised. One unimmunised case had severe tetanus. All received immunoglobulin and recovered. Two additional cases who presented with trismus were subsequently discarded; one had a viral infection, the other had a serious head injury.

Conclusions: In England tetanus remains a rare disease, particularly among children. Unimmunised children are at risk of developing severe disease but even partially or age-appropriately immunised children can develop mild tetanus. Maintaining awareness of clinical tetanus as a differential diagnosis is increasingly challenging when few clinicians have experience of the disease.

Keywords: Immunisation, Outcome, Tetanus
CONTROL OF HIB IN CHILDREN: EPIDEMIOLOGY AND SEROPREVALENCE IN ENGLAND

Sarah Collins¹, David Litt², Mary Slack², Rachael Almond³, Jamie Findlow³, Ezra Linley³, Ray Borrow³, Shamez Ladhani¹

¹IHBSD, ²RVPBRU, Public Health England, London, ³VEU, Public Health England, Manchester, United Kingdom

Background and aims: The introduction of the Hib conjugate vaccine in England resulted in a rapid decline in invasive Hib disease. However, a resurgence of Hib during 2000-2002 prompted the introduction of additional control measures, including a routine 12-month booster in 2006. Here we describe the recent epidemiology of Hib among children and results from a national seroprevalence study.

Methods: Public Health England conducts enhanced national surveillance of invasive Hib disease. Clinical information was obtained for all confirmed cases <16 years during 2009-15. A national seroprevalence study was performed to determine the prevalence of Hib IgG antibodies among 807 children <10 years.

Results: Hib cases have declined since 2002 with the lowest ever incidence in children in 2015 (0.01/100,000; 1 case). Of the 29 children diagnosed during 2009-15, 17 (59%) developed meningitis and 1 died. Twenty-six were eligible for vaccination, but only three were fully immunised.

In the seroprevalence study, median anti-PRP IgG concentrations were highest among 1 year olds (4.45 μg/mL); but declined to 1.14 μg/mL at 4 years of age. Overall, 92% of children aged 6 months to 10 years had achieved short-term protective antibody threshold of ≥0.15 μg/mL, indicating short-term immunity.

Conclusions: Control of Hib in England is currently the best ever achieved. However, Hib antibodies wane rapidly after the 12 months booster. Although most children remained protected against disease, antibody levels may not be high enough to prevent carriage among toddlers. Ongoing monitoring is essential to inform future vaccination policy.

Keywords: Haemophilus influenzae type B, Immunisation, Outcome, Risk Factors, Seroprevalence
DEVELOPMENT OF AN IMMUNIZATION EDUCATION AND POLICY FRAMEWORK FOR THE PEDIATRICIANS OF ONTARIO

Hirotaka Yamashiro*1

1Yamashiro Pediatric Clinic, Toronto, Canada

Background and aims: When new vaccines are approved by Health Canada, national bodies provide guidance on their recommended use but decisions to fund are made by provincial governments, leading to provincial variances. Pediatricians Alliance of Ontario (PAO) represents 1200 pediatricians. We developed a new process for assessing how pediatricians could advocate for new vaccine funding in Ontario.

Methods: Initial needs assessment of members led to specific learning objectives. A panel of recognized experts and PAO leaders led the working group on recommendations and delivered accredited province-wide CME by webinar. Based on this, recommendations on funding Meningococccal B vaccine with supporting rationale was developed and reviewed by members.

Results: After an initial needs assessment survey, we created recommendations for public funding of Meningococccal B vaccine and surveyed our members. There were 121 responses (10%). Over 90% of responders supported routine use and public funding of the new meningococcal B vaccine, while over 92% of responders supported increased participation of pediatricians on vaccine advisory committees.

Conclusions: PAO as a result of this pilot project, has developed a new process that aims to provide members with accredited education on immunization, to improve physician confidence and consistency of messages to parents. Recommendations developed by our membership will be used to communicate with key stakeholders in government about immunization policy.

Keywords: government funding, meningitis, pediatrician advocacy, vaccination
Vaccinations

EFFECT OF INTRODUCTION OF PENTAVALENT VACCINE AS REPLACEMENT FOR DIPHTHERIA – TETANUS-PERTUSSIS AND HEPATITIS B VACCINES ON VACCINATION UPTAKE IN A HEALTH FACILITY IN NIGERIA

Ayebo SADOH¹, Damian NWANERI¹, Bamidele OGOBOGHODO¹, Wilson SADOH²
¹INSTITUTE OF CHILD HEALTH, ²DEPARTMENT OF CHILD HEALTH, UNIVERSITY OF BENIN, BENIN CITY, Nigeria

Background and aims: The aim of this study is to examine the effect of introduction of Pentavalent vaccine (in June 2012) on timeliness, completion of the schedule and dropout rates among children attending the Institute of Child Health Child Welfare Clinic.

Methods: This cross sectional retrospective study examined immunization records of children vaccinated between June 2011 and May 2013. The uptake, timeliness and dropout rates of different vaccines in the immunization schedule were determined.

Results: There were 190, 410 and 510 children who commenced vaccination in the pre, peri and post introduction phases respectively. Uptake was significantly higher for all vaccines in post introduction phase compared to pre and peri introduction phases (p<0.001). Completion of the immunization schedule by 60.2% of children who commenced vaccination in the post introduction phase was higher than the 31.6% and 41.7% for pre and peri introduction phases respectively (p<0.001). Delay in receipt of the three doses of DTP/PENTA was significantly longer in the peri introduction phase compared to the other phases.

Conclusions: Introduction of Pentavalent vaccine improved uptake of vaccines and completion of the schedule but resulted in prolonged delay in receipt of vaccines during the introduction period.

Keywords: EFFECT, INTRODUCTION, PENTAVALENT, UPTAKE, VACCINATION, VACCINE
HEALTHCARE WORKERS’ PERSPECTIVES ON EBOLA VIRUS VACCINE: A FOCUS GROUP AND IN-DEPTH INTERVIEW INTERVENTIONAL STUDY.
Dorothy Omono Esangbedo¹, Maduka Ughasoro², Beckie N. Tagbo³, Adebiyi Olowu⁴, Chukwuemeka Anikene⁵, Chimaobi Iwegbulam⁶
¹Paediatrics Division, Providence Hospital, Ikoyi, Lagos, ²Paediatrics, University of Nigeria Enugu Campus, ³Institute of Child/Paediatrics, University of Nigeria Teaching Hospital, Enugu, ⁴Paediatrics, Olabisi Onabanjo University Teaching Hospital, , Ogun, ⁵Paediatrics, University of Nigeria Teaching Hospital, Enugu, ⁶Paediatrics, Federal Medical Center, Umuahia, Nigeria

Background and aims: Healthcare workers are candidates for ebola virus vaccine (EVV) administration when the vaccine is introduced. Evaluation of acceptability and factors that will facilitate or limit the vaccine uptake are critical for a successful vaccine program.

Methods: Interviews involving Nigerian HCWs were conducted. Their knowledge, acceptability, determinants of acceptance and willingness-to-pay (WTP) for EVV were evaluated. Significance was set at p≤ 0.05.

Results: None of the 193 participating HCWs had correct knowledge of EVV. 34.7% (67/193) thought that EVV was extract of the serum of ebola virus sufferers. 77.3% (51/66) in the region that reported ebola cases (Lagos, southwest) were willing to vaccinate compared to 3/61 (4.7%) in Enugu, and 9/66 (13.6%) Abia, southeast, (p=0.0001). Post-health education, the proportion of HCWs willing to receive EVV increased (p=0.006) except for doctors (p < 0.1). 86.4%, 72.1% and 59% in Lagos, Enugu and Abia respectively were willing to pay for EVV.

Conclusions: The EVV has a good prospect since most of their fears were unfounded and with adequate information, majority can be convinced. However, Cluster approach and class based may be the preferred vaccine introduction strategy (starting in the areas that reported ebola cases and among healthcare workers spontaneously willing to accept the vaccine), at an affordable price but not free.

Keywords: None
Vaccinations

IMMUNIZATION AND VACCINE PREVENTABLE DISEASES IN PAEDIATRIC PATIENTS ON RITUXIMAB
Daryl Cheng¹,², Nigel Crawford²,³
¹Royal Children’s Hospital, Melbourne, ²Paediatrics, University of Melbourne, Carlton, ³SAEFVIC, Royal Children’s Hospital, Parkville, Australia

Background and aims: Rituximab is an increasingly utilised medication across a wide range of paediatric medical conditions. Due to its immunosuppressive properties, this subgroup of patients is at increased risk of infection and vaccine preventable diseases, and require added strategies to optimise and maximise their protection against such illnesses. This article aims to analyse existing literature surrounding vaccine immunogenicity and safety in paediatric patients on Rituximab, and to assist in providing an evidence base to develop immunization guidelines for these patients.

Methods: A search and analysis of articles on MEDLINE and Pubmed was conducted - including existing national guidelines, recommendations, consensus statements on Rituximab and vaccination.

Results: Depleted cellular and humoral immunity from Rituximab begins to recover from 6 months, but may not reach full recovery for up to 12 months. Hence, immunogenicity studies have shown minimal vaccine response to influenza or pneumococcal vaccine. There is mixed efficacy to tetanus vaccine with response more likely from 6 months post-Rituximab onward.

Conclusions: Optimizing vaccine status and establishing adequate antibody titres prior to commencing Rituximab remains the best protective strategy possible. The use of inactivated vaccines at least six months post-Rituximab treatment is ideal for best vaccine response. The use of live-attenuated vaccines should be considered and discussed with treating clinicians. By integrating current best available data, efforts are synergized to protect vulnerable paediatric patients using Rituximab from VPD.

Keywords: Immunization, immunosuppression, paediatrics, rituximab, VACCINATION
LESSONS LEARNT FROM HUMAN PAPILLOMAVIRUS VACCINATION IN LOW AND MIDDLE-INCOME COUNTRIES

Katherine E Gallagher¹, Natasha Howard¹, Severin Kabakama², Ulla K Griffiths¹, Sandra Mounier-Jack¹, Marta Feletto³, Scott LaMontagne³, Helen E Burchett¹, Deborah Watson-Jones¹,²

¹London School of Hygiene & Tropical Medicine, London, United Kingdom, ²Mwanza Intervention Trials Unit, National Institute for Medical Research, Mwanza, Tanzania, United Republic of, ³PATH, Geneva, Switzerland

Background and aims: To synthesise lessons from HPV vaccine demonstration projects and national programmes in low and middle-income countries.

Methods: A systematic literature review identified 1301 published sources; 41 were included after screening with 124 unpublished sources, and 27 key informant interviews in 23 countries. Analysis was thematic, informed by WHO guidelines for vaccine introduction.

Results: Data included 55 demonstration projects and 8 national programmes in 2007-2015 (i.e. 89 years’ experience in 37 countries). Projects were supported by GARDASIL®Access Program (29), Gavi (9), PATH (4), and others (13). School-based vaccination supplemented by health facility-based delivery attained highest coverage. Strategies to reach out-of-school girls were limited. Early engagement of teachers in social mobilisation, consent, vaccination coordination, follow-up and adverse events was invaluable. Micro-planning using school/facility registers best enumerated target populations. Refresher training on adverse events and safe injection procedures was usually necessary.

Conclusions: Considerable HPV vaccination experience in LMICs is available. Lessons are generally consistent across countries, dissemination of which could improve HPV vaccine introduction.

Keywords: HPV, vaccine introduction
MF59-ADJUVANTED SEASONAL INACTIVATED INFLUENZA VACCINE: WELL TOLERATED AND HIGHLY IMMUNOGENIC IN YOUNG CHILDREN – CUMULATIVE CLINICAL EXPERIENCE

Sanjay Patel¹, Svetlana Bizjajeva², James Mansì³, Kelly Lindert⁴, Esther Heijnen⁵
¹Influenza Vaccines Development Franchise, Novartis Vaccines & Diagnostics, Cambridge, United States, ²Biostatistics, Shire Pharmaceuticals, Zurich, Switzerland, ³Medical Affairs, Novartis Influenza Vaccines, Quebec, Canada, ⁴Global Development, NVS Influenza Vaccines, Cambridge, United States, ⁵Clinical Development, Seqirus Netherlands B.V., Amsterdam, Netherlands

Background and aims: Vaccination against seasonal influenza is recommended in children, however non-adjuvanted trivalent influenza vaccines (TIV) have modest efficacy. Adjuvants improve vaccine responses and the MF59-adjuvanted trivalent influenza vaccine (aTIV) FLUAD® has shown effectiveness in the elderly. An integrated analysis was performed to evaluate aTIV in children aged 6 to <72 months.

Methods: Data from six clinical studies were used to evaluate immunogenicity (haemagglutination inhibition titres), efficacy (difference in rate of confirmed influenza cases) and safety. Adverse event (AE) data were pooled for an integrated safety assessment.

Results: Data from over 10,000 children were analysed and overall 5542 children were exposed to at least one dose of aTIV. Immunogenicity and efficacy were greater with aTIV than TIV. Solicited local and systemic AEs occurred more frequently with aTIV than TIV. Most events were mild or moderate (≤1% severe events). No other difference in safety profiles were observed between vaccine groups.

Conclusions: The analyses in children aged 6 to <72 months indicate that aTIV, FLUAD®, increases immune responses and protection, and may therefore offer significant advantages over conventional TIV while maintaining an acceptable safety profile. It may provide a valuable option for this vulnerable population.

Keywords: adjuvant, influenza, Vaccine, Young children
**Vaccinations**

**MF59-ADJUVANTED SEASONAL INACTIVATED INFLUENZA VACCINE: WELL TOLERATED AND HIGHLY IMMUNOGENIC IN YOUNG CHILDREN WITH UNDERLYING MEDICAL CONDITIONS**

Sanjay Patel¹, Svetlana Bizjajeva², Esther Heijnen*³

¹Influenza Vaccines Development Franchise, Novartis Vaccines & Diagnostics, Cambridge, United States, ²Biostatistics, Shire Pharmaceuticals, Zurich, Switzerland, ³Clinical Development, Seqirus Netherlands B.V., Amsterdam, Netherlands

**Background and aims:** Young children with underlying medical conditions (children at risk) have an increased risk of influenza-related complications. The MF59 adjuvant can improve the immunogenicity of seasonal (and pandemic) influenza vaccine in healthy children. The safety and immunogenicity of seasonal MF59-adjuvanted trivalent inactivated influenza vaccine (aTIV) were evaluated in children at risk aged 6 to <72 months.

**Methods:** Integrated analysis of six randomized trials compared the safety of aTIV with non-adjuvanted control vaccines (Flu-licensed and Flu-investigational) in children at risk. Immunogenicity was assessed using data from one study.

**Results:** Of the children at risk (n=373), 179 received aTIV and 194 control vaccines. Children at risk most frequently had a medical history of underlying respiratory system illnesses (62–70%). Solicited adverse events (AEs) were experienced by 74%, 73% and 58% of the aTIV, Flu-lic and Flu-inv groups, respectively. Geometric mean titers were 2–3-fold higher with aTIV than with control vaccines for all three vaccine strains (A/H1N1, A/H3N2 and B). Seroconversion rates were high for both aTIV (79–96%) and control vaccines (83–89%). A similar pattern of response as in healthy children was observed.

**Conclusions:** In children at risk, aTIV had an acceptable safety profile and induced higher antibody titers than non-adjuvanted vaccines. Results were similar to those in healthy children, suggesting the aTIV offers immunogenic advantages over non-adjuvanted vaccines in children at risk.

**Keywords:** Adjuvant, comorbidity, influenza, MF59, underlying medical conditions, vaccine, young children
Vaccinations

PHYSICIAN RESPONSE TO VACCINE HESITANCY IN PAEDIATRIC CARE

Kate Allan \(^1\), Dat Tran \(^2\), Barbara Fallon \(^1\)

\(^1\)Factor-Inwentash Faculty of Social Work, University of Toronto, \(^2\)Paediatrics, The Hospital for Sick Children, Toronto, Canada

**Background and aims:** Vaccine hesitancy is a growing global health challenge. This study aims to identify effective strategies in preventing vaccine non-compliance.

**Methods:** A one-time survey was distributed to paediatricians and paediatric subspecialists in Canada through the Canadian Paediatric Surveillance Program. Binary logistic regression analysis was used to identify predictors of success in avoiding vaccine non-compliance.

**Results:** In total, 665 paediatricians responded to the survey. Eighty-nine percent of participants noted that they had encountered parents who expressed concerns about vaccination in the past 12 months. Physicians reported the most common concerns expressed by parents were autism (63%), too many vaccines (55%), weakened immune system (46%) and vaccine additives (43%). Two predictors correlated with greater success in avoiding vaccine non-compliance: using a presumptive versus participatory approach to initiate vaccination discussions (OR 1.57) and using personal endorsement to address parental resistance (OR 1.53). Four percent of physicians reported that patients who received none of the recommended vaccines would not be permitted to continue to be served by their practice.

**Conclusions:** The vast majority of paediatricians regularly encounter vaccine hesitancy in clinical practice. Strategies used in the initiation of vaccination discussion and in response to parent resistance may increase the likelihood of vaccine compliance.

**Keywords:** provider survey, vaccine hesitancy, vaccine refusal
Vaccinations

SEROPREVALENCE OF ANTIBODIES AGAINST DIPHTHERIA AND PERTUSSIS AT 10-12 YEARS OF AGE AFTER FIVE DOSES OF DTWP VACCINATION AMONG INDIAN CHILDREN

Sanjay Verma*, Manoj Dhanorkar†, Amit Rawat†, Bhavneet Bharti†

†Pediatrics, PGIMER, Chandigarh, India

Background and aims: Primary DTwP vaccination in India, presently include 5 doses (6, 10, 14 wks, 1½ & 5 yrs); and no Tdap/Td at 10-12 years. Aim was to find out the seroprevalence rates of anti diphtheria-toxin (DT) & anti pertussis-toxin (PT) IgG antibodies in these children at 10-12 years.

Methods: In this cross-sectional, observational study, children attending OPD at 10-12 years (July 14 to June 15); having documented evidence of received these 5 doses, were enrolled after taking informed written consent. Institute ethics committee clearance was taken. Demographic details were recorded & 3 ml venous blood was collected. Quantitative estimation of these antibodies was done by using commercial ELISA kits.

Results: A total of 80 children (M:F=46:34) were enrolled. Anti-DT (IgG) were ≥0.1 IU/ml in 78.8% (63/80), 0.01 to <0.1 IU/ml in 20% (16/80) and <0.01 in 1.2% (1/80); having GMC 0.3055 IU/ml (0.2344-0.3055). Anti-PT (IgG) were ≥40 IU/ml in 17.5% (14/60); out of these 14 children, 4 had titers ≥100 IU/ml. Total of 82.5% (66/80) children had titers <40 IU/ml. Out of these 66 children, 46 had titers <10 IU/ml, 8 between 10-<20 IU/ml and 12 between 20-<40 IU/ml. GMC for pertussis was 7.039 IU/ml (4.697-10.55).

Conclusions: Among studied children, 17.5% had raised anti-PT IgG antibodies, suggesting that pertussis was not uncommon in this age group in India, even in vaccinated population; and 78.8% had protective level of immunity against diphtheria.

Keywords: Anti diphtheria-toxin, Anti pertussis-toxin, antibody, Seroprevalence
SURVEY OF HEALTH CARE PROVIDERS' PERCEPTIONS OF VACCINE PRODUCT MONOGRAPH SAFETY LANGUAGE AND IMPACT ON USE OF VACCINES IN PREGNANCY

Karina, A. Top1,2, Catherine Arkell3, Heather Scott3, Shelly McNeil1,4, Jaelene Mannerfeldt5, Justin, R. Ortiz6, Philipp Lambach6, Noni, E. MacDonald1,2

1Canadian Center for Vaccinology, IWK Health Centre, 2Department of Pediatrics, 3Department of Obstetrics & Gynecology, 4Nova Scotia Health Authority, Dalhousie University, Halifax, 5Departments of Obstetrics & Gynecology and Family Medicine, University of Calgary, Calgary, Canada, 6Initiative for Vaccine Research, World Health Organization, Geneva, Switzerland

Background and aims: In certain circumstances, WHO recommends maternal immunization to prevent serious infection in pregnant women and/or newborns. One barrier to maternal immunization programs may be perceptions that product monograph statements regarding safety and use in pregnancy contradict recommendations for vaccine use. We sought to describe the effect of precautionary statements in product monographs on healthcare providers’ perceptions of safety and anticipated use of vaccines in pregnancy.

Methods: Convenience samples of maternal healthcare providers from low, middle, and high income countries were recruited to complete an 8-item survey of their perceptions of vaccine safety after reading product monograph information.

Results: 141 participants (80% obstetricians, 9% midwives, 11% other) were recruited from 49 countries in all six WHO regions. 79% of respondents prescribe or administer immunizations and 52% read product monographs occasionally or often. Based on product monograph examples, e.g., “safety and effectiveness [in pregnancy] is not established,” and use “only if clearly needed”, 38% of respondents perceived the vaccine as moderately or very unsafe, 18% would not recommend the vaccine, and 75% stated that this language would affect how they counseled patients.

Conclusions: Regulatory language used in product monographs regarding safety and use of vaccines in pregnancy can be misinterpreted by healthcare providers as opposing WHO recommendations. Efforts are needed to clarify labeling information regarding use of vaccines in pregnancy.

Keywords: healthcare provider, immunization, pregnancy, vaccine hesitancy, vaccine safety
THE CONTRIBUTION OF NON-VACCINE SEROTYPES TO CHILDHOOD INVASIVE PNEUMOCOCCAL DISEASE IN ENGLAND AND WALES

Sarah Collins1, Carmen Sheppard2, David Litt2, Mary Slack2, Norman Fry2, Elizabeth Miller1, Shamez Ladhani1
1IHBSD, 2RVPBRU, Public Health England, London, United Kingdom

Background and aims: The PCV7 vaccine was introduced in England and Wales in 2006 and replaced by PCV13 in 2010. Both vaccines were associated with rapid declines in vaccine type (VT) IPD and a subsequent increase in non-vaccine type (NVT) IPD. We describe the serotype distribution of NVT-IPD in children during the 2014/15 epidemiological year and compare to pre-PCV7 (2005/06) and PCV7 (2009/10) years.

Methods: Public Health England routinely serotypes invasive pneumococcal isolates from patients across England and Wales. A data extract of all isolates from children aged <15 years during the 2005/06, 2009/10 and 2014/15 epidemiological years was created. Cases were grouped by serotype into NVT, PCV7, or PCV13-7 IPD.

Results: In 2014/15, 82% (299/363) of IPD isolates from children were NVT, 15% PCV13-7 and 3% PCV7 (Fig. 1). NVT serotypes contributed to only 10% of cases in the pre-PCV7 and 28% in the PCV7 years (Fig. 1). NVT-IPD contributed to 86% of cases in <1 year olds, 87% in 1-4 year olds, 72% in 5-9 year olds, and 65% in 10-14 year olds. In 2014/15, 16% of NVT IPD cases were 12F, 10% were 8 and 9% were 24F; the most prevalent VT IPD was 19A (27%; 17/64).

Conclusions: A successful immunisation programme has resulted in a marked decline in IPD due to PCV13 serotypes. Now, NVT accounts for 83% of childhood IPD. To combat the rise in NVT-IPD, higher valency vaccines are being developed; however, as no single serotype predominated the additional benefit may be limited. A serotype-independent vaccine could make a significant impact on the burden on IPD.

Image:
**Fig. 1** Proportion of PCV7, PCV13-7 and NVT over time

**2005/06**
- 486, 63%
- 205, 27%
- 77, 10%

**2009/10**
- 341, 63%
- 150, 28%
- 47, 9%

**2014/15**
- 299, 82%
- 53, 15%
- 11, 3%

**Keywords**: Immunisation, Invasive Pneumococcal Disease, Outcome
THE EFFICACY OF HEPATITIS B VACCINATION PROGRAM IN UPPER EGYPT: FLOW CYTOMETRY AND THE EVALUATION OF LONG TERM IMMUNOGENICITY

Nagla Abu Faddan¹, Nahed Makhlof², Ahlam Farghaly², Saad Mahmoud², Hebat-Alla Rashed³, Douaa Sayed³, Omnia El-Badawy⁴,⁴, Noha Afifi⁴, Wafaa Hamza⁵, Yousseria El-Sayed⁶

¹pediatrics, ²tropical medicine, ³clinical pathology, ⁴Microbiology and Immunology, ⁵Public Health and Community Medicine, Assiut University, Assiut, ⁶Pediatric Nursing, Sohag University, Sohag, Egypt

Background and aims: studies of persistence of hepatitis B vaccine induced immunity are limited. Aims: To evaluate the efficiency of hepatitis B vaccination program via evaluating anti-HBs levels and the long term persistence of HBsAg specific memory T-lymphocytes.

Methods: This study included 440 vaccinated persons during infancy, their age ranged from 6 to 17 years. All participants were screened for HBV markers. Then 45 cases were selected to measure the Cytokines secretion by HBsAg-specific memory CD45RO⁺ CD4⁺ T cells after in vitro culture using flow cytometry.

Results: The mean titer of anti-HBs was significantly high. IFN-γ and IL-4 secreted by memory CD4⁺ T cells were found positive in all participants with anti-HBs >100 mIU/ml, while positive in 87% and 75% of the 8 participants with anti-HBs <10 mIU/ml and positive in 73% and 32% of participants with absent anti-HBs respectively. The percentage of memory T cells secreting IFN-γ and those secreting IL-4 were significantly higher among participants with serum anti-HBs >100 mIU/ml than those having <10 mIU/ml or absent. The percentage of memory T cells secreting IFN-γ was significantly higher among participants with anti-HBs <10 mIU/ml than those with absent anti-HBs.

Conclusions: Anti-HBs positivity decreased with passage of time and Hepatitis-B vaccine appears to be efficient in controlling HBV infection. Flow cytometry is a useful tool to assess the long term persistence of T cell memory after childhood vaccination. Vaccine recipients with absent serum anti-HBs should receive a booster dose of HBV vaccine.

Keywords: None
UNDERSTANDING THE IMPACT OF APPROVED BUT UNFUNDED VACCINE STATUS ON PARENTAL ACCEPTANCE OF A NOVEL ADJUVANTED SEASONAL INFLUENZA VACCINE FOR INFANTS

William Fisher¹, Julie Bettinger², Vladimir Gilca³, Michelle Murti⁴, Alison Orth⁴, Paul Roumeliotis⁵, Emmanouil Rampakakis⁶, Vivien Brown⁷, John Yaremko⁸, Paul Van Buynder⁹, James A. Mansi¹⁰

¹University of Western Ontario, London, ²Vaccine Evaluation Center, Vancouver, ³Institut Nationale de Santé Publique du Québec and Université Laval, Quebec, ⁴Fraser Health Authority, Surrey, ⁵Eastern Ontario Health Unit, Cornwall, ⁶JSS Medical Research, Montreal, ⁷University of Toronto, Toronto, ⁸The Montreal Children’s Hospital and McGill University, Montreal, Canada, ⁹University of Western Australia, Perth, Australia, ¹⁰Novartis Influenza Vaccines, Dorval, Canada

Background and aims: Influenza is associated with high morbidity and hospitalisation rates in infants and toddlers. A novel adjuvanted seasonal influenza vaccine (aTIV) may offer a solution. However parents are typically less accepting of approved but not publically funded vaccines (NPF) compared to publically funded vaccines (PF). The current study assessed parental concerns, acceptance, and intention to vaccinate with aTIV and determinants of these intentions in PF compared to NPF settings.

Methods: Parents of children aged 6 to ≤24 months (N=173), presenting for a scheduled “healthy-baby visit,” were recruited and interviewed before and after their health care provider interaction where information about influenza and aTIV was provided. Parents responded to measures of spontaneously elicited beliefs about positive and negative aspects of infant immunization, aTIV, and intentions to vaccinate their infants with aTIV in PF and NPF settings.

Results: A majority of parents (71.3%) intended to vaccinate their infants with aTIV when provided free in PF settings. Intentions to vaccinate infants in NPF settings decreased to 43.9% (25$/dose) and 29.2% (50$/dose). Absence of PF had a substantial impact on beliefs about aTIV: 90.6% of parents agreed that if seasonal influenza “was really an important threat to infants”, if the vaccine was “really effective”(85.3%), and if the vaccine was “safe”(85.2%), public health would fund aTIV.

Conclusions: PF status has a substantial impact on parental perceptions of aTIV necessity, effectiveness, safety, and intentions to vaccinate.

Keywords: None
UPTAKE AND ACCEPTABILITY OF CHILDHOOD VACCINES AMONG HONG KONG TODDLERS

Ting Fan Leung ¹, Kam Lun Ellis Hon¹
¹Department of Pediatrics, The Chinese University of Hong Kong, Hong Kong, Hong Kong, China

Background and aims: A number of existing and new vaccines are not included in the Government Vaccination Program (GVP) of Hong Kong. This study investigated the uptake of such vaccines in Chinese toddlers and acceptability among their parents.

Methods: This study recruited Chinese parents who had children aged 6-30 months. They attended an online survey to complete a self-administered questionnaire on uptake of vaccines under our GVP (http://www.fhs.gov.hk/english/main_ser/child_health/child_health_recommend.html) and five non-GVP vaccines (rotavirus, influenza, meningococcus, Haemophilus influenza type b [Hib] and hepatitis A). Parents gave reasons for non-uptake of these vaccines.

Results: 588 parents with children aged 1.2 ± 0.4 years participated. 314 (53.4%) of these children were males. Five hundred and seventy (96.9%) children received vaccines according to GVP. The uptake rates for rotavirus, influenza, meningococcus, Hib and hepatitis A vaccines were 71.9%, 18.4%, 27.4%, 42.9% and 32.1%. Breastfeeding ever was associated with higher uptake of rotavirus (P=0.003). The most common reasons for non-uptake were high cost for rotavirus vaccine (35.8%), worry about safety for influenza vaccine (46.6%), lack of knowledge about disease for meningococcus (37.7%) and Hib (48.8%) vaccines, and unawareness of vaccine availability for hepatitis A vaccine (31.8%).

Conclusions: The compliance with GVP is high among Chinese toddlers whereas there is variable uptake of vaccines not covered by GVP. Breastfeeding influences rotavirus vaccine uptake. This survey also identifies some barriers for parents to accept non-GVP vaccines.

Keywords: Acceptability, Chinese toddlers, Government vaccination program, Vaccine uptake